Research on the Protection and Renewal of Urban Historical and Cultural Districts from the perspective of Scene Theory

Candidate: Yang Yabo

Department: College of Architecture and Urban Planning

Categories: Engineering

First-level Degree: Spatial Planning

Research Fields: Urban History and Heritage Preservation

Supervisor: Wang Jun Angelika Psenner

Joint Training Institution： Tongji University Technische Universität Wien

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ABSTRACT

With the deepening of China's urbanization process, urban construction has gradually moved from the stage of high-speed development to the stage of high-quality development. In this context, as a concentrated embodiment of the city's material and cultural heritage and cultural style, historical and cultural blocks are of significant significance to show the city's characteristics and promote high-quality development. However, with the rapid evolution of the consumption era, the spatial structure of historical and cultural blocks has undergone profound changes, and the traditional residential space has gradually integrated into the consumption space elements. In this process, due to the excessive pursuit of short-term interests by policy makers, the rapid influx of a large number of commercial elements often destroys the authenticity and integrity of the blocks, resulting in a huge waste of resources and funds. As a theoretical framework to examine urban space from the perspective of consumers, the scene theory has the characteristics of integrity and dynamism, and provides a quantitative scene measurement method, which provides a new research perspective for the protection and renewal of historical and cultural blocks. Taking Luoyang Dongxinanyu historical and cultural blocks as an example, this paper comprehensively uses theoretical research and empirical analysis methods to deeply explore the influence mechanism of multi-type scenes in historical and cultural blocks, and puts forward corresponding scene planning and promotion strategies.

In terms of theoretical research, this paper defines the concepts of scene theory and historical and cultural block by systematically combing relevant literature, and sorts out the existing scene recognition and measurement methods. On this basis, a scene recognition and measurement system suitable for historical and cultural blocks is constructed. At the same time, through literature analysis, the key elements affecting the spatial environment of historical and cultural blocks are screened out, including four major indicators and multiple subordinate factors, such as block traffic, traditional street space, historical elements and facility elements. In the empirical analysis stage, this paper adopts qualitative analysis method to identify the characteristics of the historical and cultural blocks in Luoyang, and summarizes three major types of scenes: life continuation, street consumption and cultural experience. Then, through the field research method of behavior annotation, all kinds of scenes are measured, and the

spatial distribution characteristics of all kinds of scenes are clarified. With the help of ArcGIS, Depthmap10.0 and other software, the spatial environment elements of the block are quantitatively analyzed, and the correlation analysis of the types of scenes and the influencing factors of the spatial environment is carried out by using SPSS software. Based on the analysis results, the index factors that have a significant impact on all kinds of scenes are screened out, and the positive and negative, strength and weakness and influencing mechanism of these factors on the scenes are deeply analyzed. The study found that the impact of the relevant factors in the block traffic, traditional street space and facilities on different types of scenes is different, while the relevant factors in the historical elements have a positive impact on all kinds of scenes. Therefore, in the scene update and transformation of the historical and cultural blocks, we should pay attention to improving the relevant factors of the historical elements, rationally layout the facilities, and moderately transform the traditional space of the street, so as to achieve the sustainable development and characteristic protection of the blocks.

Key Words: Scene Theory, Historical and Cultural Districts, Urban Renewal, Heritage Preservation, Cultural Scenes

CONTENTS

Chapter 1 introduction

1.1 Research Background

1.1.1 Emphasis on historical and cultural blocks under the high-quality urban development

With the deepening of China's urbanization process, urban construction has gradually shifted from the high speed development to the high quality development. In this transformation, the focus of urban development has shifted from the development of unused land to the optimization and promotion of existing resources. In this process, improving residents' happiness has become an important goal we pursue. In the background of urban renewal, the protection and renewal of historical and cultural blocks has become a high-profile issue. These blocks are not only the gathering places of the city's material cultural heritage and cultural features, but also the precious space to show the city's characteristics and keep the memory of the city alive. They are of irreplaceable significance for promoting the high-quality development of urban and rural areas.

In recent years, the national level attaches more and more importance to the protection of history and culture, and the urban planning community has also paid great attention to it. As one of the core elements in China's historical and cultural heritage protection system, historical and cultural blocks are an indispensable part of the protection system of famous historical and cultural cities. These blocks carry rich historical information and show their irreplaceable historical value, which is of vital significance for the protection and inheritance of Chinese culture. At the same time, historical and cultural blocks are also important space units for people's daily life, work, leisure and recreation, which play an irreplaceable role in improving the cultural connotation of the city and the living quality of residents.

1.1.2 Construction planning of consumption space under economic growth demand

During the 14th Five-Year Plan period, China embarked on a new journey of building a modern socialist country in an all-round way. In terms of Commerce, the Ministry of Commerce and other 14 government departments jointly issued the Guiding Opinions on Cultivating and Building International Consumption Center Cities in 2019, aiming to build a number of specialized, regional and international consumption center cities, so as to lead the trend of consumption, promote the upgrading of industrial structure, and thus drive sustained economic growth.

In the government's consumption space construction planning, the word "scene" appears frequently, which highlights its importance. From 2019 issued by The General Office of the State Council "about speed up the development of circulation to promote commercial consumption opinion" in "make night consumption scene and concentrated area", to 2021 the State Council issued by the 14 five-year plan and 2035 vision goal outline emphasizes the "build a modern fashion consumption scene to improve the quality of urban life", all shows the scene theory in shaping the unique value of urban production and living space.

In recent years, the concept of "scene" has gradually penetrated into the field of urban planning and construction, and some forward-looking cities in China have begun to actively explore and practice it. By creating distinctive urban consumption scenes and community scenes, it can not only improve the quality of life and cultural connotation of the city, but also promote the optimization and upgrading of the industrial structure and promote the sustainable growth of the economy. Taking Chengdu as an example, taking the construction of "park city" as an opportunity, the city first put forward the concept of "scene camp city" in the field of urban planning practice. The concept of city park as a new economic development, promote ecological scene and consumption scene, cultural scene, life scene to create unique park city scene brand, inject new vitality for the development of the city. At the same time, the "Future Community" project in Zhejiang Province is also a vivid practice of scene theory in urban planning. The project focuses on the quality of urban community life as the starting point, and puts forward the "nine scenes". The "nine scenes" are carefully classified, and relevant requirements are put forward from facilities, services, governance and other aspects and refined into planning and control indicators, forming a set of planning technical framework of community scenes.

1.2 Study object and significance

1.2.1 Study subjects

With the development of the city, the historical and cultural blocks are also constantly adapting to the needs of the new era. The historical and cultural block, with its unique architectural style, rich historical relics and rich cultural atmosphere, attracts countless tourists to stop to visit and consume, and has become a prominent cultural resort in the city. This phenomenon of cultural consumption not only injects new vitality into the historical and cultural blocks, but also promotes it to keep pace with The Times and constantly glow with new vitality and charm.

In the past, the protection of historical and cultural blocks in China often paid more attention to the single buildings, but ignored the surrounding cultural background and the functional upgrading of the buildings. From the perspective of scene theory, the block is regarded as a collection of cultural consumption. On the one hand, the history of historic district streets, bump unit, historical buildings, etc., constitute a special comfort system in the scene elements, contribute to the definition of cultural scene characteristics and scene type identification. on the other hand, the integrity of scene theory promotes the overall value of historical and cultural blocks and cultural connotation. Therefore, the application of scene theory can better analyze and promote the protection and renewal of urban historical and cultural blocks.

The empirical research object selected in this paper is the Dongxinanyu historical and cultural block in Luoyang. Luoyang is one of the oldest capitals in China and the famous ancient capital of thirteen dynasties. Since the Xia Dynasty, the history of Luoyang's capital has lasted 1,500 years and 4,000 years, thus leaving rich natural and historical and cultural resources. The Dongxinanyu historical and cultural block is located in the old city of Luoyang, which is the only existing section in Luoyang with relatively complete preserved traditional features. The existing original residents in the block is about 14000 people. The block which combines the space of local daily culture and modern consumption space, is suitable with the perspective of scene theory, to study how to produce cultural scene consumption space, how to enhance consumer perception for local cultural consumption experience, and the resulting culture scene with historical and cultural blocks.

1.2.2 Study Significance

(1) Look at the historical and cultural blocks from a new perspective

Traditionally, historical and cultural blocks are often simply regarded as static historical heritage, and their protection and restoration work mostly focus on the maintenance of architectural features and surrounding environment. However, under the guidance of the scene theory, we should examine these blocks from a completely new perspective. Historical and cultural blocks are no longer only witnesses of history, but also vibrant cultural consumption places in modern urban life. From the perspective of consumers, the historical and cultural block is not only a building cluster of brick, but also a cultural space integrating shopping, leisure, entertainment, communication and other multiple functions. Here, consumers can feel the strong historical atmosphere, experience the unique cultural charm, but also can meet their daily consumption and social needs. Therefore, the protection and renewal of historical and cultural blocks should pay more attention to the needs and feelings of consumers, and create a more attractive and dynamic place for cultural consumption.

(2) Re-examine the protection and renewal of historical and cultural blocks

To put the historical and cultural blocks under the perspective of cultural consumption, we need to rethink their strategies of protection and renewal. The traditional protection mode often pays too much attention to the preservation and restoration of the material level, while ignoring the cultural consumption attribute and social function of the block. However, in contemporary society, the value of historical and cultural blocks lies not only in their historical value, but also in their ability to provide rich cultural experience and social space for modern urban life. Therefore, when protecting and renewing the historical and cultural block, we should pay attention to the realization of its contemporary value. This includes promoting the interaction between people and buildings, creating a pleasant walking environment, encouraging human interaction and creating a diversified social space, and meeting the needs and purposes of cultural consumption, and providing rich cultural activities and consumption choices. Through these measures, we can make the historical and cultural blocks radiate new vitality in the modern urban life, and realize the living inheritance.

(3) Provide a new analytical framework for the historical and cultural blocks

In scene theory, by setting scene dimensions and assigning value calculation, each element of the block can be quantitatively analyzed, so as to evaluate its protection and update effect more scientifically. Specifically, the scene theory analyzes the historical and cultural blocks from multiple dimensions such as material space elements and cultural consumption attributes. By combing the relevance of these elements, we can

deeply explore the reasons behind the phenomenon, and provide targeted suggestions for the protection and update work. For example, through the analysis of which material space elements have important influence on block cultural consumption attribute, which material space elements can promote the communication and interaction between people, based on the analysis results, planners can develop a more accurate and effective protection and update strategy, promote the sustainable development of historical and cultural blocks.

1.3 Research method and content framework

1.3.1 Study Methods

This paper selects different methods for theoretical research, field research and data analysis. The specific methods are as follows:

(1) Theoretical method

Literature analysis. With the help of CNKI, school library and other channels, study the relevant literature and research results of scene theory, draw lessons from its theoretical basis and research dynamics, and summarize the concept generation process and connotation characteristics of scene theory. At the same time, read the relevant documents of environmental behavior science and the empirical studies of historical and cultural blocks to summarize them.

Typological induction method. Combined with relevant data and literature research, the method of typology is applied to classify and summarize the spatial environment elements in the historical and cultural blocks, so as to provide the basis for screening the correlation factors that affect the scene performance of the historical and cultural blocks

(2) Research methods

Network data acquisition method. For the general situation and development status of the research subjects, consult the official website of Luoyang Municipal Government and Luoyang Bureau of Planning and Natural Resources, to deeply understand the historical evolution, block status and development planning of the Dongxinanyu historical and cultural blocks of Luoyang, so as to provide support for this study.

Field research method. Field investigation is combined with observation and

interview methods, observation, shooting and record the current situation of the research objects on the spot, understand the specific situation of the research objects, adopt the field research methods of annotated behavior according to different behavior methods, and at the same time, extensively collect information, suggestions and experience from various aspects, to obtain the first-hand information needed for the paper.

(3) Analysis method

Text semantic analysis method. Compared with the traditional questionnaire data, the Internet data shows its unique advantages. These advantages are first reflected in the flexibility of the evaluation framework. Traditional questionnaire surveys are often limited by fixed questions and options, while online comments are more free, and users can express various opinions according to their own feelings. Therefore, their evaluation information is more diversified and extended, providing researchers with richer analysis materials for researchers. In this study, professional analytical tools were used to comb these comments frequently to reveal the keywords and topics frequently appearing in the comments. On this basis, the three-level coding analysis method is further adopted to encode and condense the network comment text step by step, so as to deeply identify the scene characteristics of the research object.

Method of spatial geographic analysis. The spatial geography analysis method provides us with a means to study the historical and cultural blocks from the spatial perspective. In this study, nuclear density analysis and spatial syntax were used. With the help of ArcGIS and other geographic information system software, baidu POI data and spatial element measurement data are processed and analyzed. Meanwhile, the paper analyzes the traffic network structure and spatial form through Depthmap 10.0 software. The calculation of integration degree and selection degree reveals the connectivity and convenience of traffic network, while the data such as understanding degree and connection value reflect the rationality of spatial layout and people's spatial cognition.

Mathematical statistical analysis method. In mathematical statistical analysis, the collected data are subjected to statistical software such as SPSS. Cluster analysis helped this study identify different categories of data points, revealing the intrinsic structure and relevance of the data. The correlation analysis reveals the degree of correlation between variables, which provides a basis for explaining the mutual influence of the scene components of historical and cultural blocks, further explores the causal

relationship between variables, and provides decision support for the formulation of targeted protection and update strategies.

1.3.2 Study Contents

From the purpose of protection and renewal of historical and cultural blocks, this paper analyzes this problem from the perspective of scene. By combing relevant theories at home and abroad, the application value and research status of scenes in historical and cultural blocks are summarized, and the multi-class scene measurement method and spatial environment elements of historical and cultural blocks are constructed. Finally, taking the Dongxinanyu historical and cultural blocks as the research object, study the correlation between the scene and the spatial environment elements. Try to find the influence factors and mechanisms of various scenes in the historical and cultural blocks and the strategies of urban renewal and historical heritage protection. This study is divided into five parts:

The first chapter is the introduction, which introduces the research background, research object, research purpose and significance, research content and method of the article;

The second chapter is a review of the scene theory concepts and related literature. This chapter intends to adopt the literature research method, the origin of the scene theory, the research development status, historical and cultural block protection and update the research summary on the basis of definition, the concept of the historical and cultural blocks, clearly expounds the existing research content and the existing problems.

The third chapter is the construction of scene measurement method and spatial environment influence system of historical and cultural blocks. The study intends to use the semantic analysis method to identify scene characteristics and establish the connection between externalized behavior and scene. At the same time, the measurement method of various scenes in historical and cultural blocks with the framework of "externalized behavior —— values —— scenes" is constructed. On the basis of the literature review in Chapter 2, the study plans to sort out the spatial environment influence indicators of the historical and cultural blocks under the scene theory, and explain the data sources and quantitative measurement methods of each index.

The fourth chapter is an empirical study of the Dongxiannayu historical and

cultural blocks. By means of field investigation, data collection, historical literature, relevant public statistical data and other methods, the performance of the research object in the five elements of the scene is sorted out, and the scene types and scene functions with regional expression are clearly defined. Different scene types are measured by behavior annotation, and the characteristics and problems in the spatial distribution of various scenes are analyzed. Multi-source data were used to quantify the spatial environment indicators of the study object.

The fifth chapter is the analysis of scene influence mechanism and scene promotion strategy in historical and cultural blocks. Using the previous scene measurement results and spatial environment elements measurement results, the correlation between the two is analyzed in SPSS to explore the relationship and influence mechanism of various spatial environment elements and various scenes. According to the summary of the current situation of the historical and cultural blocks in the fourth chapter and the correlation analysis results, the scene optimization strategy of the historical and cultural blocks is proposed.

The sixth chapter is the summary and prospect, which mainly summarizes the research results of the second to fifth chapters, and points out the innovation points, shortcomings and further work direction of this research.

Chapter 2 Scene theory interpretation and related literature review

2.1 Concept of scene theory and generation process

The word "scene" originated from the setting in the stage performance art and the film art, which refers to the basic unit of the plot development process in the performance of the works, and is the continuous life picture formed by the characters in a specific time and environment. Since then, it has been widely used in communication, sociology, marketing and other fields. In the field of sociology, the theory of explaining urban development has undergone a huge shift. In the 1950s, a large number of people flooded into cities, and industrial cities represented by manufacturing industry rose, and cities kept expanding outward. Therefore, some scholars believe that land, labor, capital and human capital are all important factors of production to promote urban development. After the 1960s, along with the profound transformation of the economy and society, the western world has successively presented the characteristics of "consumer society". Culture and art have become the commodities that can be consumed, and the space bearing the cultural and artistic genes has also become an important consumption object. In the 1980s, with the gradual arrival of the post-industrial era, many manufacturing industries began to withdraw from the urban centers. At the same time, a series of emerging industries, such as leisure and entertainment, cultural creativity, financial services and high-tech, are gradually converging in the city center. This shift has led to the transition of the urban development model from the traditional production model to the current consumption model. In this context, the scene theory emerged and became an important sociological theory to explain the driving force and mechanism of urban sustainable development in the new era.

Scene theory is deeply influenced by the theory of Amenity, which originally originated in the field of economics. The theory of Amenity holds that human mobility is based not only on economic and job opportunities, but also on life opportunities, especially for the creative class[1]. Amenity is the thing, environment, event, facility or service that instruct people to feel comfortable, pleasant and satisfied in their senses

and mood[1]. On the basis of this theory, the scene theory further explores the classification of urban Amenity, from the study of a single Amenity to the study of the overall combination of Amenity[3]。

The core point of scene theory is to examine the urban space from the perspective of consumers, and regard it as a mixture of cultural values that gathers various consumption symbols, namely "scene"[2]. Scene theory brings a new perspective and analytical framework to the research of urban problems, which enriches the research dimension of urban space, and extends the research of urban space from the level of natural and social attributes to the practical level of regional cultural consumption[3]. At present, the school of urban research represented by Clark has constructed a scene knowledge system containing five elements, and puts forward three dimensions of subjective knowledge of the scene, which provides a framework for quantitative and systematic urban scene research. The scene includes five elements: (1) neighborhood; (2) Physical structure, namely urban living and entertainment facilities, which can also be understood as Amenity; (3) Persons labeled by race, class, gender, education, etc; (4) The specific combinations of these and activities; (5) values (Legitimacy, Theatricality and Authenticity).[4]

2.2 Related research on scene theory

2.2.1 Study on the theoretical significance of the scene

Since 2012, scene theory has been gradually introduced to China by some sociological research scholars, and its early research has focused on the related fields of urban sociology. In recent years, the research on the theoretical significance of scenes mainly focuses on social transformation, humanistic experience, cultural value and urban endogenous power.

Wu Jun (2014) believes that the scene is inseparable from local culture, and the scene theory is helpful to understand the mechanism of driving urban cultural consumption, and is far-reaching for urban public policies[9]. Xu Xiaolin (2012) believe that based on scene theory, it can promote the construction of regional development model and innovate public policies, emphasizing that in the post-industrial era, the government should pay attention to the construction of urban facilities and formulate public policies to attract excellent human resources[6]. He Yuzhen (2015) and others

through the analysis of Chicago culture to promote the successful transformation of urban case, put forward the strategy of China international cultural center strategy, mainly divided into cultural facilities layout, cultural project branding, cultural industry innovation, and cultural talent training in four aspects and a number of secondary city public policy[28]. Fan Yugang (2017) believes that scene theory provides a new theoretical thinking for urban policy makers, but it should play its value based on China's actual national conditions and cultural traditions[12]. Chen Bo et al. (2020) constructed an evaluation system of cultural scenes. Based on the cultural comfort scores of 31 cities in China, they clustered the cultural scene patterns of four cities, and reflected the results in the geographical space. The conclusion is that the current urban cultural scene in China has typical characteristics of The Times and local culture[21]. Wu Jun (2020) believes that the scene can be used as a new driving force for the development of modern cities, providing theoretical support for China's construction as an international consumption center city[13]。

2.2.2 Study on the practical significance of the scene

Based on the research of scene theory on urban and rural transformation, some Chinese scholars have sorted out the spatial planning guidance of scene theory, and pointed out the practical significance of scene theory applied to public cultural space, historical and cultural blocks, urban consumption facilities construction, community construction, rural revitalization and other aspects.

Some scholars apply the scene theory to the study of urban public cultural space, which can highlight its history and location. Chen Bo (2017), with the help of the three dimensions of scene theory, analyzed the correlation relationship and influence degree of cultural scene experience on residents' cultural participation, and pointed out the value measurement dimension of public cultural space in urban blocks[21]. Geqi (2017) analyzed the development mode of Beijing 706 space from the five elements of the scene and concluded the construction path of public cultural space for urban youth in China[30]. Fu Caiwu (2021) used the scene theory to score the cultural scene value dimension of Changsha Super Wen Heyou, believing that the construction of cultural scene plays an important role in promoting urban consumption culture and developing night economy. The conclusion is that the construction and transformation of urban comforts with local cultural characteristics should be emphasized[22]。

Some scholars apply the scene theory to the field of historical heritage protection.

Scholars have generally accepted the view that "cultural scenes and heritage protection promote each other". At present, historical and cultural blocks are not only a single static urban heritage, but also a cultural place to attract consumers to stop for sightseeing and consumption because of their profound historical memory[23]. Scene theory can be used to identify the comfort system and cultural value characteristics of historical districts, historical and cultural towns, etc[17][20]. Li Heping (2022) constructed the research framework of the scene, selected empirical cases, identified the characteristics of the scene through network comments, and distributed the questionnaire to measure and analyze the scene. The study verifies the feasibility of the framework by comparing the scene measurement results before and after the update[20]. Zhou Detailed (2021) discusses how the scene affects the perception of historical urban landscape, and points out that attention should be paid to the historical authenticity of scenes created by local culture[16]. At the same time, the scene theory can also become a transformation strategy to solve various problems in the transformation and upgrading of historical and cultural blocks, construct historical and cultural scenes, and reconstruct the space of urban blocks[16][17][20][22]。

Some scholars pay attention to the construction of urban consumption facilities. Qi Ji (2022) studied 18 national 5A level scenic spots, and proposed that night tourism is affected by the Amenity system of interrelated combinations[24]. Shao Juan (2019) studies the construction of urban public reading space with the main body of physical bookstores, and proposes to create a scene-based urban reading space from three aspects: sensory and aesthetic experience, meeting cross-border needs, and carrying out characteristic activities[27]. Zhang Lin et al. (2020) put forward the scene characteristic dimension of characteristic towns, constructed the index system of fuzzy set and qualitative comparative analysis, made empirical analysis of 33 characteristic towns in Sichuan and Chongqing, and proposed that characteristic towns should pay attention to the scene construction of consumption facilities[15]。

Some scholars have made research on the practice of scene theory in the community. Wu Jun et al. (2021) studied the consumption behavior of young and middle-aged people in the community, clustered from four dimensions of public facilities, life services, community retail and cultural entertainment, divided the community consumption scene into four types, and studied the characteristics of community groups corresponding to each type[13]. In the urban community renewal, the way of scene creation can promote the emergence of new application scenarios and

lifestyles, and establish new community values in norms. Zhao Wanmin et al. (2021) believe that the renewal goal of the old community is in line with the value of scene transformation, and put forward the life scene of the community from three aspects: multi-dimensional role portrait, transformation of inefficient space, and organization of cultural consumption activities[25]. Meng Dancheng et al. (2021) believes that the construction of community health scene can guide the residents' behavior mode to be healthy, and then put forward nine scenes of healthy community from the perspective of five elements of scene theory, selected the healthy community evaluation indicators widely used at home and abroad, and analyzed the importance of each indicator to various scenes[19].

Some scholars recognize that the scene theory can be used as an endogenous impetus to promote rural revitalization. Fu Caiwu (2016) determined the measurement dimension of rural public cultural space according to the scene theory, so as to guide the construction of rural public cultural space with quantitative research[10]. Cao Zhikui et al. (2022), based on the construction concept of nine future rural scenes in Zhejiang Province, constructed three scene types of industrial scene, perfect scene and basic scene from the perspective of five scene elements to provide a basis for the implementation of rural revitalization strategy[13]. Li Ling (2021) applied the scene theory to study the relationship between the integration perception of rural culture and tourism and tourist satisfaction, and believed that the transformation and development of rural tourism destinations can be promoted from the perspectives of aesthetic scene building, activity scene innovation and industrial scene integration, and finally realize rural revitalization[29].

Table 2.1 Analysis of scenarios in the field of urban planning

field of investigation	Focus dimension	research technique
Urban public cultural space	Value identification	Scene element interpretation
Historic heritage protection	Value identification Protect the update Spatial perception	Scene measurement Scene element interpretation
Urban consumption facilities	Construction focus consuming behavior	Scene recognition Scene measurement
urban community	Community renewal Spatial perception Resident behavior	Scene element interpretation Scene recognition

rural planning	Value identification rural revitalization	Scene element interpretation Scene recognition

2.2.3 Research method of scene theory

At present, the main research methods of the existing studies can be divided into several categories.

The first is based on the connotation of the scene theory itself proposed by Clack, interpret and identify the five components of different spatial types, conduct spatial analysis, and finally remind and implementation suggestions or implementation paths from the perspective of construction methods. Liu Dongchao (2017) took Beijing Nanluoguxiang as an example to identify and analyze the five elements of the block from the perspective of the scene, so as to show the dynamic structure of Beijing's urban development[11]. From the perspective of the five elements of the scene, Li Lin et al. (2019) advocated the concept of overall integrity, and discussed the protection and renewal strategies of urban historical and cultural blocks in terms of public facilities, diverse groups, characteristic activities and cultural values from the perspective of the scene theory[23]。

The second method is a diversified exploration of scene identification and analysis methods, using different data types and data analysis methods to identify and analyze scene features. In terms of scene recognition methods, Zhou Detailed, Li Heping, Tang Juan and other scholars used qualitative analysis tools to sort out the network text, and used the rooted theory method to encode the text step by step, forming a multi-level tree structure of scene recognition[16][17][20]. Geqi (2017) used "cultural scene grammar" to determine the degree summary of Beijing 706 in 15 sub-dimensions of scene theory[30]. In terms of scene analysis methods, Chen Bo (2020) used variable clustering analysis to divide the cultural scenes of 31 cities into four categories, and correlation regression analysis was used to study the influencing factors of urban cultural scenes[21]。

The third is the measurement method focusing on the cultural characteristics of the scene. Based on the analysis method and analysis framework of the scene theory, the framework is tested and optimized according to the problem of index localization. Tang Juan (2023) believes that the Amenities of historical and cultural blocks has its particularity, and the index system of traditional scene cultural value identification (15 indicators in 3 dimensions) needs to be discussed, and 15 secondary indicators are

expanded to 26[17]. Chen Bo (2017) also modified and optimized the secondary measurement indicators in the three dimensions according to the particularity of the sense of gain in cultural participation[26]。

2.3.4 The law of spatial environment affecting perception and behavior

According to the research status of Table 2.2.3, it is found that in the application and planning field of scene theory, in addition to the value recognition and protection update dimensions that tend to solve the actual needs of planning, many scholars try to use this theory to help study the spatial perception and behavioral dimensions of revealing laws. The influence law of space environment on perception and behavior is a complex and multi-dimensional issue, involving many disciplines such as psychology and architecture. The relationship between space environment and psychological behavior has been studied for a long time, producing two theoretical categories of environmental psychology and environmental behavior.[6]

Environmental behavior holds the relationship and interaction between the environment and explicit behavior. Since the 1960s, environmental behavior has emerged and has been widely studied and applied worldwide. In the 1980s, the field of environmental behavior research was introduced into China, and now it has become an important issue in the field of architecture and urban and rural planning. This discipline has experienced more than 40 years of development in China, and has achieved a large number of applied research and practical results. Environmental behavior research, there are three points of view, one is that the environment can determine human behavior, a behavior is the result of the intrinsic factors of the organism and the environment the interaction between the external factors, one is that human behavior can affect the environment, and may completely change the nature and significance of the environment.

In terms of the relationship between spatial perception and behavior, spatial perception can be regarded as a kind of cognitive activity in essence, which is a cognitive process with the spatial environment as the main object, and is closely related to cognitive psychology. Cognitive psychology believes that cognitive activity includes specific links such as feeling, perception, memory, thinking and imagination. In addition, on the basis of the traditional "spatial-perception-behavior" pattern, some

scholars propose the existence of an emotional system, which plays a key role in people's cognitive activities. Since the process of spatial perception can be regarded as the satisfaction of the current basic needs of space, when the brain has different satisfaction with the information obtained after spatial perception, different emotions will arise, and then the corresponding spatial behaviors[1]. That is, spatial perception is not only a passive acceptance of external environmental information, but also a process of active evaluation of space and evolution into external behavior under the current basic needs of people.[36]

With the continuous improvement of the relevant theoretical research on the relationship between environmental——psychological——behavior. Many scholars have begun to apply the results to architecture and urban planning. American scholar Kevin Lynch first discussed the relationship between human subjective consciousness and urban architecture in the 1960s, and pointed out that the material environment, as an objective existence, can profoundly affect individuals' perception of space, thus forming a clear spatial image. Through his study of Boston, Los Angeles and Jersey City, Lynch discusses the urban imagery into five elements: road, marker, boundary, node and region. Regarding the perception and behavioral measurement of people in the space environment, the common research methods mainly include graphic representation method, scale method, physiological signal method, etc.(Table 2).2

Drawing method for perception and behavior research, mainly have Cognitive Mapping and Behavior mapping. Cognitive mapping method mainly based on Kevin Lynch's urban image theory, examine different people for terrain, buildings, roads, people, such as perceptual memory, used to understand and describe how people perceive and understand the environment. Lu Min et al. (2016) studied the collective memory of residents in historical blocks through cognitive mapping method, and finally obtained the main spatial environment elements that affect the collective[39]. Behavior mapping is a method to vertex observe and measure the behavior of people in a specific time period of a specific place. Usually, researchers will mark individual behavior on a map with symbols. Wu Haowen (2013) selected three district-level parks in Hangzhou to study the use behavior and distribution of people in the parks by means of behavior mapping, and to study the relationship between them and the space, and finally put forward suggestions for transformation[38]. Gu Zhixin (2016) analyzed the night tourism behavior of Dongcheng barrel Lane in Nanjing Gate, in order to study the influence of the spatial layout of leisure blocks on the night tour behavior[37]。

For the study of perception and behavior, most studies mainly use the Semantic Differential method (SD). Semantic difference analysis is a method of quantitative psychology, which is widely used in the study of spatial perception. It usually evaluates objects or concepts using a series of opposing adjective pairs, and participants give their evaluation of specific concepts based on them. Through the statistical analysis of the results, researchers can derive quantitative data on the evaluation and attitudes of specific concepts or objects. The study of SD method on behavior in space is mainly reflected in the willingness to act. Wang De (2011) analyzed the correlation of 20 pairs of psychological quantity and the spatial environment indicators of the street by studying the street space in Shanghai. The study found that some spatial environment indicators that were thought to have an impact on psychological volume did not show the expected correlation[40]. Han Xiao et al. (2019) used SD method to evaluate the characteristics of consumer behavior in bookstores and study the reasons for consumers' stay[41]。

In recent years, with the progress of science and technology, some scholars use physiological signals to study emotions, and then study human behavior and spatial perception. "Physical signal method" usually refers to a scientific method that uses physiological signals (such as EEG, heart rate, electrical skin reaction, etc.) to study human behavior, mood or cognitive states. By monitoring and analyzing the physiological signal changes in the human body, researchers can understand the physiological responses of individuals in different situations, so as to reveal their emotional state, cognitive load, attention level and other internal states. Zhu Meng et al. (2021) studied the recovery effect of human-time space environment with the advantages of real-time and sensitivity of physiological signals[36]. In addition, some scholars have used the eye tracker in cognitive and behavioral experiments to study the visual behavior of people in different spatial environments.

Table 2.2 Method analysis table of studying the relationship between spatial environment and perception and behavior

Method type	Example method	Method advantages	Disadvantages of methods
graphic method	cognitive map, Acts note	Behavior and perception are closely related to the elements of the specific space	It is difficult to analyze the psychological differences in the population

method of scaling	SD scale score	Ability to visualize the analysis results in a quantitative way	The indicator dimension and the results
Physiological signal method	The eye movement instrument, Sensing device, etc	Reflect the data in real-time, with a relatively high sensitivity	Precision needs further technical development

2.3 Related research on historical and cultural blocks

2.3.1 The protection and renewal process of the historical and cultural blocks

As an important carrier of urban civilization, historical and cultural blocks carry rich historical memory and cultural connotation, and not only have profound cultural deposits, but also have inestimable economic value. However, the excavation and inheritance of this value cannot be achieved overnight, and its concept and system of protection and renewal have experienced a long course of development both at home and abroad.

At the international level, the protection and renewal process of historical and cultural blocks has been promoted through a series of conference declarations and charters related to heritage protection. From the early Athens charter of the principle of ancient architecture protection, to the Venice charter of the historical area, to the machu Picchu charter to use the importance of historic sites, and the combination of historic district protection and social and economic development concept, we can see the evolution of the city historic district protection concept. From single building to historical area and then to historical city, the protection scope has been continuously expanded. From the material level of architecture and environment to the non-material level of life style and cultural heritage, the dimension of protection has also been gradually expanded. From the perspective of the protection and renewal process of western urban historical blocks, the concept of protection and renewal has experienced a change from "neglect" to "attention", from the protection of "individuals" to "groups" and then to the protection of "whole", and from the simple protection of "material" to

the deepening of "material + non-material"[31]。

The protection and renewal process of historical blocks in China is different from that of western developed countries, which is mainly reflected in the characteristics of top-down and one-way administrative management system[1]. It was not until the 1980s that China really began to put forward the concept of the protection of historical blocks. During this period, the concept of protection gradually expanded from the initial focus on single cultural relic buildings or buildings to urban blocks and even the whole city. In 1986, the State Council first proposed the concept of "historical and cultural protection areas" when it announced the second batch of famous national historical and cultural cities. Since then, the central and local governments began to formulate a series of relevant laws and regulations and protection and management regulations, and the protection system of historic districts has been initially established. Subsequently, in October 2002, the Law of the People's Republic of China on the Protection of Cultural Relics revised by the Standing Committee of the Ninth National People's Congress was officially promulgated and implemented, which marked that the protection of historical and cultural blocks in China began to step into the track of legalization, and the protection system was gradually improved.

2.3.2 Research dimension of historical and cultural blocks

Historical and cultural blocks, as an important part of urban development, carry profound cultural heritage and profound urban memory. However, with the accelerating pace of urbanization and modernization, the protection and renewal of historical and cultural blocks have become more and more important. In this context, many domestic scholars take different research dimensions as the breakthrough point, with the help of various research theories, to conduct an in-depth and comprehensive research. At the same time, in the field of urban planning, implementation has always been the top priority of research. This core goal has attracted different scholars to make a detailed analysis of the protection and renewal of historical and cultural blocks from their own research perspectives. Although they have their own views and strengths, the common feature is that they are committed to reveal the shortcomings in the protection and renewal of the current historical and cultural blocks, and put forward feasible improvement strategies based on this. The research dimension mainly includes the current situation of material space, value evaluation, commercial development, experience perception, behavior vitality and social space system.

The study of the material space status quo of historical and cultural blocks involves the in-depth analysis and evaluation of the block buildings, streets, public space and environmental facilities, which helps us to have a more comprehensive understanding of the spatial form and characteristics of historical blocks. Different scholars analyze the material spatial form of historical blocks by means of subjective induction method and relatively objective quantification method of spatial structure. Chen Zhongguang et al. (2009) applied the principle of spatial syntax to study the spatial form and structure characteristics of historical blocks from the three spatial scales of Fuzhou city, the historical and cultural blocks, and the building courtyard inside the ministry[42]. Zhou Jian (2007) used the idea of typology to identify, extract and analyze the material space of historical blocks, —— composed of buildings, streets and interfaces[43]。

The value evaluation research of historical and cultural blocks mainly takes its basic characteristics as the starting point, and uses scientific research methods to explain the unique value and potential significance of historical blocks comprehensively and objectively. To provide a basis for its protection and update and to see the sustainable development. Different scholars have put forward a variety of value evaluation dimensions. In China, the value evaluation of the existing historical and cultural blocks mostly follows the triple standards of historical value, artistic value and scientific value in the Law of the Protection of Cultural Relics of the People's Republic of China. On this basis, many scholars have further put forward the social value, cultural value, economic value and other other value evaluation criteria. Yu Hongxia (2014) believes that the value of historical and cultural blocks should be dynamically evaluated. The study uses the expert scoring method to create a value evaluation system of eight aspects of historical and cultural blocks, and evaluates and verifies the three historical and cultural blocks in Qingdao based on this system[44]. Wu Xinyan (2015) constructed an evaluation system from the perspective of the morphological value of the historical blocks, and summarized the basic value of the historical and cultural blocks in Guangzhou-Foshan area by setting indicators and calculating weights[46]。

Tourism and commercial development has become one of the main ways for the revival of urban historical and cultural blocks, but the situation in the historical district is complex and the heritage is numerous, so the development will inevitably have a certain impact on the natural environment and social culture of the historical district. Therefore, some scholars have conducted a suitability research on the development of

historical blocks, so as to study the protection, renewal and sustainability of tourism development of historical and cultural blocks. Wang Piao (2017) believes that the protection of historical and cultural blocks is an important prerequisite for the development of block tourism, and constructs an evaluation model for the coupling and coordination of the relationship between historical district protection and urban tourism[45]. Zhou Qian et al. (2018) selected the evaluation index of the suitability of historical and cultural blocks based on the value target, based on the cognition of tourists and residents on the historical and cultural blocks, evaluated the commercial suitability of Chongqing Ciqikou historical and cultural blocks, and finally put forward relevant planning suggestions[49]。

The study of spatial perception of historical and cultural blocks started late in China. Mr.Zhu Zixuan summarized the core of the protection of historical blocks from three aspects: the authenticity of history, the integrity of style, and the continuity of life. The evaluation of spatial perception in historic districts has long been focused on the study of the perception of authenticity. Liao Renjing et al. (2009) divided people into three categories based on the travel motivation of recreation people, and studied the importance of multiple factors on the authenticity perception of various groups through questionnaire analysis. The study found that the perception of authenticity is not invariable. With the development of time, some factors have gradually been recognized by people and become an important part of the block culture[50]. With the development of The Times, the continuation of historical context and features has become the focus of the protection and renewal of historical blocks, and the study of the image perception and evaluation of historical blocks has gradually become the mainstream. Gao Jun (2014) started from the tourists' network notes, comments and other text materials, using the content analysis method to analyze the image of historical districts[51]. In recent years, China's high-quality development strategy is put forward, and the spatial perception of historical blocks gradually pays attention to the quality, charm, experience, locality and other aspects. Cui Xu et al. (2018) selected 43 evaluation phrases related to space charm, and finally determined 13 key factors affecting the space charm in four categories, including scene experience, space cleanliness, coordination between ancient and modern times, and nostalgia knowledge, and constructed the charm evaluation system of historical and cultural blocks[52]. Zhang Fang (2019) conducted a quantitative study on perceptual experience, and extracted the influence factors of local identity in historical districts in the aspects of architectural environment, business and culture[53]。

The vitality of historical and cultural blocks is related to the revival of historical blocks, which is the key research direction of many scholars in recent years. The study of the vitality of historical districts mainly includes street vitality, commercial vitality, cultural richness, community residents' participation and so on. Some scholars have constructed an evaluation system for the vitality of historical districts in qualitative and quantitatively. Liao Hui et al. (2017) constructed a research system of street vitality for residential historical blocks through field investigation and measurement[54]. Through field research, MAO Zhirui et al. (2021) not only measured the density of population activity in the historical district, but also paid attention to the diversity of behavior, and discussed the contribution of necessary behavior, spontaneous behavior and social behavior to the vitality of the streets[55]. Some scholars use the research method of multi-source big data to evaluate the vitality of historical blocks. Based on POI and urban travel network data, Zhang Yuyang et al. (2019) built a vitality evaluation system for historical blocks of streets and alleys, and analyzed the factors affecting daytime vitality and night vitality[56]. Lu Tian (2016) analyzed the dynamic characteristics of people in historical blocks through vectorized Baidu heat maps of different periods of working days and non-working days[57]。

The social space study of historical and cultural blocks emphasizes the social attributes in the space. China's historical and cultural blocks in China have caused many social problems due to the complex ownership of property rights and the freezing and protection of cultural relics. In the process of protection and renewal, multiple subjects are involved, and the social forces are dispersed. At the same time, the desire of residents' willingness to govern is gradually strong, and the boundary between social space and architectural space is gradually melting.[62]Some scholars put forward strategies to promote the implementation of planning from the perspective of property rights. Ding Qi et al. (2021) took property rights as the basis to overlap building types and building functions, and put forward a set of integrated design process for the background Yanshou Street to improve the process and participation of planning[62]. Wang Jiangbo et al. (2017) put forward a comprehensive property rights analysis framework including multiple powers of ownership, ownership, ownership, operation, supervision, benefit and disposal, to promote the implementation of the protection and renewal of residential historical blocks[58]. Some scholars introduce the theory of actor network in the planning process, and construct the community participation mechanism in the process of the renewal and revival of historical and cultural blocks[59][60]。

.According to the current research situation of the planning community, the research dimensions of historical and cultural blocks are analyzed (Table 2), we can clearly observe that the research on the material space environment of historical blocks started earlier, and after years of accumulation, a relatively perfect research system has been formed. These studies mainly focus on the architectural style, spatial layout, environmental quality and other aspects of the block, and provide a rich research basis for understanding the material form of the block. However, with the popularity of "people's city" and "people-oriented", the research focus of the planning circle has gradually changed. In recent years, more and more scholars begin to pay attention to the perception, behavior, and social activities of people in historical and cultural blocks. They try to explore the interaction between the block and the residents and the tourists, and the influence of this interaction on the development of the block.

However, it is worth noting that due to the different angles and priorities of different research dimensions, the conclusions drawn and the focus of planning strategies are often different. Some of the strategies have caused difficulties in practical application due to their unclear orientation or lack of practical operability. Some studies from different perspectives have even appeared contradictory suggestions in planning strategies, which makes decision makers face difficulties in making specific plans.

03Table 2.3 Study Dimension Analysis Table of Historical and Cultural District

research perspective	With the help of theory	research technique	Research conclusions focus
The status quo of material space	topologic theory Types theory	Spatial syntax Type analysis	The current situation and planning strategy of street pattern, texture and overall style
Value judgment	Historic Urban Landscape (HUL) Cultural gene theory	Expert scoring method AHP	Construct historical files and value records, and pay attention to the display and utilization of heritage
Commercial development	Sustainable development theory Heritage tourism theory	Expert scoring method Fuzzy comprehensive evaluation method method of comparative analysis	Pay attention to functional zoning, limit commercial space, to ensure the survival of indigenous people social environment

Experience perception	Urban imagery theory Local identity theory Authenticity theory	The SD-scale scoring method Content analysis Cognitive map method	Protect cultural features, protect historical features, and create an identifiable space
Behavioral vitality	Environmental behavioral theory	Multi-source data analysis method Spatial syntax	Improve the accessibility of streets and alleys, enrich the facilities and business forms, and excavate historical resources
Social space	The actor network theory The theory of property rights economics	case analysis method way of qualitative analysis	Establish a decision-making mechanism with multiple participation, establish a small and micro update, and establish an update evaluation mechanism

For this situation, scene theory provides us with a new perspective to study historical and cultural blocks. This theory emphasizes the characteristic understanding of the integrity and dynamics of blocks, and believes that blocks are a complex system interrelated and influenced by multiple elements. The five elements of the scene —— Neighborhood, facilities, people, activities and cultural values, covering multiple dimensions of material space, perception, behavior, space consumption and social network, provide a powerful tool for comprehensively and deeply revealing the status quo of the protection and renewal of historical and cultural blocks. By applying the scene theory, we can more accurately grasp the overall characteristics and development trend of the block, find out the existing problems and contradictions, and put forward targeted planning strategies. At the same time, scene theory can also help coordinate the contradictions and conflicts between different dimensions and realize the harmonious development of blocks. Therefore, this paper will further use the scene theory to deeply study the historical and cultural blocks, in order to provide scientific and effective guidance for the planning work.

2.4 Summary of this chapter

Based on the concept origin, connotation and characteristics of the scene theory and the literature of the current research progress, this chapter summarizes the current research dimensions of the historical and cultural blocks, and the conclusions and

planning strategies of the historical and cultural blocks are different. Therefore, it is suitable to adopt the scene theory, with a more comprehensive and holistic research perspective, to connect the concept of the scene with the architecture and urban planning field through environmental behavior science, and to study the protection and development of urban historical and cultural blocks. At the same time, it briefly expounds the relationship and law between the elements of scenes, laying a foundation for the construction of scene recognition and measurement methods of historical and cultural blocks.

Chapter 3 Scene measurement method and influence factor of historical and cultural blocks

3.1 Scene identification method

3.1.1 Dimension of scene cultural values

The five elements of scene theory can be divided into two parts: objective structure system and subjective cognition system. The objective structure system mainly refers to a series of cultural consumption facilities constructed by human activities, which together form a unique scene. The subjective cognition system focuses on the individual's perception and identification of the cultural values reflected by these scenes. According to the scene theory, different scenes all contain specific cultural value factors, and it is these cultural value factors that attract different social groups. From the perspective of creative consumers, there are three main ways for them to perceive the cultural value of the scene. First, they will have a cultural identity to the scene, that is, the cultural information and values conveyed by the scene. Secondly, people will show their personality and taste by participating in the scene activities. Finally, the scene will also be a reason for their action, which satisfies their decisions and choices made by multiple factors. In order to further analyze and evaluate the attraction relationship between specific scenes and consumers, scene theory proposes a new set of academic grammar system. In this system, the scene cultural values are divided into three main dimensions: Authenticity, Theatricality, and Legitimacy.[4]

The authenticity dimension focuses on the things that the scene reflects and what constitutes the origin and people's cultural identity. It emphasizes that the scene should truly show the cultural connotation and historical background behind it, so that consumers can perceive the existence of "truth". This authenticity is not only reflected in the material form of the scene, but also reflected in the cultural information that it conveys. The theatricality dimension focuses on the self-display function of the scene. It emphasizes that the scene should create a unique atmosphere and style in a symbolic way, so that consumers can feel the existence of "beauty". This drama can be achieved through various means, such as the display of scenes, so as to attract the attention of

consumers and stimulate their emotional resonance. The legitimacy dimension focuses on whether the scene conforms to the requirements of reality and the basis of moral judgment. It emphasizes that the scene should be designed and operated on the premise of conforming to social norms and moral standards, so that consumers can feel the purpose and significance of the scene. This legitimacy not only helps to improve consumers' trust and satisfaction with the scene, but also helps to maintain the long-term development of the scene.

On the basis of the three main dimensions, the scene theory also further selects 15 sub-dimensions with universality. These subdimensions are pairwise scene features that are independent but related to each other. Together, they constitute the identification system of scene cultural values, which helps us to understand and evaluate the cultural values of different scenes more comprehensively.(Table 3.1)

01Table 3.1 Table of cultural value system composition of Scenes

Scene				
Objective structural system		Subjective understanding system		
Combianation of Amenities		Identity, Self-Realization	Appearance, Mutual Self-display	Intertions, Reasons for Actions
space	Living and entertainment facilities	**Authenticity**	**Theatricality**	**Legitimacy**
space environment	cultural facility	Local	Exhibitionism	Traditionalism
climatope	Consumer facilities	Ethnic	Glamour	Charisma
Landscape vegetation		State	Neighborliness	Utilitarianism
		Corporate	Transgression	Egalitarianism
		Rational	Formality	Self-Experession

3.1.2 Case study of block scene creation: Neubau, Vienna, Austria

Neubau, Vienna's seventh district, is located near the city center of Vienna. It is a densely populated urban area with large shopping areas and residential areas, a

population of about 35,000 and an area of about 161 hectares. Neubau means "new building" in German. On the east side of the block is the Museum Quartier (MQ), which brings together independent galleries, artist studios, bookstores, etc. The largest museum in Central Europe, Mumok, is located here. On the south side of the block is the famous Mariahilfer Straße, which stretches for more than 3 kilometers under the shade of trees, showing the fusion of nature and fashion. The Neubau district is one of the youngest, freest and most urbanized areas in Vienna. Neubaugasse, a north-south road in the block, is a one-way street facing Mariahilfer Straße. Neubaugasse is an area in the block with a strong Viennese cultural and artistic atmosphere, showcasing rich cultural diversity and historical heritage.

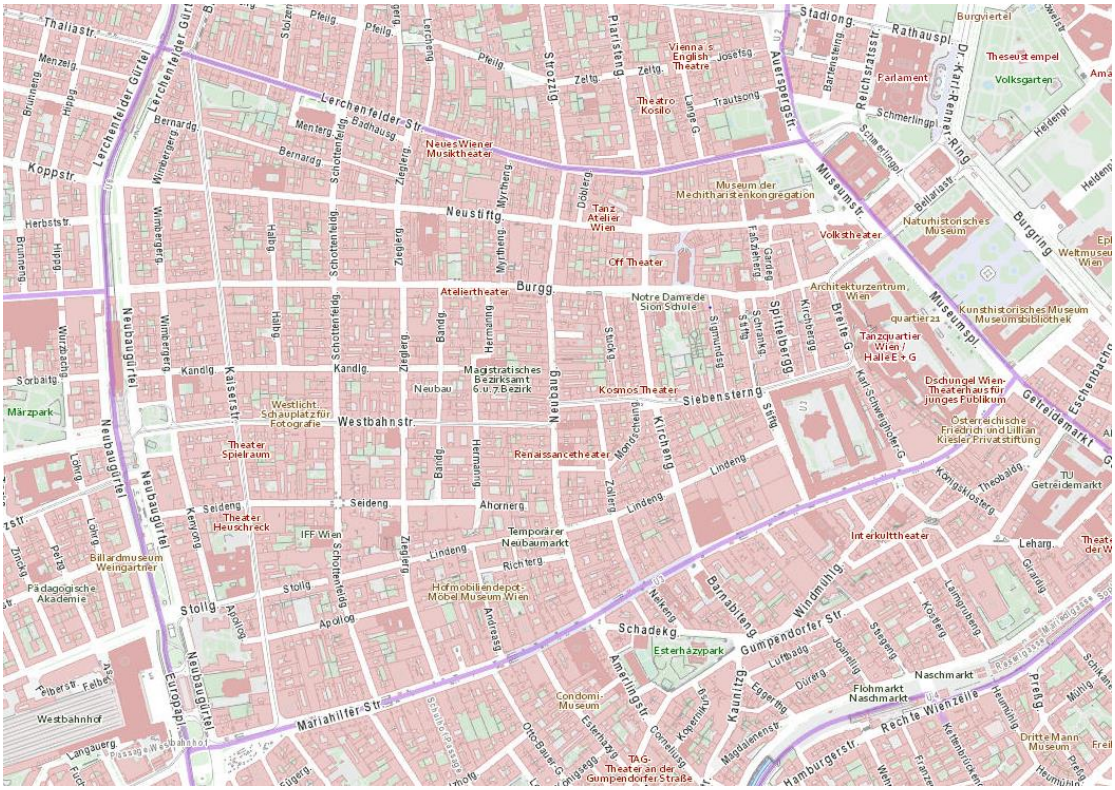


Figure 3.1 Neubau district in Vienna

According to the cultural value dimension of scene theory, analyzing Neubau district from the three perspectives of authenticity, theatricality and legitimacy can provide a deeper understanding of the impact of its attractiveness and cultural value on creative consumers.

Neubaugasse attracts tourists and local residents with its unique historical background and cultural atmosphere. Its authenticity is reflected in the following aspects:

Historical and cultural connotation: The block retains a large number of 19th-

century buildings, especially the buildings on both sides of Neubaugasse have historical value. Around 1770, the first houses in the suburbs of Vienna were built along the street, and the architectural style was mainly houses in the Wilhelminan period and the Vienna Secession period. Today, many 19th-century ancient buildings are preserved on both sides of the street. After many renovations and restorations, they have both classical and modern cultural characteristics. These buildings not only reflect the historical style of Vienna, but also provide locals and tourists with opportunities to connect with the past. This authenticity in material form strengthens the cultural identity of the block.

Figure 3.2 Unique architectural styles on both sides of Neubaugasse

Reflection of local life: Many shops in Neubaugasse show the daily lifestyle of local residents. Second-hand record shops and art galleries can be seen everywhere in the shops on both sides of Neubaugass, which are full of artistic atmosphere. Unlike Mariahilfer Straße, there are many vintage clothing stores and niche designer clothing stores in the alleys, so it also attracts many literary and artistic young people. This close-to-daily experience allows consumers to feel the authenticity and sincerity of the block.

Cultural inheritance and innovation: The art galleries and designer brands here retain traditional craftsmanship while combining modern innovation. Neubaugasse, with its unique commercial characteristics and artistic atmosphere, conveys rich cultural information, allowing consumers to identify with and participate in this cultural ecology.

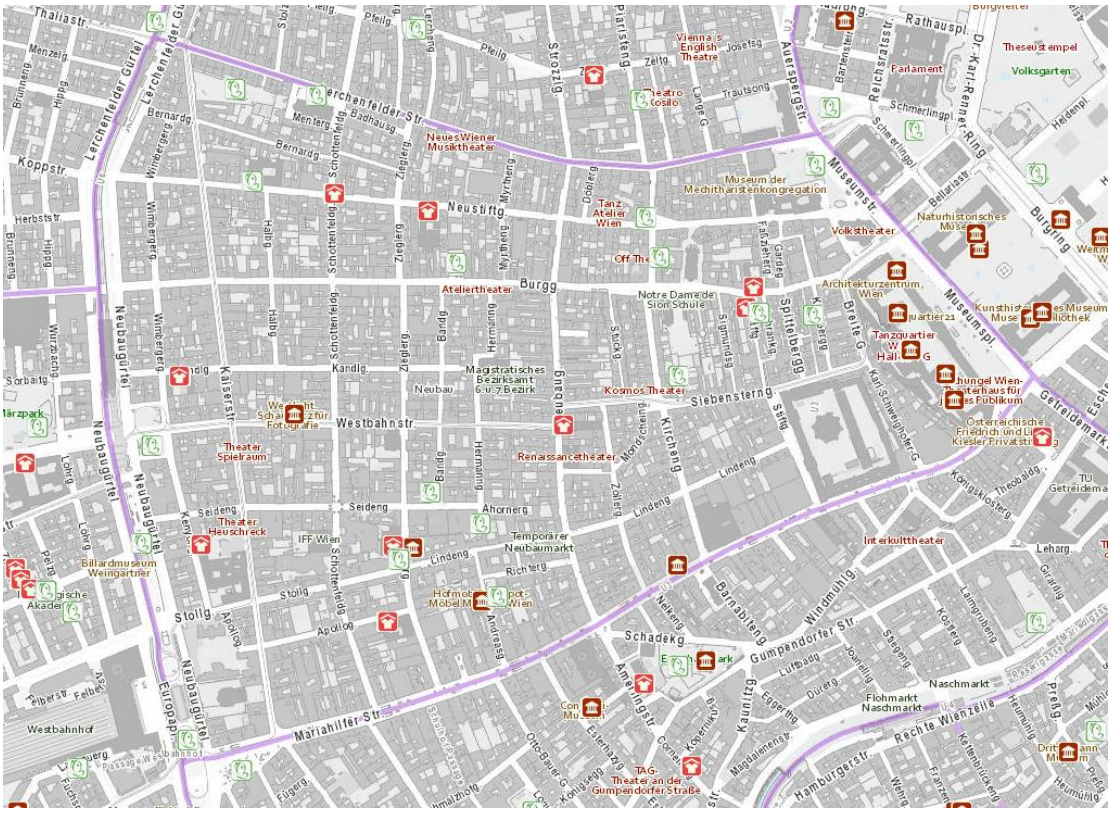


Figure 3.3 Point of interest in the Neubau district

The Neubaugasse shows strong theatricality characteristics in creating a unique atmosphere and attracting emotional resonance from consumers:

Visual and style appeal: The independent design stores, vintage furniture stores and carefully arranged windows in the block convey a unique aesthetic style. This symbolic display attracts creative consumers and meets their needs for self-display. The literary cafes scattered in the alleys are also the favorite shooting locations for photographers. with an immersive experience through unique decoration and service design. This dramatic consumption scene makes people feel the integration of aesthetics and lifestyle.

Figure 3.4 Wonderful window displays of shops

Street art and cultural activities: A large flea market is held twice a year on Neubaugasse. During the event, old second-hand treasures, new bargains and food stalls of various flavors are arranged on both sides of the street. It is one of the largest markets in Austria. The total length is about two kilometers, and merchants around the block also participate. It attracts about 200,000 people every year. The pedestrian market, which has been held since 1983, has about 300 stalls. In addition to various second-hand markets, there are also various cultural activities, including live music, street pleasantries, dance workshops, and recitation concerts that tourists can participate in.

Figure 3.5 The flea market in neubaugasse

The design and operation of the Neubaugasse also conveys good social norms and advanced concepts, showing good legitimacy:

Public space and community participation: The planning of the block focuses on pedestrian areas and community-friendly designs. Vienna's 7th district is an area that pays great attention to pedestrian-friendly communities. The extensive pedestrian zone design on the streets not only provides sufficient public space, but also reduces the impact of motor vehicles. The pedestrian renewal plan of the Neubaugasse district widely adopts feedback from residents and businesses to balance the integration of transportation needs and community living space. This makes the block reasonable and meaningful in terms of social norms.

Cultural diversity and inclusiveness: Neubaugasse welcomes artists, tourists and merchants from all backgrounds and cultures, reflecting cultural openness and social inclusion. The open and rich spatial atmosphere also attracts various social organizations to carry out activities here, such as the Vienna Urban Sketchers Association. They organized sketching activities on Neubaugasse and exchange experiences with each other. It create a sense of participation and interaction, this legitimacy further enhances consumers' trust and satisfaction.

With its profound cultural heritage, unique creative atmosphere and humanistic design, the Neubaugasse block has successfully become an ideal scene in the hearts of creative consumers in Vienna. The block not only attracts a large number of tourists, but also successfully inspires the sense of belonging and enthusiasm of local residents to participate in the community; at the same time, it enhances the vitality of surrounding businesses and becomes an important driving force for Vienna's creative economy. The success of Neubaugasse demonstrates that it is possible to create a model neighborhood that combines historical heritage, contemporary creativity and sustainable development by building scene cultural values.

But it occurs to me that why the Neubau block can form such a block atmosphere, what are the key elements of constructing these scenes, how to learn from the excellent measures of the block, and what strategies can we adopt in the field of planning and architecture to promote the formation of block scenes. Therefore, this study hopes to establish a scene research system, to study the scene improvement of historical and cultural blocks. And try to apply it to the restoration and improvement of China's historical and cultural blocks.

3.1.3 Identification of scene features

At present, in the process of urban planning and design, cultural scenes have become an indispensable and important element. Through the clever use of the material and intangible elements of the city, the city can not only convey the profound cultural significance and ideas, but also promote the social resonance and cultural identity, and provide the residents with rich and colorful cultural experience and cognition. Such a planning concept aims to create a place and landscape with unique cultural characteristics and atmosphere, and then enhance the cultural quality and attraction of the whole city. When discussing cultural scenes, Clark's method of scene knowledge provides valuable theoretical support. He stressed that different combinations of Amenities will produce different judgments in different value dimensions.[2]In order to better apply these theories to practice, this study is committed to translating the scene theory from the sociological perspective in the field of architectural planning, and transforming the understanding of the research object scene in the three dimensions of authenticity, theatricality and legitimacy into the understanding of specific and representative scene types. Such translation work helps us to have a deeper understanding of scene theory and apply it to urban planning practice.

In the scene creation of specific research objects and planning areas, it is particularly important to identify the current scene status quo. Scene feature identification is not only an analysis of a single element, but also an accurate and objective analysis of the multicultural characteristics of the historical and cultural blocks from the perspective of integrity. This includes a comprehensive and in-depth analysis of the five elements of the scenes. Through this analysis, we can more clearly understand the current situation of the historical and cultural district, and provide a strong basis for its future planning and development. In terms of scene type identification, the focus is on in-depth analysis and induction of value elements. By clarifying the scene types and scene functions with regional expression, the cultural characteristics and development direction of the historical and cultural blocks can be more accurately grasped. This not only provides a basis for analyzing the scene problems in historical and cultural blocks, but also provides an important reference for planners to put forward targeted scene strategies.

According to the literature research in Chapter 2, the theoretical circle mainly adopts three methods: induction method, questionnaire method and qualitative method..2(Table 3) Induction is mainly based on the five elements of scene theory, detailed analysis of research objects from five aspects of neighborhood, Amenities, people, activities and values, and finally judge the differences between different scenes based on the researcher's professional knowledge, and then divide different scene types. Induction method can effectively analyze and display the elements within the scene, but its division is based on the author's own subjective judgment, and it is difficult to analyze the differences in values between different spatial elements. The questionnaire rule is developed according to the value dimension of the scene proposed by Clark, in which the semantic difference method (SD method) is a common means. Researchers usually set a series of dimensions and indicators, so that the questionnaire participant can score each indicator according to 1-5 points. However, this method relies on the preset specific indicator semantics for the generation of evaluation scales, so the analysis results are susceptible to be influenced by the indicator dimensions and generation methods. Considering that this paper aims to identify the characteristics of the scenes of historical and cultural blocks, the quantification method of preset standard may not be applicable, because the scene characteristics of historical and cultural blocks are unique and complex, which is difficult to measure with simple preset indicators.

Therefore, qualitative analysis was chosen. This method is based on comments,

interviews and other text materials, and can deeply analyze the characteristics of the scene. Through this method, we can more accurately identify and extract the scene features of historical and cultural blocks, and provide empirical support for subsequent studies. At the same time, qualitative analysis can also help us understand the associations and differences between different scene types, and provide a strong basis for developing targeted improvement strategies.

02Table 3.2 Comparison table of the identification methods of the scenarios

Identify method types	Examples of identification methods	Identification method advantages	Disadvantages of identification methods
induction	Summarize it from the perspective of the five elements of the scene	Judge the scene type from a professional perspective	By the subjective influence of the author himself
questionnaire	SD scale score	Ability to visualize the analysis results in a quantitative way	The indicator dimension and the results
The qualitative method	Comment-on or text-semantic analysis	Strong empirical, unguided comment data can reflect the real feelings	The operation process is cumbersome

Qualitative Research is a research method based on non-digital data such as text, images, and sound, designed to gain a deeper understanding of human behavior and social phenomena. The concept of qualitative research first appeared in Xiong Bingchun's paper "Qualitative Methods: Exploration from the Perspective of social gender". It is mentioned that qualitative research adopts the research demonstration steps of induction, extract key words and concepts from the research data, and summarize them, and draw the principles of explaining phenomena[1]. In qualitative research, researchers focus on the analysis of deep factors such as habits, lifestyles and thinking concepts behind the problems, starting from behavior, phenomena and research problems. The main tools of qualitative research are field investigation, in-depth investigation, and face-to-face interviews. The study subjects of qualitative studies are usually a small number of groups or specific regions, considering the complexity and particularity of the study subjects.

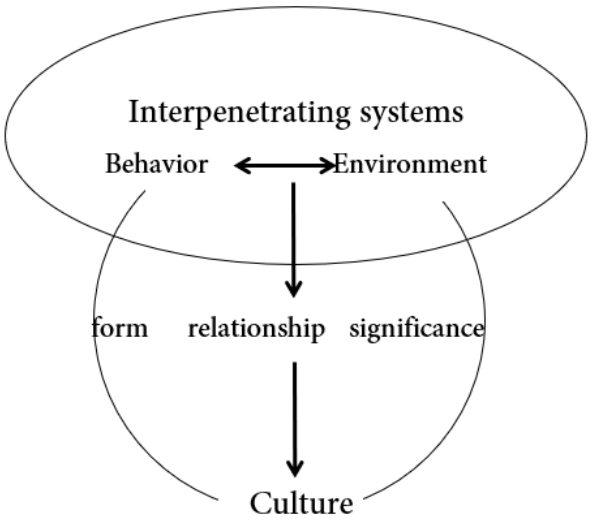
Unlike quantitative studies, qualitative studies emphasize the understanding and interpretation of the research subjects. Therefore, qualitative studies often employ open-

ended, flexible methods to collect and analyze data in order to better capture and describe the complexity and diversity of study subjects. In this study, we use network text data as the data source and Nvivo software as an analysis tool to identify and analyze the cultural values of the scenes. The network text data is spontaneous and large, covering various groups without fixed evaluation framework restrictions, so the evaluation information feedback by users is highly diversified and extensible, and more information can be used for analysis than the traditional evaluation methods. Nvivo As a major tool for qualitative analysis, it is mainly used to analyze network semantics and questionnaire interviews. In social science research, many subjective problems with SPSS quite difficult, Nvivo provides a simple and convenient way to deal with subjective problems, at the same time can establish subjective and objective problems, compared with the way of questionnaire survey with advantage, is conducive to the quantitative and qualitative analysis.

3.2 Measurement method of the scene

3.2.1 Scenario behaviors guided by cultural values

In the study of environment behavior, the relationship between behavior and environment is first examined in a specific socio-cultural context. Therefore, in the research, it is not only necessary to explore the human environmental behavior pattern, but also necessary to conduct in-depth discussion from the cultural level, so as to more comprehensively understand the appearance of human behavior and environment under different social and cultural backgrounds. Li Bin (2008) believes that the theory of environment behavior should be expanded, and put forward a theoretical model of the relationship between people, environment and culture[34]. Different systems of different people and the environment produce different behaviors, so the resulting differences can reflect the relative characteristics of different cultures.

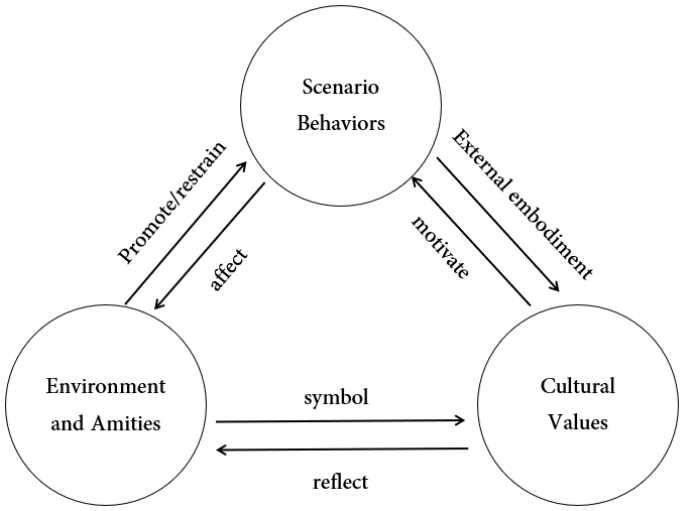


01 Figure 3.6 Expansion of environmental behavior at the cultural level[34]

The scene is a complex and multi-dimensional holistic concept. In this whole, the combination of Amenities not only provides the enjoyment at the material level, but also transmits them to different people through the contained cultural values in the form of abstract symbols, triggering their resonance and experience. Scene theory pays special attention to the transmission and expression of cultural connotation and values. Amenities in a city, whether architecture, landscape or facilities, is the carrier of cultural values. They come together in different ways to form unique scenes, each of which conveys specific cultural messages and values. These values influence people's spatial cognition and behavior patterns through the form of scenes[1]. At the same time, different cultural values and aesthetic interest endow the scene with diverse meaning, experience and emotional resonance. This makes each scene has its own unique charm and attraction, which can trigger people's resonance and emotional response. This resonance and response further shapes the unique cognition and behavior of people in the scene, forming a cycle of interaction. Therefore, the concept of the scene has gone beyond the materialized concept of the simple collection of life and entertainment facilities, and it has become a social, practical and cultural phenomenon. As an externalized symbol of cultural values, scenes influence individuals' behavior choice and spatial experience. Culture and values reflect and shape people's spatial behavior motivation and order through regional scenes[9], has become an important criterion for us to observe and measure.

The increase in scenario behaviors and the increasing number of participants will

make the scenes more real and more convincing. These behaviors not only enrich the content of the scene, but also convey the cultural values carried by the scene through the interaction and experience of the participants. Therefore, observing and analyzing the amount of people's externalized behavior in different scene can be used as a measure of the scene. Extended behavior as a standard scene measure can help us to have a deeper understanding of the nature of the scene and characteristics of the scene.



02 Figure 3.7 Objective structure system, subjective understanding system and behavior relationship

At present, some studies have confirmed the connection between cultural values and behavior. Individual behavior is often formed and displayed in a specific cultural context. Therefore, by observing and analyzing behavior, we can have a glimpse of the influence and embodiment of cultural values. First of all, behavior is the external expression of cultural values. Cultural values are abstract and internal, while behavior is concrete and observable. People's behavior choices, behavior patterns and behavior habits are often formed under the guidance of cultural values. Behavior can be regarded as an external reflection of cultural values, and through behavior, we can understand a person's value orientation in a specific cultural background. Secondly, there is an interaction between behavior and cultural values. Cultural values not only influence behavior, but also are reflected and strengthened in behavior. Individual choice of behavior will be restricted and guided by cultural values, and the results and feedback of behavior will further shape and consolidate cultural values. This interactive relationship creates a cycle of interaction between behavior and cultural values. In addition, behavior also has the function of transmitting and expressing cultural values.

People communicate and interact with others through behavior, convey their values, attitudes and beliefs. Therefore, by observing and analyzing behavior, we can understand different values and common points between different cultures.

In this study, the simulated quality study was used to link specific cultural values with externalizing behaviors to complete the classification of scenes of historical and cultural blocks and the identification of typical behaviors of various scenes.

3.2.2 Scene measurement method according to the externalizing behavior

According to the above, in this study, the scene is connected with externalizing behavior, and then the amount of externalizing behavior is used as the measure of scenes, which can effectively draw scene improvement strategies guiding historical and cultural blocks.

In this study, the research method of "behavior mapping" was used to investigate and count the behaviors of different scenes, and obtained the externalized measurement results of different types of scenes. The Behavior Mapping proposed by Ittelson is a method of directly observing records by tracking people's behavior in a specific space and time. This method was first applied in the late 1960s to study how the physical environment characteristics affect people's behavior, including the level and type of activity. The researchers recorded the location of the subjects, the time of stay at a specific time, and some other features based on the layout plane of the map. There are usually two different analysis methods, including individual-centered behavior analysis and site-centered environment-specific environmental analysis. This study used site-centered behavior notes, site-centered behavior map designed to record the behavioral characteristics of the sample in a specific space, so that the researchers can understand which types of people, at what time, and which activities in different areas, the method is often used by landscape designers, urban designers and behavior scholars.

3.3 Spatial environment elements concerned by the historical and cultural blocks from the perspective of the scene

3.3.1 Elements concerned by protection planning

The protection planning of historical and cultural blocks plays an important role in the field of cultural relics and heritage protection. The core elements it concerns not only reflect the value of material cultural heritage, but also reflect the respect for intangible cultural heritage. In 2012, the Ministry of Housing and Urban-Rural Development and the State Administration of Cultural Heritage jointly issued the Requirements for the Compilation of the Protection Planning of Famous Historical and Cultural Cities, Towns and Villages. The second chapter of the Requirements defines the compilation content of the protection planning of historical and cultural blocks. The main elements concerned in the protection planning include seven dimensions: the overall pattern of the block, road transport situation, traditional street space, architectural heritage, historical environment elements, intangible heritage, and original residents.

Table 3.3 Table of elements of historical and cultural district protection planning concerns

Protection and planning of historical and cultural blocks	
The main dimension	Subdimensional
Block overall pattern	Mountains, rivers, forests and fields, functional relationship, road network texture, and overall morphology
road transport situation	Block location, block traffic
Traditional street space	Spatial scale, spatial form, street view facade, street pavement
architectural heritage	Cultural preservation units, historical buildings, traditional style buildings
Historical environment elements	Ancient trees, ancient towers, ancient Bridges, etc
Intangible heritage	Local customs, production skills, festival ceremonies, performing arts
Native residents	Population composition, social relations, living space, and daily behavior

3.3.2 Elements of concern in literature research

In the second chapter of this paper, the relevant literature of different dimensions of historical and cultural blocks in China and abroad is comprehensively reviewed. Under the general framework of the historical and cultural district protection planning, after screening and integration, this study has formed a series of indicators suitable for the objective spatial environment measure.

The inclusion of these indicators not only further improves and enriches the content of the main dimensions and sub-dimensions, but also provides a set of more comprehensive and detailed evaluation tools, which can help to more accurately evaluate the protection status and development potential of historical and cultural blocks (Table 3.4). Through statistical analysis, road traffic and functional facilities occupy an important position in the spatial evaluation of historical and cultural blocks. These two dimensions are not only related to the accessibility and convenience of the block, but also directly affect the quality of life of the residents and the overall vitality of the block. In terms of the frequency of use of specific indicators, indicators such as street texture, street accessibility, aspect ratio, architectural style, living facilities and commercial facilities are selected the most frequently. These indicators not only reflect the spatial structure and architectural characteristics of the block, but also reflect the living atmosphere and commercial vitality of the block. Through the evaluation of these indicators, we can have a more comprehensive understanding of the spatial environment of the block, and provide a basis for the development of targeted protection strategies.

In addition, other indicators like building combination form, facade coordination degree, building quality are not selected as intuitive and significant as the former, but they also have an important impact on the spatial environment of the block. By paying attention to these indicators, we can further improve the overall quality and cultural connotation of the block. In contrast, indicators such as building use properties and street pavement are used less frequently. This does not mean that they are not important, but possibly because, in some cases, changes in these indicators have a relatively small impact on the overall spatial environment of the block. However, in a specific paper perspective, these indicators may still be important, and need to be analyzed specifically according to the actual situation.

04Table 3.4 Table of Spatial environment elements summarized after the literature study

Elements as summarized by the literature		
The standard layer	Sub-criterion layer	Factor layer
Block overall pattern	functional relationship	——
	Road network texture	Street and lane pattern and texture (6)

	The overall form	Building combination (3)
road transport situation	Block location	——
	Block traffic	Street accessibility (5) Road congestion (3)
Traditional street space	space scale	High width ratio (5)
	Street view facade	Facation coordination (3)
	Street pavement	Street paving (1)
architectural heritage	Cultural protection unit	Building quality (3) architectural style (5) building use properties (1) building material and color (2) building coordination (2) building publicity and display (2)
	historical building	
	Traditional style architecture	
Historical environment elements	Green landscape	Park green space (3) public space (2)
	Identification facilities	Identification and interpretation system (3) Markers (2)
	Ancient trees, ancient Bridges and ancient towers	Ancient tree (3)
Intangible heritage	Local customs	Festival and celebration (3) Cultural activities (4)
	Production skills	Handicraft (4) Business mode (2) Food (3)
	Festival celebration	Folk-custom activities (3)
Native residents	composition of population	Number of aborigines (2)
	human relations in society	Economic level (1) Lifestyle (2)
	daily activities	Residents' participation (2) living atmosphere (3) social relations (1)
	living space	Supporting facilities (5) Convenience of life (2)
Functional facilities	Business experience	Commercial facilities (5) Commercial concentration (2)
	Cultural experience	Museums (3) Former Residence of celebrities (2)

3.3.3 Elements concerned from the perspective of the scene

Under the scene theoretical framework, the influence of space elements and Amenities on the scene is particularly critical. This study further screened and integrated the indicators in Table 3.4 based on the practice needs of conservation renewal in historic blocks. In the screening process, the focus is placed on the material space, the index factor with low use frequency is eliminated, and the difficulty of the index quantitative measure is considered, so as to ensure that the constructed spatial environment measure system is both comprehensive and operable.

After screening and integration, a spatial environment measurement system with 4 large indicators and 11 factors was finally constructed (Table 3.5). These four indicators are respectively spatial pattern, street space, architectural style and functional facilities, which together constitute the basic framework of the spatial environment of historical and cultural blocks. Under each index, several factors are subdivided. These factors are the specific and quantitative expression of the attribution index. At the same time, by referring to other literature and following the principle of operability, the measurement method of each index factor is defined in the table.

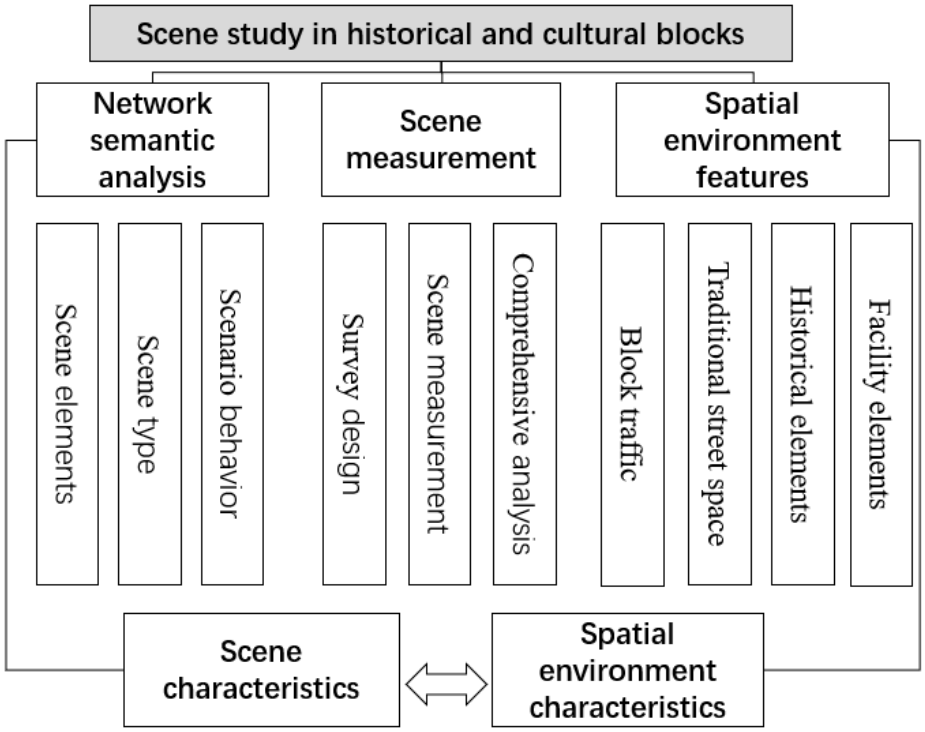
Table 3.5 Table of spatial environment elements of historical and cultural blocks from the perspective of scene theory

Measurement system of spatial environment elements in historical and cultural blocks			
The main dimension	Subdimensional	Indicator factor	measurement methods
Block traffic	accessibility	Choice	Depth map Space syntax
		Integration	Depth map Space syntax
Traditional street space	space scale	depth-width ratio (D/H)	Map data
	Street view facade	Street view elevation coordination degree (%)	Map data combined with field research
Historical elements	architectural heritage	The proportion of historical buildings (%)	Map data combined with field research
	Historical environment elements	Historical environment element density (n / 100m)	Map data combined with field research
Facility elements	Identify guidance facilities	Identification guide facility density (n / 100m)	job-site survey
	Functional	Density of living services	baidu POI

	facilities	facilities (n / 100m)	
		Density of Commercial shop facilities (n / 100m)	baidu POI
		Density of cultural experience facilities (n / 100m)	baidu POI
	Functional richness	Functional facility mix degree	baidu POI

3.4 Summary of this chapter

Through the research and analysis of the existing recognition and measurement methods of scene theory, based on the previous studies in the field of sociology and environmental behavior, a new method of scene measurement is constructed. Firstly, the paper analyzes the semantic analysis of network comments, then identifies the qualitative analysis of the external behavior of each scene type, and links the measure of the scene with the measure of the behavior. Finally, in order to study the relationship and influence performance between the scene and the spatial environment of the historical and cultural blocks, the spatial environment elements of the historical and cultural blocks are selected in the third section of this chapter, and then the measurement methods of the spatial environment elements are defined, so as to lay a foundation for the correlation analysis in the empirical research.



03Figure 3.8 Research Methods for Scenes of Historical and Cultural Block

Chapter 4 Empirical study —— Take the Dongxinanyu historical and cultural block in Luoyang as an example

4.1 Overview of historical and cultural blocks

4.1.1 Study scope

This study selected Dongxinanyu historical and cultural blocks in Luoyang as the research object, the block is located in Luoyang city, the specific scope reference "Luoyang Dongxinanyu historical and cultural blocks protection planning 2018-2035" (hereinafter referred to as the "protection planning") in the scope of blocks, north to Zhongzhou road, south to Mashi street, east to Xin street, west to Jinye road, blocks with a total area of 113 hectares.(Figure 4.1) The Dongxinanyu historical and cultural block is the only area with relatively intact traditional features of Luoyang city. Historical and cultural blocks of the whole embodies its unique historical value, blocks preserved a large number of ancient buildings in the Ming and Qing dynasties, these buildings not only has the characteristics of the central plains dwellings, also embodies the essence of the ancient urban planning and architectural art, shows the typical architectural style of the Ming and Qing dynasties. Here preserved the central plains residential characteristics of the Ming and Qing ancient buildings, with beautiful gate, temple, wenfeng tower, drum tower and other cultural relics, formed a larger tourist scenic spots, is also the most characteristic of old Luoyang comprehensive historical and cultural blocks. In terms of business form, the block contains intangible heritage, time-honored brands, Luoyang specialties, handicrafts, food and snacks, calligraphy and painting, cultural and creative products, has become a must for tourists to visit Luoyang.

01Figure 4.1 Research Scope of the Dongxinanyu Historical and Cultural Block

4.1.2 History of the block

The Dongxinanyu historical and cultural block has a long history and profound deposits. According to the Historical sites of Henan Zhi in the Yuan Dynasty, the ancient city of Luoyang in the Jin Dynasty was built in the first year of the Jin Zhengda (1224 AD), which was built on the Dongcheng ruins of the eastern capital of the Sui and Tang Dynasties. The Dongxinanyu historical and cultural block has gone through many historical periods of Jin, Yuan, Ming, Qing and the Republic of China, and has been more than 800 years. The cultural relics resources in the historical and cultural street are relatively rich, and the historical relics on the ground are relatively complete. There are 32 immovable cultural relics sites, and 81 historical buildings.(graph 4).2

(1) Feudal period from the Jin Dynasty to the Qing Dynasty (1224-1911)

After the Northern Song Dynasty, Luoyang's position in Chinese history gradually declined due to the transfer of political and military center. In the Jin Dynasty, Luoyang was the central capital, and another new city was built on the ruins of Luoyang City in the Sui and Tang Dynasties. After completion, it served as the capital of the Jin Dynasty, called the Zhongjing Jinchang Palace. Today, there are still the ruins of the city wall in the Jin and Yuan Dynasties. In the Yuan, Ming and Qing dynasties, this block was the seat of Henan Prefecture and Luoyang County. Henan Prefecture ruled one continent and twelve counties in the northwest region, so it left many sites with representative

local power institutions, such as Henan Fu Confucian Temple, Drum Tower, and Henan Fu Chenghuang Temple.

02Figure 4.2 Distribution Map of Cultural Protection Units in the Dongxinanyu Historical and Cultural Block

(2) The Republic of China period (1912-1948)

In the first year of the Republic of China (1912), the central government of the Republic of China abolished the establishment of the Qing Dynasty. Under the central government, provinces, roads and counties were set up, and the Luoyang Henan government system was abolished, and Luoyang was initially established as a county. From the beginning of the Republic of China to the 20 years of the Republic of China (1931), Luoyang beacon everywhere. From 1938 to 1942, during the cooperation between the Kuomintang and the Communist Party, the Central Committee of the Communist Party of China negotiated with the office of the Eighth Route Army in Luoyang in the block, which became an important revolutionary site today. In 1944, during the War of Resistance against Japanese Aggression, in order to resist the Japanese occupation of Luoyang, many Bridges on the official road outside the city gate were blown up, and many buildings in the block were seriously damaged.

(3) The early days of the founding of New China (1949-1978)

After the founding of new China, Luoyang was listed as a key construction city during the "First Five Year Plan" and vigorously developed industrial production. On

this basis, in 1956, according to the first master planning of Luoyang Jiandong City Master Plan, according to the reality of the old city, Luoyang adopted the planning idea of "avoiding the old and building the new", forming the "Luoyang mode" of historical urban development. According to the overall plan, the old city of Luoyang, as the sub-center of the city, mainly undertakes the functions of residence, commerce and light industry, while the political functions of the old city are gradually moved out. This place also successfully continued the urban texture of the past, which was preserved under the impact of economy and industry. However, the original public Spaces in the block, such as temples and ancestral temples, were replaced by small light industrial factories and schools during this period.

(4) The period of reform and opening up to now (1978 to now)

After the reform and opening up, there have been several rounds of protection planning for the old city, including the Protection Plan of the Old City in 1988 and the Interim Measures for the Protection and Management of the Luoyang Old City in 2000, both of which adopted relatively static protection methods for the old city. In 2006, the block was listed as the historical and cultural block of Luoyang city. Since then, several rounds of planning have focused on the protection of the historical heritage and the urban renewal of the block. In 2012, the Detailed Construction Planning of 2012-2020 in this area was compiled. However, due to the deviation in the implementation of the planning, the radical measures of "overall demolition" were taken for some plots in the block, leading to the disappearance of the original street and lane structure.

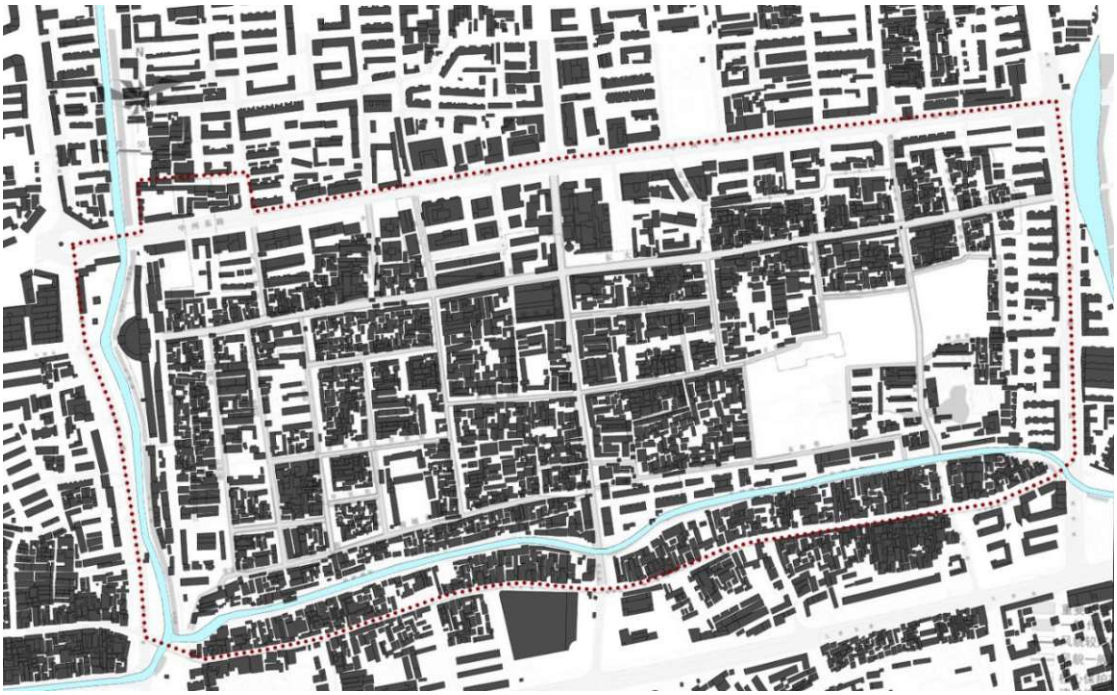
4.1.3 Block current status

(1) Spatial texture

Inside the Dongxinanyu historical and cultural block, the streets pattern is well preserved, has the typical northern western characteristics, retained the jinyuan Luoyang city cross street main road network skeleton, formed the formation of "fishbone" overall street layout. The ancient city streets are known as "nine streets 18 alleys 72 hutongs" legend, the ancient "nine" has a meaning of “most”, meaning the many streets and lanes. The distance between the branch networks is 200 meters, and the building is divided into basic module groups.

After multiple dynasties, the building style in the block is more diverse, the existing dwellings are mainly distributed in the south of the main street, built in the qing dynasty. The courtyard is typical northern building courtyard shape, contains many

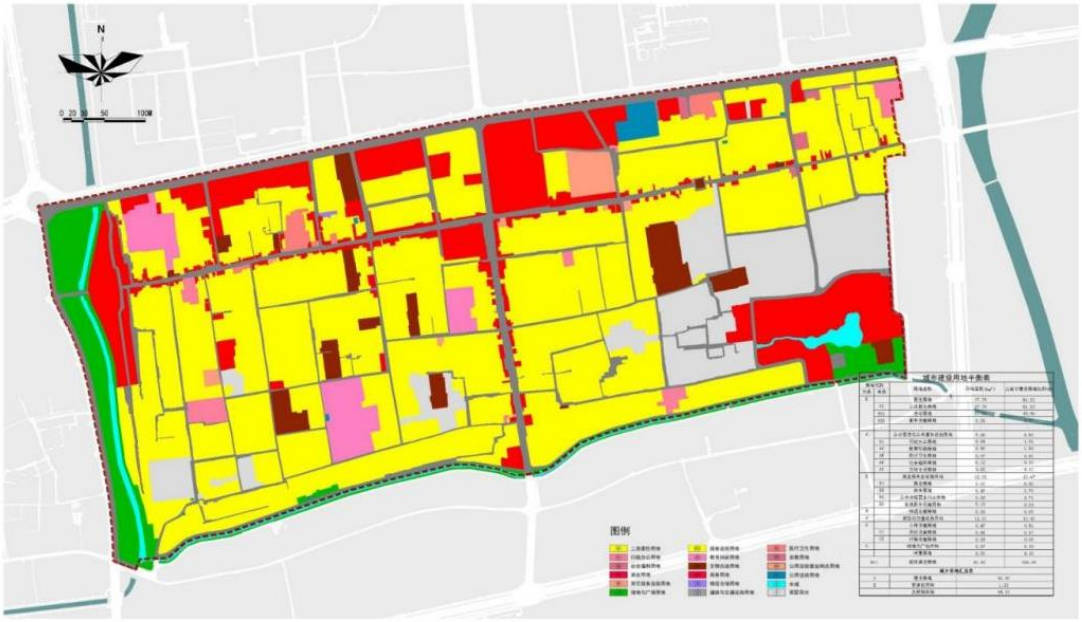
historian courtyard such as Yu compound, Lin compound, Shi compound, covers an area of mostly around 2000 square meters. The construction time of the buildings on the north side of the main street was generally from 1978 to 2000, mostly with a large scale. The average area of single building is about 2000 square meters, which was obviously different from the scale and texture of residential houses in the Qing Dynasty.



03Figure 4.3 texture of the Dongxinanyu historical and Cultural Block

(2) Land use

The current land use type of the Dongxinanyu historical and cultural blocks is mainly residential land. The residential land accounts for 51.3% of the total area of the block land, becoming the absolute subject of the block land use; the second is the land for commercial service facilities, accounting for 35.5%, and the land for public service facilities is relatively few.



04 Figure 4.4 Current Land Use of Dongxinanyu Historical and Cultural Block

According to the Protection Planning, we can have a clearer understanding of the layout of all kinds of land in the block. First of all, the current commercial land of the block is mainly arranged along both sides of Dongda Street and Nanda Street, and on both sides of Liulin South Street. The residential land in the block is concentrated in the southwest part of the block, and the north side of the West Street is mainly the mixed commercial and residential land, and there are large areas of undeveloped idle land. The public service facilities in the block are mainly distributed in the southwest, and there are several schools and hospitals. Cultural relics and historic sites scattered in the block.

(3) Future development

As early as 2018, the Luoyang Ancient City Historical and Cultural Block was rated as the first batch of historical and cultural blocks in Henan Province, and the Luoyang municipal government approved the latest "Protection Plan". In 2019, the Detailed Construction Planning of the Dongxinanyu Historical and Cultural Block(2019-2035) (hereinafter referred to as the Detailed Planning) was approved by the Municipal Bureau of Natural Resources and Planning. The Detailed Planning aims to show the core values of the historical and cultural block. On the basis of the original overall layout structure and combined with the future development direction of the old city, it divides four areas: traditional commerce, traditional courtyard, exhibition and site culture.

In recent years, Luoyang has advocated the construction of a youth-friendly city,

promoting the upgrading of consumption formats, creating a new scene of quality consumption, promoting the development of cultural tourism, and innovating a new scene of immersive experience. The concept of "scene" has become more and more an important starting point for Luoyang historical district and cultural heritage in the new era. In February 2021, the Dongxinanyu historical and cultural block was rated as the first pilot pedestrian street in Henan Province, and passed the acceptance of the expert group of the Provincial Department of Commerce in October. In October 2021, it was rated as the National Night Culture and tourism consumption Cluster area, and in November 2021, it was rated as the first batch of tourism and leisure blocks in Henan Province.

4.2 Scene feature identification of Dongxinanyu historical and cultural blocks

4.2.1 Identification of scene elements in historical and cultural blocks

Since the scene theory views urban space from the perspective of consumers, This article chose the important domestic consumer website —— Dianping as a data resource. We searched the Dongxinanyu historical and cultural blocks with the key words"old city" and "Bajiao Golden Street" on the website. Then use web data collecting tool called Octopus Collector to collect 1716 comments from June 2023 to December 2023. For the overall comment data ,this study use Nvivo qualitative analysis software, Filtering a series word like "one" "one point" "Afternoon" “ many ", After merging the synonyms, derive the top 50 valid terms, Count their word frequency and overall proportion to generate the network comment word cloud of historical and cultural blocks.(graph 4).5

05 Figure 4.5 Online Comments keywords on the Dongxinanyu Historical and Cultural Block

This paper uses the qualitative analysis method to code the network comment text phrases according to the five elements proposed by the scene theory, that is, the network comment text phrases according to neighborhood, Amenities, people, activity and cultural values. This process covers three stages of open coding, axial coding and selective coding, aiming to extract common features among network reviews and group them to form an in-depth understanding of the scene elements of historical and cultural blocks.

Open coding refers to the search for conceptual genera and extracting keywords for naming through original text materials such as interviews or comments. In this stage, the conceptual genera related to the five elements of the scene are searched through the multi-word frequency phrases in the previous step, and the keywords are extracted for naming. For example, identify keywords such as "ancient city", "environment", "the street " related to neighborhood, "photo", "performance"," experience " related to activity," wall "," building "," shop " related to Amenities," crowd, "tourists", "resident", "photographer" related to people, "lively"," history "and" culture " related to cultural values.

Axial coding refers to the selection and construction of major genera, and summarizes the conceptual categories in open coding as in major genera. In this step, the conceptual categories extracted from open coding are summarized and collated

according to the main categories of five scene elements. For example, the keywords related to neighborhood are summarized to the main category of "space".

Selective coding refers to the refinement of a core genus from all named conceptual genera. In this stage, the conceptual categories and genera already named in the spindle coding stage were further integrated and condensed to extract a core category, namely the scene elements of the historical and cultural blocks. This core genus is a summary and sublimation of all previous coding work, forming a comprehensive and in-depth understanding framework. Through the above workflow, the network comments of the Dongxinanyu historical and cultural blocks are condensed and integrated into five scene elements, and finally form a multi-level tree structure of scene elements identification in the historical blocks.(Table 4.1)

01Table 4.1 Scene element Identification table in historical and cultural blocks in the east and west

Selective coding	Axial coding	Open coding	Reference point example
Scene elements	Neighborhood	Ancient City (764) Night Market (217) Scenic Spot (177) Night View (168) Light (101) Luoyang City (97) Environment (87) Street (182) Landscape (90) Lantern (54) Traffic (40) Block (32) Parking (31)	It is the second time to come here, a few years ago when it is not very hot, is the ordinary street with some ancient city of Luoyang style, but this time to feel very bright, friends must come to experience the night scene of the street.
	Amenities	LijingGate (368) Drum Tower (271) Attractions (190) Building (179) City Wall (136) Tower (118) Shop (196) Booth (48) Ancient Buildings (41) Site (41) Museum (36) homestay (32)	It is an ancient block with a long history and a unique traditional culture. The center of Cross Street is the most prosperous commercial area in the old city, surrounded by many ancient buildings, temples, ancestral temples, etc., full of strong historical atmosphere.
	People	Tourist (143) Friends (51) Photographer (49) Boss (35) Local resident (33)	In a corner of the ancient city, I came across a local resident. He warmly introduced me to the history and culture of the ancient city, and also showed me around his home.

	activity	Snacks (691) take photos (485) experience (237) ancient costume (129) stroll (196) travel (203) performance (100) walk (96) visit (97) specialty (50) line up (44) pass by (36) service (30)	Standing on the city gate, you can overlook the street scene of Luoyang city, the museum can see and learn all kinds of historical knowledge of Luoyang city is great, the night scene is really beautiful, put on the ancient costume to take photos on the city tower, shopping here is really not too comfortable.
	Cultural values	History (262), Lively (219), Culture (207), worth (131), through (101), local (148), Fireworks (62), bustling (53), antique (49), rich (48), commercial (46), famous (39) Sui and Tang (37), Spectacular (34)	I have been to the ancient streets in many cities. Luoyang is relatively good for development and construction. After the epidemic, I really like this bustling feeling, just like attending a temple fair.

4.2.2 Identification of scene features of historical and cultural blocks

According to the elements of the scene of three coding results, screening 525 network comments that can reflect cultural values, for these comments, repeat keyword frequency statistics and coding, finally identify the scene type of historical and cultural blocks, respectively for life continuation scene, street consumption scene and cultural experience scene. According to the cultural values in the axial coding, the externalized behavior in this type of scene is identified and reflected in the reference point examples.(Table 4.2)

02Table 4.2 Identification Table of scene types and characteristics in the east and west south corner

Selective coding	Axial coding	Open coding	Externalized behavior	Reference point example
life continuation scene	Living atmosphere	Life (17) Quiet (5)	Sitting idle (5) Small talk (12)	It retains the style of the ancient street and the strong life atmosphere, and the small streets and alleys have residents sit in small groups chatting, bringing a sense of approachable reality.

	mode of life	Comfort (5) Local conditions and practices (9)	Chat (6) Chess / playing cards (3)	To see the local customs and customs, the door inside and outside is the epitome of the previous life, the drum tower heard two old 80 grandma holding dinner at the door chat, watching the local residents playing chess, as if also brought me into the local life.
Market consumption scene	experience consumption	Hustle and Bustle (62) Down-to-earth (35)	Tasting (40) Purchase (20)	One by one full of fireworks gas old shop, walking in the street, the stream of people, a variety of Luoyang characteristic snacks to attract people to stop and taste.
	content of consumption	Rich (48) Commercialized (46)	Purchase (29)	With a wide range of goods, people dizzying, walk in this street, you can buy Luoyang specialty and cultural creation. This is simply an immersive consumption.
	Historical display	Historical charm (89) Antique taste (49)	Visit / viewing (29) Photo (28) Introduce (6)	The buildings from the Ming and Qing dynasties, looking very beautiful, were photographed outside. He also visited many cultural attractions with a long history, such as Luoyi Ancient City Museum, Luoyang Ancient Art Museum and so on. It ave me a deeper understanding of the history of the ancient city.
Cultural experience scene	culture and art	Culture (76) Crossing (45) Famous (39)	Photo (22)	It is very interesting to walk around. Compared with other ancient streets in ancient cities, cultural atmosphere is relatively heavy. Many of the four shops, autumn pear paste, medicine shops, wearing Hanfu are also very beautiful.

In the scene of life continuation, the cultural values are mainly reflected in the words of "local customs", "life atmosphere", "quiet", "comfortable" and other words. These words reflect the feelings of residents and tourists about the daily life of the historical and cultural district. Through further analysis, 36 reference points were identified, which showed the externalized behaviors in the life continuation scene, mainly including "small talk", "idle sitting" and various leisure and entertainment activities. These activities show the scene of local residents gathering, communicating and enjoying life in the street space, and reflect the vitality of the historical district and the continuation of life.

In the scene of market consumption, the cultural values are reflected through the words such as "Hustle and Bustle", "enrichment", " Commercialized " and " abundant ". These words reveal a prosperous business atmosphere and a diverse consumer experience within the neighborhood. Through the analysis of 191 reference points, the externalized behavior under the market consumption scene is identified, mainly including "tasting" and "buying". Tourists and residents stop in front of the shops in the streets, taste authentic special snacks, and buy handicrafts and specialties. These behaviors constitute the main content of the market consumption scene, and show the unique charm of the historical and cultural blocks as a place for consumption n.

In the cultural experience scene, the cultural values are expressed as "historical charm", "antique", "culture", "through", "famous" and other words. These words highlight the historical and cultural heritage of the block and the pursuit of cultural experience by tourists. Through in-depth analysis of 179 reference points, we identified externalizing behaviors in cultural experience scenes, mainly including "visiting", "photographing" and "explaining". Tourists visit historical buildings in the block, learn about history and culture, take photos and punch in, and even participate in immersive experience activities, such as wearing Hanfu tour. These behaviors together constitute an important part of the cultural experience scene, enabling tourists to deeply feel the cultural charm of the historical district.

4.3 Field survey of multiple types of scenes in the Dongxinanyu historical and cultural blocks

4.3.1 Research design

In order to understand the characteristics of people and behavior in the Dongxinanyu historical and cultural block, we did some pre-surveys and conducted real-time view of Baidu thermal map. This study selected from 14:00 to 16:00 on weekdays to do field research. The representativeness of the selection of research period and the principle of research implementation to obtain limited but reliable data.

First of all, the flow of people on weekdays is more diverse, including local residents and tourists, while the rest day tourists occupy the vast majority of the population composition. On weekdays, the daily activities of local residents provide a rich local life scene for the survey. Tourists, however, mainly visit and spend during the day, and their behavior patterns are different from that of local residents, so the externalized behaviors in different scenes are easier to identify and measure. At the same time, the changes of people flow and behavior on weekdays have strong regularity, which can represent the daily state and functional positioning of the block to a certain extent.

After observation, 14:00-16:00 as the weekday afternoon period, this time period, many tourists and local residents will choose to visit, leisure or shopping in the historical and cultural blocks. This time period avoids the busyness in the morning and the evening rush hour, and people have more leisure time to explore the history, culture and characteristics of the block. Therefore, this time period can better reflect the general activities of the historical and cultural blocks on woeekdays. At the same time, since this time period is in the middle of a day, the behaviors of tourists and residents is more natural and relaxed, less affected by time restrictions or special activities. This enables investigators to more truly observe and analyze people's behavior patterns in historical and cultural blocks, including their tour routes, stay time, and interaction methods. From the perspective of objective environmental conditions, the lighting conditions in this period of the historical and cultural blocks are usually better, which is beneficial for the investigators to observe and record the details of the blocks and human behavior. Whether it is the architectural style of the block, the historical relics, or the behavior of tourists and residents, it can be more accurately captured and described in this time period.

4.3.2 Division of study units

As a more abstract concept, the realization and expression of the scene need to be implemented on the entity space. In the historical and cultural blocks, the streets and

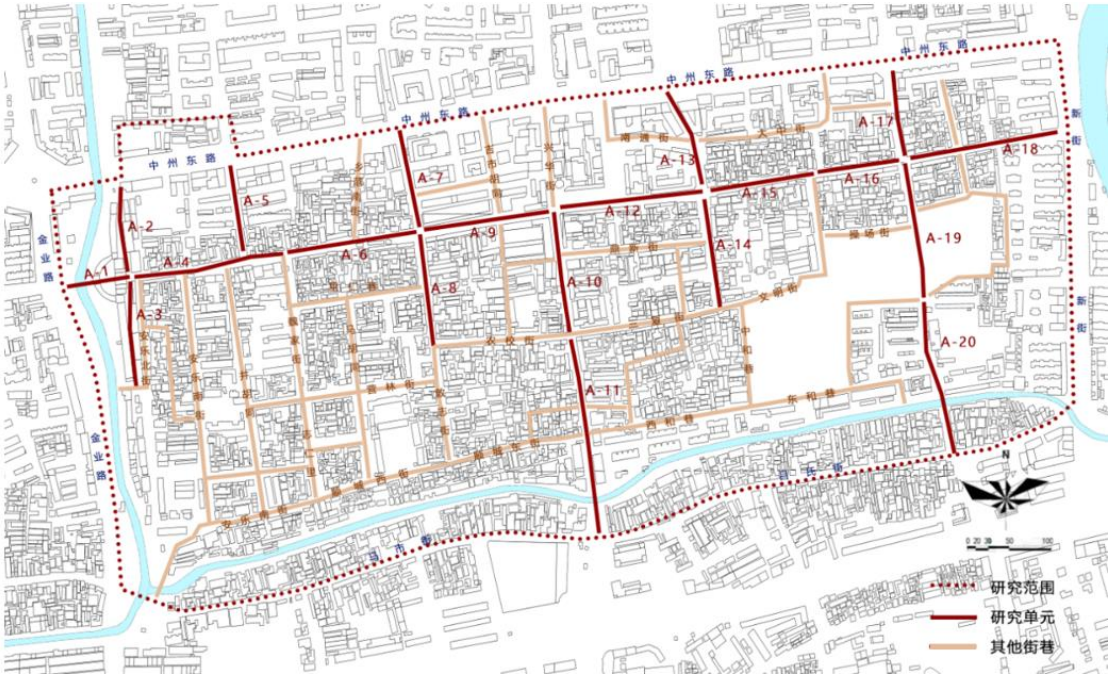
alleys, as an important public space, carry the multiple functions of people's consumption activities, social interaction and cultural experience. Therefore, the study of the main streets in the historical and cultural blocks were used as the basic research unit. In scene theory, the combination of Amenities (life and entertainment facilities) contains values, which has become a consensus in the academic community. Therefore, this study uses points of interest (POI) data and nuclear density analysis to divide the research units of streets and alleys. To ensure the smooth progress of the study, several key principles were followed in the process of unit division. First of all, each research unit covers the selected spatial environment elements indicators, including historical buildings, historical environment elements, and various facilities, so as to ensure the comprehensiveness and accuracy of the research. Secondly, the intersection is taken as the breakpoint for unit division, which helps to more clearly define the spatial scope and characteristics of different streets and lanes. Meanwhile, to maintain the reasonable length and coherence of the study unit, too short line segments were merged in the study to ensure that each unit was within the range of 100-300 m to facilitate data collection and analysis.

Finally, 20 research units are divided into the historical and cultural street area, and the name number and basic information statistics of each unit are shown in Table 4.3.

03Table 4.3 Division of study Units

Street name	number	length /m	Street name	number	length /m	Street name	number	length /m
West gate street	A-1	124	Old city history and culture ancient street-north section	A-2	149	Old city history and culture ancient street-south section	A-3	266
West Street-Lijingmen Weijia Street section	A-4	243	Yyong South Street	A-5	151	West Street-Weijia Street, Xianguo City Street section	A-6	229
Market street	A-7	163	Xianguoshi street	A-8	152	West Street-Xianguoshi Street,	A-9	217

						South Street section		
South Street-West Street, Sanfu Street section	A-10	175	South Street-Sanfu Street Tiekuo Lane section	A-11	215	East Street-South Street Yulu Street	A-12	245
Justice street	A-13	173	Yulu street	A-14	158	East Street-Yulu Street, Dazhong Street section	A-15	185
East Street-Mingxin Street, Dajie Street	A-16	145	Minzhu street	A-17	144	East Street-Mingxin Street section	A-18	159
Ming new street	A-19	202	Liu Lin street	A-20	216	/	/	/



06 Figure 4.7 Division of Scene Research Unit

The survey was conducted from January 5,2024 to February 1,2024. In the survey, the method of behavior mapping was adopted to track and count the behavior of the people in the historical and cultural block during the period of 14:00 to 16:00 weekdays. The means of on-site statistics and photo shooting assistance were used to count the

people who stopped in the unit. Take this point as the final analysis basis. Count the externalized behaviors according to the occurrence amount of life continuation scene, market consumption scene and cultural experience scene, and then mark them on the map as a measure of various scenes.

The following is a brief description of the research process and the data collation process of scene externalization behavior according to a unit selected in the block:

Take unit A-15 as an example, the unit is located on the west side of the Drum Tower in the Dongxinanyu historical and cultural block. The streets have been well preserved and the features is coordinated and unified. The shops on both sides are mostly cultural and creative shops and handicraft shops, as well as time-honored brands. These shops not only provide rich shopping choices for tourists, but also show the profound historical and cultural heritage of the block. There are still a large number of residential houses on the south side of the streets and lanes that have not been converted into commercial functions, which makes the scene externalization behavior in the street space more rich and diverse. During the investigation, the amount of scene externalization behavior in unit A-15 was recorded in detail, and the relevant data are shown in Table 4.4.

In terms of the externalization behavior of the life continuation scene, although the street space is slightly narrow, the amount of chatting and sitting behavior is considerable. This is mainly due to the fact that the shops on both sides are mostly opened by local residents, some of which operate raw goods, so the communication between shopkeepers and residents is quite frequent. In addition, due to space restrictions, recreational activities such as playing chess and cards that require large space were not observed here.

In terms of the externalized behavior of the market consumption scene, the amount of purchasing behavior is much greater than that of tasting behavior. This is closely related to the business format of the A-15 unit. There are few food shops in this unit, mainly handicraft and cultural and creative shops. Tourists are more shopping experience than tasting food.

In terms of the externalization of cultural experience scenes, photo behavior is particularly prominent. The Drum Tower, as a beautiful photo background, has attracted many tourists to stop and punch in. In addition, a small number of visits and explanatory behaviors were also observed. Tourists not only stop to watch the Drum Tower, but also visit the former residence on the south side of the street. The explanation behavior

includes the tour guide's explanation to the tour group and the local residents' spontaneous introduction to the tourists. These explanations not only enrich the cultural experience of the tourists, but also promote the dissemination and communication of the local culture.

According to the identification and statistical process of the above scene externalization behavior, the scene was measured for the other selected units in the block, and the summarized survey results are obtained.

04Table 4.4 Statistical Table of unit A-15

Externating behavior	The amount of behavior	Related photo sample (in part)	Scene measurement	Scene type
sit at leisure	24		55	Life continues the scene
chat	31			
Play chess / cards	0	——		
purchase	109		136	Market consumption scene
taste	27			
take a picture	152		200	Cultural experience scene

Visit / watch	33	
explain	15	

4.3.3 Test results of multi-type scenes

After summarizing the survey results, a total of 7653 people were counted in each research unit, among which the total number of life continuation scene externalization behavior was 1029, the total number of market consumption scene externalization behavior was 4336, and the total number of cultural experience scene externalization behavior was 2288. The following respectively analyze three scenes from the perspective of behavior, behavior density and spatial distribution characteristics.

(1) Life continuation scene

In the life continuation scene, the average number of units in each unit was 51.45, there are 8 units higher than the mean, the average density of each unit was 0.30, there are 8 units higher than the mean. These units are mainly distributed in the historical and cultural streets (A-2) near Lijingmen, the streets (A-5 and A-8) in the middle section of West Street, and the middle and last section (A-18) of East Street. According to the observation, the historical and cultural street are wide, the trees on both sides are dense, and the two sides are mainly coffee shops and antique shops, mostly on the ground floor of the building, and the upstairs is for residents, and the overall flow of people is small. Therefore, the residents of the streets in this area mainly have to rest and talk with each other under the trees in the street space. In the north-south streets and alleys connected to the West Street, the functions on both sides are mainly residential functions, and the commercial interface is not continuous, including the entrance and exit of the community, small street green space, etc. The overall flow of people is small and tourists are rare. Therefore, in addition to rest and conversation, there are also some leisure and entertainment activities, such as playing cards, playing chess, watching

onlookers and so on. The buildings on both sides of East Street are relatively old, and the height and width of the streets are relatively small. On both sides of the streets are a series of daily service facilities such as haircuts and convenience stores. After observation, the main route of tourists is to reach the ancient city of Luoyi through Minzhu Street, so there are fewer tourists at the end of East Street. Therefore, the behavior of residents in this area is mainly talking with each other, rest, leisure and entertainment behavior. (A-9, A-12) near Cross Street is the lowest point of the measurement of life continuation scene in each unit. This area is seriously commercialized, the flow of people is large, and the external behavior of life continuation scene observed in the survey is less.

05Table 4.5 Life continuation Scene measurement Table

Each unit life continues the scene measurement										
number	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10
number of people	42	66	64	55	56	74	42	74	28	40
Density (person / m)	0.34	0.44	0.24	0.23	0.37	0.32	0.26	0.49	0.13	0.23
number	A-11	A-12	A-13	A-14	A-15	A-16	A-17	A-18	A-19	A-20
number of people	76	32	58	35	55	44	25	62	42	60
Density (person / m)	0.35	0.13	0.34	0.22	0.30	0.30	0.17	0.38	0.21	0.28

07Figure 4.8 Measurement of the life continuation scene

08Figure 4.9 life continuation scene in the block

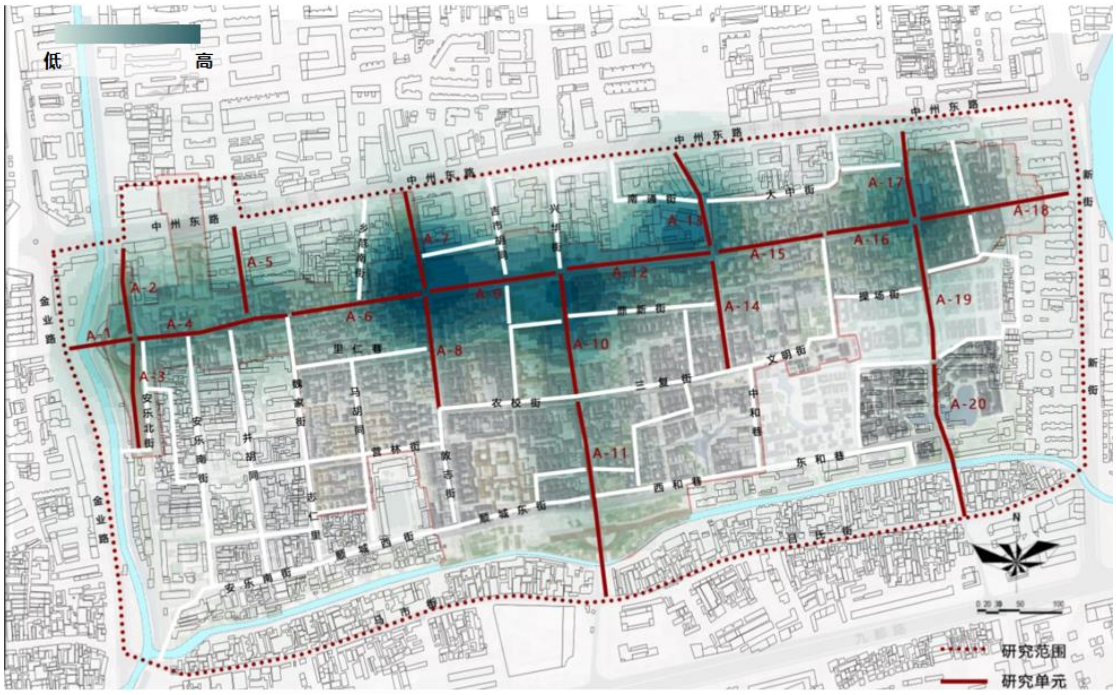
(2) Market consumption scene

In the market consumption scene, the average number of behaviors in each unit is 216.8,there are 9 units higher than the mean, the average density of the behavior of each unit is 1.16, there are 11 units higher than the mean. These units are mainly distributed in the West Street (A-4, A-6), Cross Street area (A-9, A-12, A-13) and Minzhu Street (A-17). According to the observation, the commercial interface on both sides of the West Street is relatively continuous, the types of commercial shops are relatively rich,

the food, specialty and handicraft shops are evenly distributed, the shop facade is small, and most of the shops have commercial layout. Therefore, the market consumer behaviors observed in this area are mainly for the taste of local characteristic snacks and the purchase of characteristic products. The central area of Cross Street is Bajiao Jin Street at the intersection of West Street, East Street and South Street. It has a wide street width, a large flow of people, a continuous surrounding commercial interface, and a high degree of commercialization. However, there are fewer types of surrounding stores, with a large commercial volume, and similar stores are relatively concentrated. Therefore, the observed market consumer behaviors in this area are mainly purchase. The construction quality on both sides of Minzhu Street is good. On both sides of the streets, there are various local flavor snacks, corn soup, oil tea, Hu spicy soup, etc. The flag of the shop is flying, creating a good consumption atmosphere. Therefore, the market consumer behavior observed in this area is mainly tasting. Yulu Street (A-14) is the lowest measurement point of the market consumption scene in each unit. The functions of both sides of the street are mainly residential, and the streets and lanes are relatively narrow. A small number of commercial facilities are home stay, and the market consumption behavior observed in the investigation is less.

06Table 4.6 Market of Market consumption consumption

Each unit market consumption scene measurement										
number	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10
number of people	107	185	126	299	176	319	268	144	388	289
Density (person / m)	0.86	1.24	0.47	1.23	1.17	1.39	1.64	0.95	1.79	1.65
number	A-11	A-12	A-13	A-14	A-15	A-16	A-17	A-18	A-19	A-20
number of people	294	394	307	20	136	153	235	137	175	184
Density (person / m)	1.37	1.61	1.77	0.13	0.74	1.06	1.63	0.86	0.87	0.85



09Figure 4.10 Measurement of market consumption scene

010Figure 4. market consumption scene

(3) Cultural experience scene

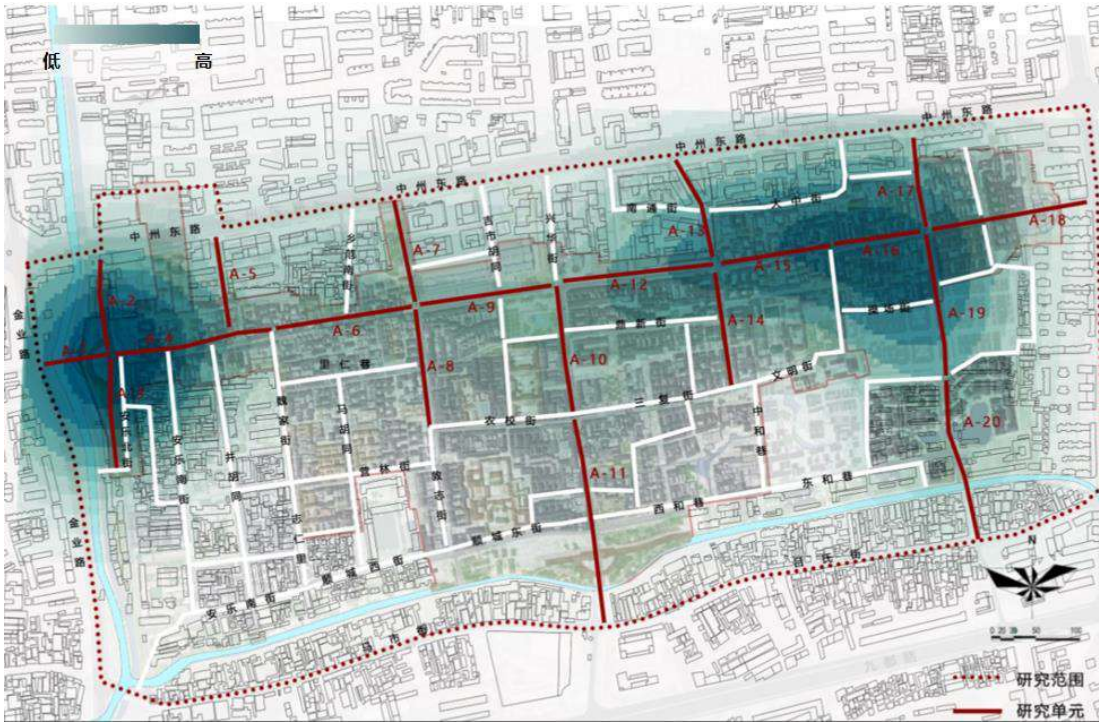
In the cultural experience scene, the average number of units in each unit was 114.4, there are 8 units higher than the mean, the average density of each unit was 0.64, and there are 7 units higher than the mean.(Table 4) These units are mainly distributed in Ximen Street (A-1), Drum Tower area of East Street (A-15, A-16, A-18) and Luoyi Ancient City area (A-19 and A-20).

07Table 4.7 Cultural Experience Scene Measurement Table

Cultural experience scene measurement of each unit										
number	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10

number of people	188	66	98	103	65	145	56	55	62	91
Density (person / m)	1.52	0.44	0.37	0.42	0.43	0.63	0.34	0.36	0.29	0.52
number	A-11	A-12	A-13	A-14	A-15	A-16	A-17	A-18	A-19	A-20
number of people	101	151	75	97	200	171	114	143	132	175
Density (person / m)	0.47	0.62	0.43	0.61	1.08	1.18	0.79	0.90	0.65	0.81

According to the observation, there are municipal cultural relics protection units and a number of museums and art galleries in Ximen Street, with a strong historical and cultural atmosphere. There are many architectural explanations and historical science display boards, with a beautiful and pleasant landscape. Therefore, the cultural experience behaviors observed in this area are mainly for visiting museums, punching in and taking photos of historical attractions, and a small number of explanations and discussions. The streets and alleys on both sides of the Drum Tower area of East Street have a pleasant spatial scale. The facade of the building has the charm of the ancient city, and the collection of a series of cultural and creative handicraft shops and Hanfu experience shops, and the Drum Tower of a municipal historical and cultural preservation unit as the landscape background. Therefore, the cultural experience behaviors observed in this area are mainly for viewing and taking photos. The buildings on both sides of the streets and alleys in the ancient city of Luoyi are mainly newly built antique buildings, whose architectural functions include B & B, Hanfu experience and art shops. At the same time, the streets and alleys in this area connect with historical environmental elements such as ancient Bridges, ancient trees and ancient towers, providing rich landscape elements. Therefore, the cultural experience behaviors observed in this area are mainly for taking photos. (A-7), Xianguoshi street (A-8) is lowest measurement of the scene, the two streets is the main life street, although street distribution with traditional style architecture, but the lack of related introduction and signs. At the same time, the streets on both sides lack of cultural experience facilities, less visitors go to the two streets.



011Figure 4.12 measurement of Cultural experience scene

012Figure 4.13 Cultural experience scene in the block

4.3.4 Summary of block scene features

According to the measurement results of the three scenes of life continuation, market consumption and cultural experience, the 20 units studied in the historical and cultural block, and the summary results of the final clustering are shown in Table 4.8

08Table 4.8 Cluster analysis table of each unit scene

Clustering members						
Case number	number	Life continuation scene	Market consumption scene	Cultural experience scene	clustering	distance
1	A-1	0.34	0.86	1.52	1	.419
2	A-2	0.44	1.24	0.44	4	.128
3	A-3	0.24	0.47	0.37	3	.213
4	A-4	0.23	1.23	0.42	4	.146
5	A-5	0.37	1.17	0.43	4	.064
6	A-6	0.32	1.39	0.63	4	.264
7	A-7	0.26	1.64	0.34	2	.167
8	A-8	0.49	0.95	0.36	4	.295
9	A-9	0.13	1.79	0.29	2	.250
10	A-10	0.23	1.65	0.52	2	.043
11	A-11	0.35	1.37	0.47	4	.195
12	A-12	0.13	1.61	0.62	2	.160
13	A-13	0.34	1.77	0.43	2	.169
14	A-14	0.22	0.13	0.61	3	.213
15	A-15	0.30	0.74	1.08	1	.141
16	A-16	0.30	1.06	1.18	1	.200
17	A-17	0.17	1.63	0.79	2	.300
18	A-18	0.38	0.86	0.90	1	.208
19	A-19	0.21	0.87	0.65	1	.374
20	A-20	0.28	0.85	0.81	1	.291

According to the cluster analysis results of SPSS, 20 units were divided into 4 classes with iterations of 4, including 6 in cluster 1,6 for cluster 2,2 in cluster 3, and 6 in cluster 4 with no missing units.(Table 4.9)

09Table 4.9 Statistical table of cluster results

Number of cases in each cluster					
1	2	3	4	valid	of no avail
6.000	6.000	2.000	6.000	20.000	0.000

For the 6 units in cluster 1, the measurement value of the cultural experience scene is significantly higher than that of the other units, and the measurement value of the market consumption scene is smaller than that of the cultural experience scene. Meanwhile, the measurement value of the life continuation scene is concentrated near the mean value. This data feature shows that such units have achieved initial success in

the construction of cultural experience scenes, which achieve a better integration of the market consumption scene and the cultural experience scene, giving tourists a rich tour experience. At the same time, such units also retain a certain amount of residents' life and communication space.(Table 4.10)

010Table 4.10 Statistics of the results of cluster 1

clustering 1						
Case number	number	Life continues the scene	Market consumption scene	Cultural experience scene	clustering	description
1	A-1	0.34	0.86	1.52	1	Cultural experience is dominant
15	A-15	0.30	0.74	1.08	1	
16	A-16	0.30	1.06	1.18	1	
18	A-18	0.38	0.86	0.90	1	
19	A-19	0.21	0.87	0.65	1	
20	A-20	0.28	0.85	0.81	1	

For the 6 units in cluster 2, the measurement value of the market consumption scene is significantly higher than the other units, and the measure value of the life continuation scene is significantly lower than the mean. This characteristic shows that the market consumption scene of such units is more prominent, which has a certain encroachment and influence on the daily living space of residents. At the same time, the measurement values of the cultural experience scenes of such units are concentrated near the average value, indicating that there is still some room for improvement in the shaping of the cultural experience scenes.(Table 4.11)

011Table 4.11 Statistics of Cluster 2 Results

clustering 2						
Case number	number	Life continues the scene	Market consumption scene	Cultural experience scene	clustering	description
7	A-7	0.26	1.64	0.34	2	Market consumption is dominant
9	A-9	0.13	1.79	0.29	2	
10	A-10	0.23	1.65	0.52	2	
12	A-12	0.13	1.61	0.62	2	
13	A-13	0.34	1.77	0.43	2	
17	A-17	0.17	1.63	0.79	2	

For the two units in cluster 3, the measurement value of the market consumption

scene is significantly lower than that of other units, the measurement value of the life continuation scene and cultural experience scene is also lower than the overall average, and the difference between the measurement values of the three scenes is small, showing a relatively balanced but low overall low situation. This feature shows that there are obvious deficiencies in the scene construction of such units, and the street space loses its vitality, and it needs to be transformed and improved urgently.(Table 4.12)

012Table 4.12 Statistics of Cluster 3 Results

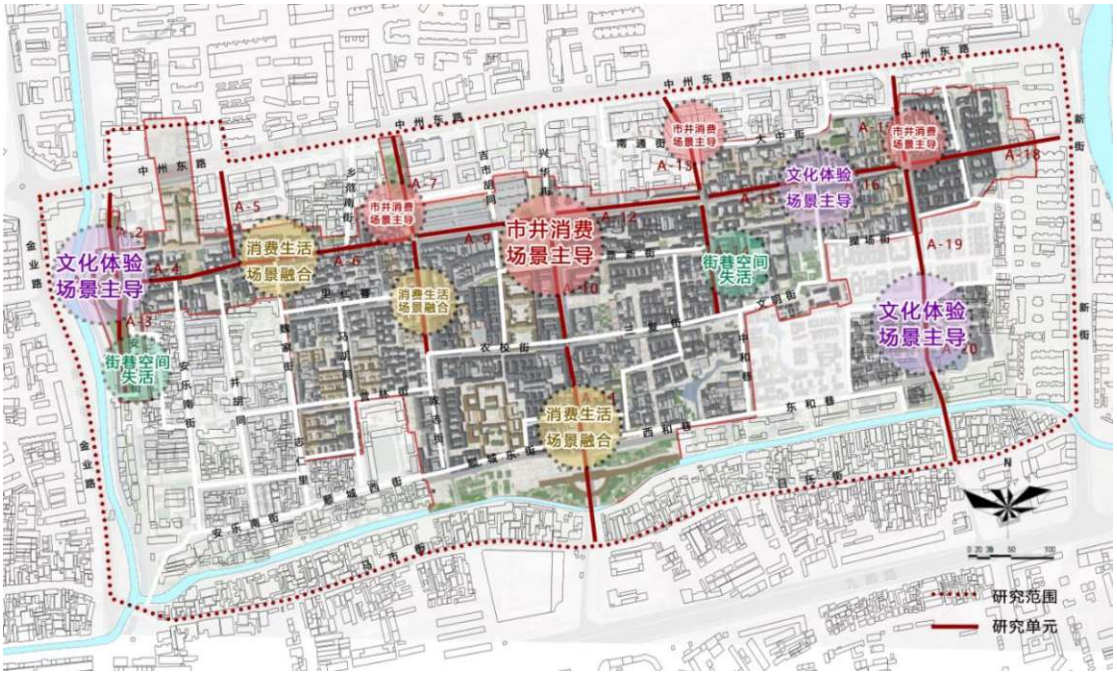
clustering 3						
Case number	number	Life continues the scene	Market consumption scene	Cultural experience scene	clustering	description
3	A-3	0.24	0.47	0.37	3	Lane space inactivation
14	A-14	0.22	0.13	0.61	3	

For the 6 units in cluster 4, the measurement value of the market consumption scene is close to the mean value and significantly higher than the life continuation scene and the cultural experience scene. At the same time, the measurement value of the life continuation scene is significantly higher than the mean, and the measurement value of the cultural experience scene is lower than the mean. This characteristic shows that the living space retention of such units is more perfect than that of other units, and the consumption behavior of residents and tourists has injected new vitality into the street space, and has become an important place for residents 'daily life and tourists' consumption experience. But the display of culture of these units needs to be further improved. (Table 4.13)

013Table 4.13 Statistics of Cluster 4 Results

clustering 4						
Case number	number	Life continues the scene	Market consumption scene	Cultural experience scene	clustering	description
2	A-2	0.44	1.24	0.44	4	Integration of life continuation and market consumption
4	A-4	0.23	1.23	0.42	4	
5	A-5	0.37	1.17	0.43	4	
6	A-6	0.32	1.39	0.63	4	
8	A-8	0.49	0.95	0.36	4	

11	A-11	0.35	1.37	0.47	4



013Figure 4.14 Summary of scene characteristics of Dongxiannayu historical and cultural blocks

4.4 Collection of spatial environment elements in the Dongxinanyu historical and cultural blocks

4.4.1 Data source

In the measurement of spatial environmental element data of historical and cultural blocks, this paper comprehensively uses multi-channel sources such as POI, road network, building outline, building function, points of historical elements and field research pictures, and integrates the corresponding data and coordinates on the ArcGIS analysis platform.

(1) Building data and traffic data

The data comes from the open source map platform (Open Street Map) and Baidu Map, which obtain the road network and building contour data within the research scope. The basic attributes of the road network data include road name, road center line, length, width and other attribute values. Building contour data includes building name, building contour line, building height and other attribute values. By importing the data into the

GIS platform for processing, combined with the field survey results, the data is modified, and finally a relatively complete block plane data is obtained.

(2) Historical environmental element data

The historical elements in the historical and cultural blocks in the block includes all kinds of cultural relics protection units at all levels, historical buildings, traditional style buildings, famous trees and ancient trees, etc. The basic data comes from the Protection Planning, which assists the field investigation and the visual expression of drawings, so as to facilitate further statistics of the quantity and density of historical elements within each unit.

(3) Functional format POI data

Data come from baidu map open platform, point data's basic attributes include the name, facilities, facilities, facilities type. After screening, this study divided the Baidu POI data into three categories: life service facilities, commercial store facilities, cultural experience facilities.

4.4.2 Quantitative measurement of spatial environment elements in historical and cultural blocks

This section detailed measure the 11 specific index factor from four dimensions: the block traffic conditions, traditional street space layout, the retention of historical elements and the perfection of functional facilities. Through the quantitative analysis of these index factors, the existing problems and shortcomings in the current block environment can be more clearly recognized. These problems not only involve the overall spatial layout and traffic organization of the block, but also are related to the protection and utilization of historical and cultural heritage, as well as the configuration of various facilities needed by residents in daily life.

(1) Block traffic

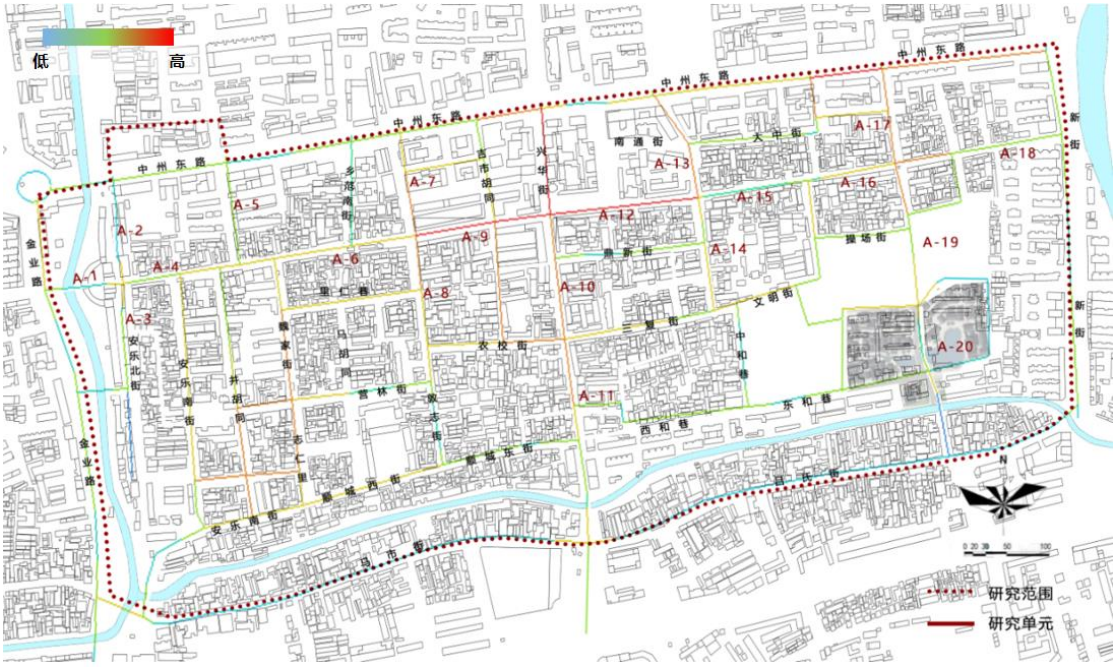
This measure of block traffic accessibility index is based on spatial syntax theory, and aims to quantitatively analyze the spatial characteristics of streets inside and around historical blocks by selecting two core indicators of Integration and Choice. First, the road network data is extracted from the data source, then carefully processed in the CAD software to ensure no guillotine, and then the output is a DXF file format suitable for spatial syntactic analysis. Then, the data were imported into the Depthmap10.0 software, and the analysis radius r was set to be 2 to simulate the road network situation

under the walking mode, so as to calculate the Integration and Choice of each unit. Below is a descriptive analysis of the statistical results.

014Table 4.14 Statistical table of the results of local integration analysis

Local integration of each unit										
number	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10
Integration degree	1.16	1.10	1.69	2.05	1.83	2.31	2.43	2.47	2.95	2.66
number	A-11	A-12	A-13	A-14	A-15	A-16	A-17	A-18	A-19	A-20
Integration degree	2.41	2.94	2.61	2.12	1.38	2.24	2.62	2.22	2.19	1.73

Integration, or degree of integration, is a core concept in spatial syntactic theory that is used to describe the degree of agglomeration or dispersion between one unit and other units in a spatial system. It reflects the centrality of the unit in the entire spatial system and the ability to attract traffic flow. The higher the integration of the road, the higher the accessibility, the more likely to attract the crowd of people. In this study, integration was further subdivided into global and local integration. Considering that the main transportation mode of people in the historical and cultural blocks of the research object is walking, the local integration degree is adopted to measure the agglomeration of each unit. Through this method, the structural characteristics of the street space inside the historical district can be revealed more accurately.



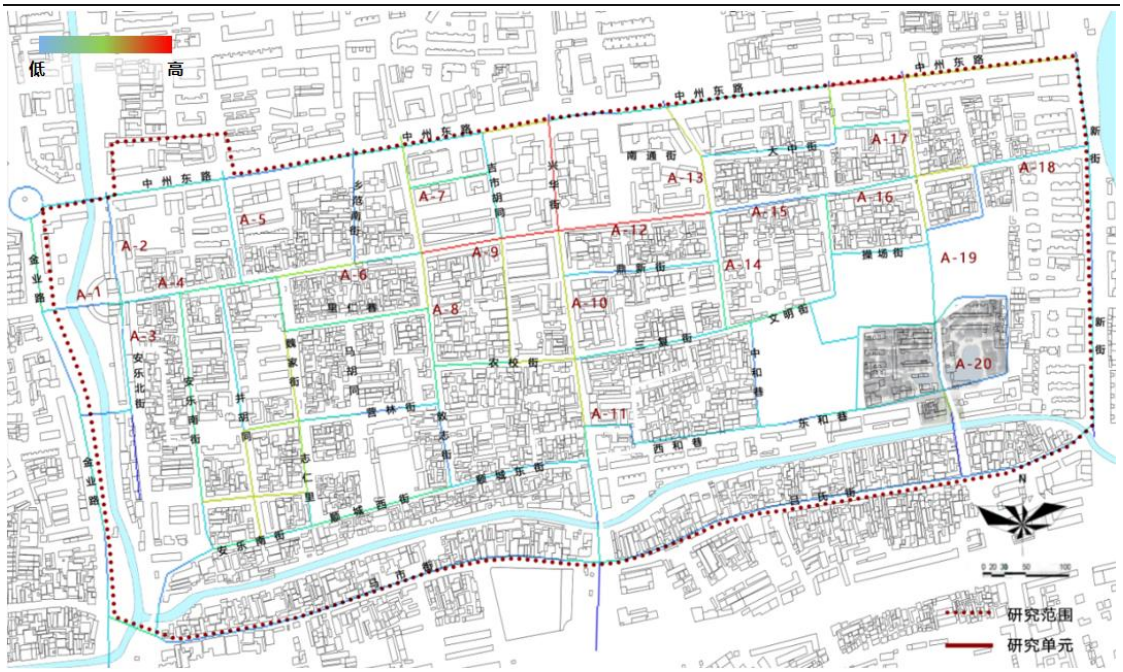
014 Figure 4. Integration of road network in the block

The results show that streets with integration is mainly distributed in the center of the block, with unit A-9 and A-12 integration of the highest, west street, east street and xinghua street intersection location of the highest integration. At the same time cross street surrounding distribution has a series of shopping center, food, night market, entertainment facilities, etc., to the surrounding residents and tourists have certain attraction, Crowds tend to gather here. Minzhu Street (A-17) and Mingxin Street (A-19) also have A relatively high integration degree. Folk customs, Hanfu experience, museums and other facilities are mainly distributed around the two roads, which are also the main roads leading to the ancient city of Luoyi, which is easy to attract people. The units with low integration are A-1, A-2, A-3 and A-15. As Ximen Street and the streets of the entrance area on the west side of the block, more people will choose to go directly to the block center through the West Street, and the possibility of staying and gathering here is low.

015Table 4.15 Statistical table of the results of the local selection degree analysis

Local Choice of each unit										
number	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10
selectivity	14	6	12	27	20	37	44.5	40	76	54
number	A-11	A-12	A-13	A-14	A-15	A-16	A-17	A-18	A-19	A-20
selectivity	41	90	50	25	12	24	50.5	25.5	25	17

The degree of choice (Choice) is a crucial concept in spatial syntax theory that deeply analyzes the frequency of the shortest topological distance role played by an element in a spatial system when connecting two nodes. In short, the degree of choice measures the advantage of a space unit as the shortest travel path, which directly reflects the potential possibility of the space to be traveled. In a busy urban environment, a space with a high degree of choice often means that the frequency of people crossing is also higher, so the degree of choice is also vividly called the degree of travel.



015 Figure 4.16 Choice of road network in block

Luoyang old city historic district unique "fish bone type" road network texture makes the cross street overall choice higher than other streets, connected with cross street alleys, series with living, culture, business functions. The passability people chose the cross street is higher than other streets. The selection of Market South Street (A-7), Zhengyi Street (A-13) and Minzhu Street (A-17) is relatively high in the alleys. Market South Street is the alley familiar to old Luoyang people in the past, and the flow of local residents is high. Zhengyi Street and Minzhu Street, as the main channels in the southeast corner of Middle Road, assume the function of more traffic and the high selection degree. LiuLin south street (A-20) although also through the connection of the main road, its choice degree relative to other streets and low, the main function of the connection of ancient city, the surrounding road network clearly present internal unicom loop, through the purpose of the crowd is clear, cannot meet the demand of diverse purpose people through, also is not the main local residents through the streets.

(2) Traditional street and lane space

The space of traditional streets and alleys is mainly composed of multiple elements, including the horizontal interface formed by the building enclosure, the vertical building interface on both sides, street nodes and some facilities, etc., providing the space experience of streets and lanes.

In this paper, the aspect ratio (D / H) and the elevation coordination degree are selected to reflect the spatial characteristics of the traditional streets in the block. The

high aspect ratio can reflect the spatial scale of streets and alleys, which has an important influence on people's perception, and is mainly reflected through visual and psychological aspects. Under the proportion of different entity height and width, it will bring different visual experience to people. Street facades also play an important role in the street space. They are not only the appearance of the building, but also an important part of people's space feeling. The design of the streetscape facade directly affects the perception and experience of pedestrians in the urban environment. The street facade of the old city has been renovated for several rounds, which needs to be integrated with the surrounding buildings and achieve the coordination effect of recognition, and is an important indicator to bring people the feeling of space in the street space.

016Table 4.16 Statistical table of the aspect ratio of streets and lanes

The aspect ratio statistics of each unit street									
number	width D/m	altitude H/m	depth - width ratio D/H	Real picture	number	width D/m	altitude H/m	depth - width ratio D/H	Real picture
A-1	10	24	0.42		A-11	12	10	1.20	
A-2	7	18.5	0.38		A-12	10	10	1.00	
A-3	7	14.5	0.48		A-13	9	34	0.26	
A-4	7	10	0.70		A-14	4	10	0.40	
A-5	5	14	0.36		A-15	6	10	0.60	

A-6	6	10	0.60		A-16	7	10	0.70	
A-7	9	25	0.36		A-17	9	10	0.90	
A-8	5	10	0.50		A-18	7	10	0.70	
A-9	10	10	1.00		A-19	9	14.5	0.62	
A-10	14	12	1.17		A-20	8	12	0.67	

Previous studies have generally believed that a relatively pleasant spatial experience is created when the street aspect ratio is maintained within a range of 1 to 2. If the aspect ratio of the street is lower than 1, then the street space will often appear more depressed, giving people a sense of cramped and narrow. On the contrary, when the street aspect ratio exceeds 2, the street space may appear too empty and lack enough encirclement and intimacy. However, as a special urban spatial form, the historical and cultural blocks often have unique characteristics of their road network texture and spatial scale. In this study, the overall aspect ratio values of the blocks examined were distributed in the range of 0.2 to 1.2, with an average aspect ratio is about 0.65(Table 4). This range of values is significantly different from the ideal aspect ratio found in conventional studies, which reflects the uniqueness of historical and cultural blocks on the spatial scale. It is worth noting that the size of the aspect ratio has an important impact on the space feeling of traditional streets. With the increase of the height-width ratio, the traditional atmosphere and characteristics of the street space will often

gradually weaken.

According to statistics, the height and width ratio of the three units A-10, A-11 and A-12 is greater than 1.0, which is distributed at the intersection of the cross street in the center of the block. This area has a large flow of people, and the width is significantly greater than other streets. Among them, South Street sets up flower beds and mobile food stalls in the middle of the road to reshape the spatial scale of the street. The unit with the lowest aspect ratio is Zhengyi Street (A-13). The width of the street is close to the average, but after increasing the building height of both sides to meet the residential needs, the aspect ratio is only 0.26. The spatial scale of the streets and alleys around the Drum Tower of West Street and East Street is close to the average. At the same time, these streets are also the streets and alleys with relatively intact traditional style and the spatial scale more in line with the historical and traditional atmosphere.

In the study of this paper, the quantitative index of facade coordination is the proportion of the total length of the building to the total length of the research unit. First of all, the paper refers to the overall situation of the building in the Protection Planning, marking the buildings in the picture that are not compatible with the overall style. In order to ensure the authenticity and accuracy of the research, the detailed statistics and analysis of the uncoordinated facade were carried out based on the basis of the field research. Through this series of work, the proportion of the uncoordinated facade in the whole can be quantified. As a key indicator to measure the coordination of street facade in this study, its value directly reflects the unity and coordination of street facade in the unit. Specifically, the higher the value is, the more unified the street view facade in the unit is in terms of color, material, cleanliness and plaque shop moves, and the stronger the coordination is.(Table 4).17

According to the statistical results, there are 8 units with a coordination degree above 90%. Among them, Ximenmen Street and the Old Town Historical and Cultural Street serve as the main streets in Lijingmen Area, and the overall environment is clean and the building material is relatively unified. At the same time, there are many calligraphy and painting art shops distributed on both sides of the streets and lanes, and the plaque shop recruitment are more beautiful and coordinated. The street facade of East Street (A-15, A-16) retains the old wooden doors and Windows and eaves, and the facade decoration, such as lanterns, is also relatively unified, and the overall coordination degree is high. The buildings on both sides of Mingxin Street (A-19) and Liulin South Street (A-20) have undergone unified maintenance and even demolition

and construction of antique buildings. Although the coordination degree of street facade is high, the artificial traces are serious, and the building facade has become the setting for Hanfu to take photos. The building facade coordination degree of the unit (A-9 and A-12) at the intersection of Cross Street is the lowest in the research unit. There are significant differences in the building age and the building style, the building height is not coordinated, and the shop recruit lacks unified management and design, giving people a chaotic visual feeling.

017Table 4.17 Statistical table of street View facade coordination

Coordination of the street view facade of each unit building

number	Coordination degree	The facade photo	number	Coordination degree	The facade photo
A-1	100%		A-11	76.3%	
A-2	93.3%		A-12	64.9%	
A-3	100%		A-13	77.7%	
A-4	84.6%		A-14	85.9%	
A-5	81.8%		A-15	94%	

Continuation table 4.17

number	Coordination degree	The facade photo	number	Coordination degree	The facade photo
A-6	88.9%		A-16	90.1%	

A-7	85.3%		A-17	83.9%	
A-8	87.1%		A-18	89.7%	
A-9	52.8%		A-19	93.9%	
A-10	87.4%		A-20	100%	

(3) Historical elements

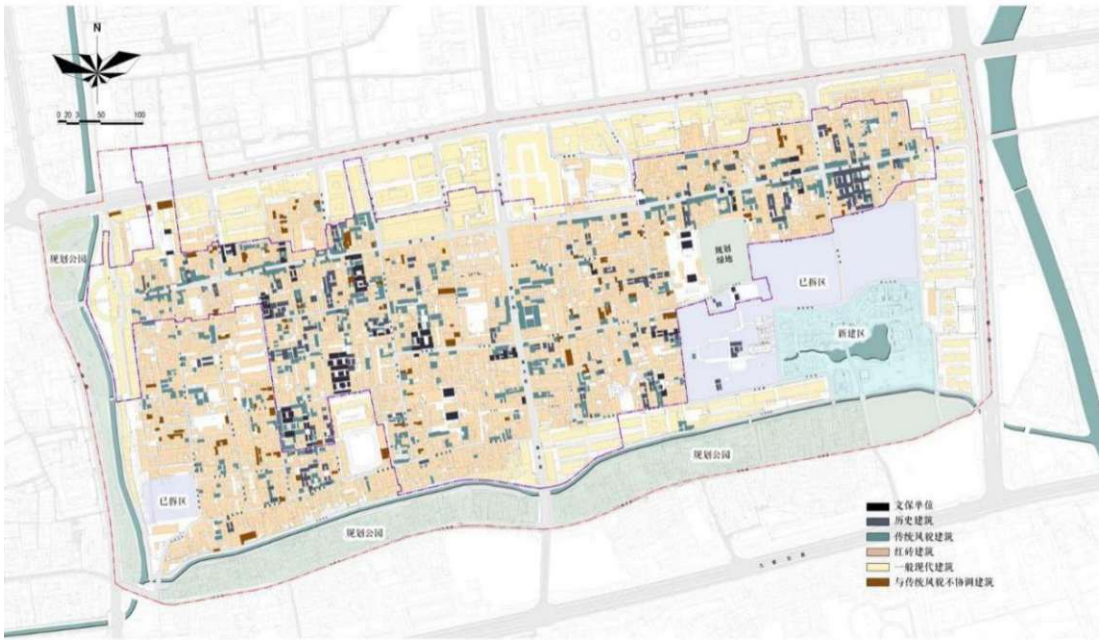
In this paper, the two core indexes, the proportion of historical buildings and the density of historical environmental elements, are used to measure the historical elements in each unit of the historical and cultural blocks. The proportion of historic buildings aims to measure the overall proportion of historic buildings and traditional buildings on the street interface. Through the quantitative analysis of this index, we can intuitively understand the distribution of historical buildings in each unit, and then grasp the characteristics of historical features of the whole block. At the same time, the study also introduces the density of historical environmental elements to comprehensively reflect the distribution density of various historical environmental elements in the historical and cultural streets. This index covers a variety of historical environmental elements, such as famous trees and ancient trees, ancient Bridges, ancient towers and landmarks. Through the statistics and analysis of their distribution in each unit, it can have a more comprehensive understanding of the historical and cultural heritage resources of the block.(Table 4).18

018Table 4.18 Statistics Table of the proportion of buildings with historical features

The proportion of historical buildings in each unit										
number	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10
proportion	41.1%	14.5%	13.2%	51.5%	20.6%	64.8%	13.8%	41.4%	3.7%	31.7%
number	A-11	A-12	A-13	A-14	A-15	A-16	A-17	A-18	A-19	A-20

proportion	21.3 %	19.3 %	7.4%	19.2 %	69.4 %	54.7 %	14.2 %	71.9 %	13.9 %	13.9 %

According to the status map of the overall style of the building in the Protection Plan, statistics include the proportion of cultural preservation units, historical buildings and traditional buildings in each unit. The results show that each unit of historical buildings average of 29.7%, including eight units of historical buildings more than this value, these units are mainly distributed along the west street, south street area and east street drum tower area, around the beautiful scene gate, temple, Henan government temple, drum tower these important cultural relics protection units, the surrounding architectural style is more traditional, generally retained the slope of blue brick, not replaced by the late construction of red brick buildings and modern architecture. West street section (A-9) and Zhengyi street (A-13) historical buildings accounted for less than 10%, contains more red brick buildings and general modern buildings, streets on both sides of the main function of the new commercial, high-rise residential area and business office, have big difference in the building height, roof from traditional architecture.



016 Figure 4.17 Current situation of the Dongxinanyu Historical and Cultural Block

Based on the protection and renovation map of traditional streets and alleys in the Protection Plan, a detailed statistics on the location and number of famous trees and ancient trees are carried out. In order to ensure the authenticity and integrity of the data,

the research further combined the field investigation, and added statistics on other historical environmental elements such as ancient Bridges and towers. Through this series of field investigations and data collection, a comprehensive and detailed data set of historical environmental elements can be constructed.

On this basis, the total number of historical environmental elements in each unit is further counted. In order to more intuitively reflect the distribution of historical environment elements per unit, the ratio of the total number to the cell length is calculated, and the number of historical environment elements within each unit length(100m) is obtained. This index can reflect the density of historical environmental elements in the block space, so it is used as a quantitative index of the density of historical environmental elements.(Table 4).19

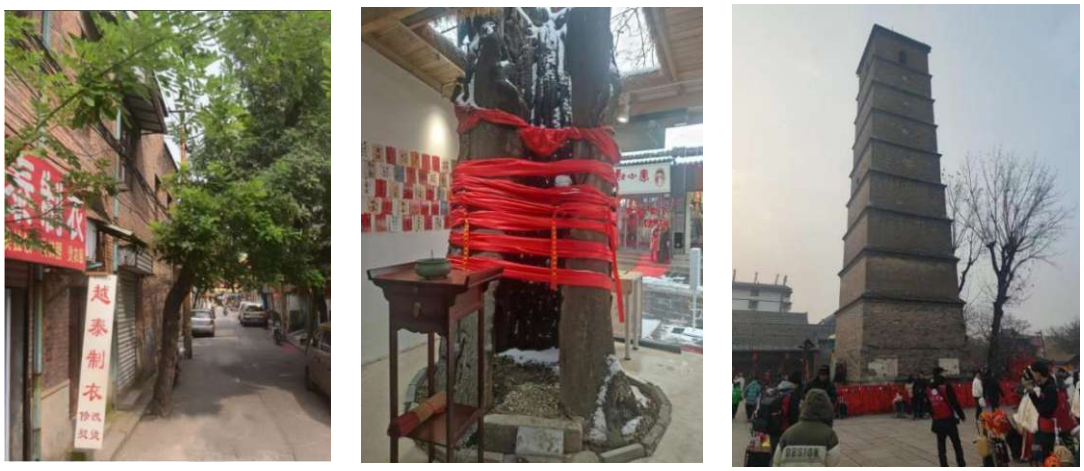
The results show that the average density of historical environmental elements is 1.92 / 100m, among which the density of historical environmental elements exceeds this value. These units are mainly distributed in the traditional residential courtyard area around Liren Lane, Drum Tower area and Luoyi Ancient City area. In the traditional residential courtyard area, famous trees and ancient trees, as the core historical environmental elements, not only carry rich historical and cultural connotations, but also provide a quiet and beautiful living environment for residents, which greatly improves the quality of life. These ancient trees have experienced the vicissitudes of life and witnessed the flow of time, with luxuriant branches and leaves and whirling shadows, which bring cool and comfort to the residents, and also become an excellent place for the neighbors to communicate and have a rest. In the the Drum Tower area, in order to fully display the unique charm of the traditional craft and culture of the Drum Tower, the planners skillfully combined many ancient trees with the cultural and creative industries, and transformed them into a unique shop. These shops not only retain the original style of the ancient trees, but also endow them with new cultural connotations through creative design. Visitors can enjoy the perfect integration of ancient trees and cultural and creative elements here, and feel the collision and integration of tradition and modernity, thus creating a novel and unique tour experience. Luoyi ancient city area carefully arranged Wenfeng Pagoda, Lide Bridge, ancient trees and other historical environmental elements on the axis. Through the series of axes, tourists are guided to gradually go deep into the interior of the ancient city and historical and cultural blocks, and explore the stories and legends hidden in the depths of the years. Visitors can feel the historical heritage and cultural atmosphere of the ancient city here,

and experience a wonderful journey through time and space.

019Table 4.19 Statistical Table of historical environmental element density

Density of historical environmental elements of each unit (per / 100m)										
number	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10
density	1.61	0.67	0.38	1.23	1.32	2.62	1.84	7.24	0.46	0.57
number	A-11	A-12	A-13	A-14	A-15	A-16	A-17	A-18	A-19	A-20
density	0.00	1.22	1.16	1.27	2.70	3.45	1.39	5.03	1.49	2.78

017Figure 4.18 Distribution of Ancient Trees in the Dongxinanyu Historical and Cultural Block



018Figure 4. Ancient trees and ancient towers in block

(4) Functional and facility elements

In this study, the functional facility characteristics of each unit in the historical and cultural block were measured by three aspects of identification guide facility density, functional facility density and functional mixing degree.

As an important part of the block guide system, the sign guide facilities play an indispensable role in helping people quickly recognize and locate the historical and cultural blocks. In order to ensure the authenticity and accuracy of the data, the research adopted the method of field investigation and statistics, and analyzed the identification and guidance facilities of each unit in detail. The density of the facility within the unit length (100m) was further calculated as a quantitative indicator of the facility.

As the key to meet the different needs of diverse groups, the number and variety of functional facilities directly reflect the functional perfection of the block. In order to fully reflect the functional facility characteristics of the block, the obtained POI point data were classified into three categories, and the number and density of various facilities were counted in detail. As an important indicator to measure the functional diversity of blocks, the functional mixing degree is calculated based on the ratio of type to number of total POI facilities within the unit. The higher the value, the more diverse the functional types in the unit, and the more satisfying the needs of different people. On the contrary, the lower the value, the lower the functional diversity of the unit and the possible homogeneity.

The statistics of identification facilities include road names, cultural protection units, historical building introduction display boards, guide maps, intangible cultural heritage publicity boards, etc. After counting the number of identification facilities in each unit, the density of identification facilities within the length (100m) per unit length is calculated as a quantitative index. The results show that the average density of the units is 1.32 / 100m, with 9 units having the facility density exceeding this value. On the whole, Ximen Street (A-1) has the highest density of marking facilities. Ximen Street connects Lijingmen and West Street to the historical and cultural block, and connects various public transportation stations, such as subway stations and buses, to the outside of the block. It is an important channel for tourists to enter the block. The signs on the street are more about the overall introduction and guidance of the historical and cultural blocks. The two sections of West Street (A-4, A-9), East Street (A-11) and Mingxin Street (A-19) are significantly less dense than the other units, with a density of less than 0.5.

020Table 4.20 Statistical Table of Identification Guidance facilities

Density per unit (unit / 100m)										
number	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10
density	4.84	2.01	1.50	0.41	1.99	0.87	0.61	1.32	0.46	1.14
number	A-11	A-12	A-13	A-14	A-15	A-16	A-17	A-18	A-19	A-20
density	0.47	0.82	0.58	1.90	1.08	1.38	1.39	1.89	0.00	1.85

In the density of functional facilities, the density of life service facilities, the facilities of commercial stores and cultural experience facilities in each unit is measured respectively according to the POI data. As an important part of residents' daily life, the reasonable density of life service facilities is directly related to the convenience of residents' life. In this study, life service facilities mainly included medical treatment, sports and leisure, and community institutions. As an important carrier of economic activities in the block, the change of its density not only reflects the commercial atmosphere of the block, but also reflects the development level of the block economy. In this study, the commercial store facilities mainly include shopping services, catering, accommodation services, etc. As an important embodiment of the cultural expression of the block, the enhanced density of cultural experience facilities helps to enhance the cultural attraction of the block and promote the development of cultural tourism. In this study, the cultural experience facilities mainly include scenic spots, museums, former residences of celebrities, cultural and creative institutions, etc. By combing and analyzing the POI data of these facilities, this study helps to comprehensively understand the richness of various facilities in each unit, and provide useful reference for the cultural protection and inheritance of the block.(Table 4)).21

The results show that the average density of living service facilities in each unit is 1.98 / 100m, the average density of commercial store facilities is 6.16 / 100m, and the average density of cultural experience facilities is 2.45 / 100m. Selected unit of the commercial store facilities density is higher than the cultural experience facilities density, life service facilities in the lowest among the three. "cross street" since the ancient place is the merchants, after the founding of the important business district, and the recent gradual attention of historical and cultural heritage protection, Luoyang city built a series of museums, galleries and other cultural experience facilities, become the brigade and destination of night consumption.

021Table 4.21 Statistical table of functional facilities

Functional facility density of each unit (unit / 100m)

number	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10
living service facilities	1.61	4.03	1.13	1.65	3.97	3.06	0.61	1.97	0.92	4.00
Commercial shop facilities	1.61	10.07	5.26	9.05	3.97	8.73	7.36	7.24	10.14	13.14
Cultural experience facilities	7.26	0.67	0.75	1.23	0.00	1.31	0.00	0.00	1.38	2.29

Continuation table 4.21

Functional facility density of each unit (unit / 100m)										
number	A-11	A-12	A-13	A-14	A-15	A-16	A-17	A-18	A-19	A-20
Living service facilities	8.84	0.00	2.89	0.00	0.00	1.38	0.69	1.89	0.50	0.46
Commercial shop facilities	10.70	3.67	4.62	2.53	2.16	5.52	12.50	1.26	0.50	3.24
Cultural experience facilities	3.26	3.27	1.73	1.90	5.41	5.52	4.17	2.52	3.96	2.31

In terms of the density of life service facilities, there are 7 units higher than the average, respectively. They are mainly distributed in the branches and alleys of the "fishbone" road network. The overall density of the functional facilities on both sides of the streets and alleys is not high, and the land on both sides is mainly residential land. Mingxin Street (A-19) and Liulin South Street (A-20) have the least density of life service facilities. This area is the main streets and alleyways of Luoyi Ancient City. The protection and transformation mode adopted by the ancient city of Luoyi to "demolish the old and ancient" has now become a destination for tourist, and there are few life service facilities.

In terms of the density of commercial store facilities, there are 9 units above the average, mainly distributed in West Street, South Street and Minzhu Street. There are many buildings in the Ming and Qing Dynasties on both sides of the West Street, and the scale of the shops is relatively small. The commercial shops are mainly composed of specialties and souvenirs, with a strong cultural atmosphere and charm, showing the characteristics of the intersection of tradition and modernity in the old city of Luoyang.

The commercial shops on both sides of South Street are mainly local characteristics of local shops. Minzhu Street is famous for its delicious food, and it is a landmark street in the neighborhood.

In terms of the density of cultural experience facilities, there are 6 units above the average value, mainly distributed near Lijingmen and East Street. As a municipal cultural relic protection unit, Lijingmen has a series of museums and art galleries around it, creating an overall atmosphere of natural history exhibition. East Street is mainly local characteristic shops, combined with the traditional Chinese medicine and the literati culture, pear sugar, calligraphy and painting shops distributed here. The density of cultural experience facilities on Jishi Street (A-7) and Xianguo Street (A-8) is significantly smaller than that of other units. Although there are traditional buildings and former residences of celebrities on these two streets, the current functions of these buildings are still residential functions, and they are not open to the public.

The mixing degree of functional facilities can reflect the diversity of functions of each unit. Combined with Baidu POI and field research, the mixing degree of functional facilities of each unit is measured according to the types of subcategories of statistical functional facilities. The results show that the average of the total number of functional facilities is 19.55, there are 7 units higher than the mean, including the south street (A-10, A-11). The average mixture of functional facilities is 0.32, and there are 8 units higher than the average, mainly distributed in drum tower Area (A-14, A-15) (A-1, A-2, A-3) and Luoyi Ancient City Area (A-18, A-19 and A-20). Among these areas, the number of facilities in the Lijingmen area is significantly more than other units, and there is no obvious difference in the number of various facilities, which can provide a rich and interesting experience for the crowd. The drum tower area and Luoyi Ancient City area are the core of the renovation in the previous rounds of renewal of the Dongxinanyu historical and cultural blocks. The street and lane facilities are mainly diverse cultural shops and characteristic handicraft shops, which reflect the transformation results in terms of the mixed degree of functional facilities.

022Table 4.22 statistics of functional facilities

Mix degree of functional facilities of each unit							
number	Total number of functional facilities	Category of functional facilities	function mixedness	number	Total number of functional facilities	Category of functional facilities	function mixedness

A-1	13	8	0.62	A-11	49	8	0.16
A-2	22	9	0.41	A-12	17	5	0.29
A-3	19	8	0.42	A-13	16	4	0.25
A-4	29	5	0.17	A-14	7	3	0.43
A-5	12	3	0.25	A-15	14	5	0.36
A-6	30	7	0.23	A-16	18	5	0.28
A-7	13	4	0.31	A-17	25	5	0.20
A-8	14	4	0.29	A-18	9	3	0.33
A-9	27	7	0.26	A-19	10	5	0.50
A-10	34	5	0.15	A-20	13	6	0.46

4.5 Summary of this chapter

This chapter takes the Dongxinanyu historical and cultural blocks in Luoyang as the empirical research object, and makes an in-depth measurement analysis of the block scene through the comprehensive use of various research methods. First, in sections 1 and 2, a research method of qualitative analysis was used to conduct an exhaustive coding analysis of the network review data of blocks. Through this process, the core scene elements of the historical and cultural blocks were successfully identified, and further summarized into three main scene types: life continuation scene, market consumption scene and cultural experience scene. Then, the study conducted a second coding analysis of cultural values, thus revealing the specific characteristics of people's externalized behavior under different scene types.

In the third section, the field survey adopts the research method of behavior mapping, identifies the scene externalization behavior, and completes the measure of the three types of scenes identified before. Through the in-depth analysis of the data, the distribution characteristics of various scenes in the block space are clearly described, so as to show the scene composition of the block more intuitively. In addition, this section also uses SPSS software to analyze the clustering of the selected street units in the block, and summarizes the street scene characteristics of the block into four categories: cultural experience leading, market consumption leading, street space deactivation, and the integration of life and consumption.

In Section 4, the study uses a combination of qualitative and quantitative research methods to conduct a comprehensive measure analysis of the elements of the block spatial environment. Through this work, we are fully prepared for the next step of using

SPSS software to study the correlation of scenes and space environment elements.

023Table 4.23 Summary of block spatial environment elements

	Block traffic		Traditional street space		Historical elements			Facility elements			
								Functional Facilities Density (n / 100M)			
number	Integration	Choice	depth-width ratio (D/H)	Street view elevation coordination degree (%)	The proportion of historical buildings is (%)	historical environmental elements density (n / 100m)	Identification guide facility density (n/100m)	service facilities	Commercial shop facilities	Cultural experience facilities	Functional facility mix degree
A-1	1.16	14	0.42	100%	41.1%	1.61	4.84	1.61	1.61	7.26	0.62
A-2	1.10	6	0.38	93.3%	14.5%	0.67	2.01	4.03	10.07	0.67	0.41
A-3	1.69	12	0.48	100%	13.2%	0.38	1.50	1.13	5.26	0.75	0.42
A-4	2.05	27	0.70	84.6%	51.5%	1.23	0.41	1.65	9.05	1.23	0.17
A-5	1.83	20	0.36	81.8%	20.6%	1.32	1.99	3.97	3.97	0.00	0.25
A-6	2.31	37	0.60	88.9%	64.8%	2.62	0.87	3.06	8.73	1.31	0.23
A-7	2.43	44.5	0.36	85.3%	13.8%	1.84	0.61	0.61	7.36	0.00	0.31
A-8	2.47	40	0.50	87.1%	41.4%	7.24	1.32	1.97	7.24	0.00	0.29
A-9	2.95	76	1.00	52.8%	3.7%	0.46	0.46	0.92	10.14	1.38	0.26
A-10	2.66	54	1.17	87.4%	31.7%	0.57	1.14	4.00	13.14	2.29	0.15
A-11	2.41	41	1.20	76.3%	21.3%	0.00	0.47	8.84	10.70	3.26	0.16
A-12	2.94	90	1.00	64.9%	19.3%	1.22	0.82	0.00	3.67	3.27	0.29
A-13	2.61	50	0.26	77.7%	7.4%	1.16	0.58	2.89	4.62	1.73	0.25
A-14	2.12	25	0.40	85.9%	19.2%	1.27	1.90	0.00	2.53	1.90	0.43
A-15	1.38	12	0.60	94%	69.4%	2.70	1.08	0.00	2.16	5.41	0.36
A-16	2.24	24	0.70	90.1%	54.7%	3.45	1.38	1.38	5.52	5.52	0.28
A-17	2.62	50.5	0.90	83.9%	14.2%	1.39	1.39	0.69	12.50	4.17	0.20
A-18	2.22	25.5	0.70	89.7%	71.9%	5.03	1.89	1.89	1.26	2.52	0.33
A-19	2.19	25	0.62	93.9%	13.9%	1.49	0.00	0.50	0.50	3.96	0.50
A-20	1.73	17	0.67	100%	13.9%	2.78	1.85	0.46	3.24	2.31	0.46
mean	2.15	34.53	0.86	85.9%	29.8%	1.92	1.32	1.98	6.16	2.45	0.32

Chapter 5 The influence of the spatial environment of historical and cultural blocks on multi-type scenes

5.1 Correlation analysis of spatial environment elements and scene

In order to further study the influence mechanism of various scenes of historical and cultural blocks, according the basis of the block space environment factor quantitative results, in this chapter using the SPSS software for the correlation analysis, through Pearson correlation analysis, reveal the space environment impact factors of different scenes, so as to provide scientific basis for the formulation of scenario optimization strategy.

There are two important indicators in the Pearson correlation analysis in SPSS, correlation coefficient r and significance P. The absolute value | r | of the correlation coefficient can reflect the close relationship between the two variables. At | r |> 0.7, the relationship is very close.0.4 <| r | <0.7, indicating that the relationship is relatively close. At 0.2 <| r | <0.4, the relationship is general. Meanwhile, the positive and negative correlation coefficient can reflect the positive and negative correlation between two variables. When the correlation coefficient is positive, the independent variable promotes the dependent variable; when the correlation coefficient is negative, the independent variable has an inhibitory effect on the dependent variable. The significance P ranges from 0 to 1, and there are usually three common criteria, namely, 0.1,0.05, and 0.01. In most cases, if the p-value is less than 0.01, at least 99% holds that there is correlation between two variables; if the p-value is less than 0.05 (and greater than or equal to 0.01), at least 95% holds that there is correlation between two variables; if the p-value is less than 0.1 (and greater than or equal to 0.05), at least 90% holds. In this study, only variables with a P-value less than 0.05 were counted, with * indicating a significant correlation at 0.05and with * * indicating a significant correlation at at 0.01.

5.1.1 Life continuation scene

The measurement value of life continuation scene was associated with 11 factors of 4 indicators of block spatial environment, and the analysis results are shown in Table 5.1.

01Table 5.1 Life Continuing Scene Correlation Analysis Table

		relativity										
		Integration	Choice	Façade coordination	depth-width ratio (D/H)	The proportion of historic buildings	Density of historical environmental elements	Mark to guide the facility density	Density of living service facilities	Facilities density of commercial stores	The density of cultural experience facilities	Functional mixing degree
Life continuation scene	Pearson correlation	-.455*	-.530*	.413	-.446*	.348	.528*	.341	.479*	-.088	-.180	.089
	Significance	.044	.016	.070	.049	.132	.017	.142	.032	.713	.446	.711
	The number of cases	20	20	20	20	20	20	20	20	20	20	20

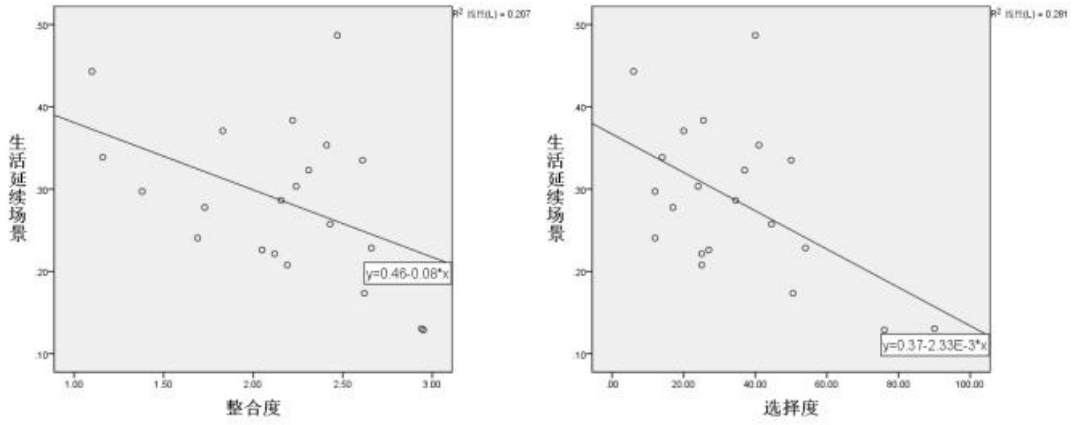
**. At the 0.01 level, the correlation was significant.

*. At the 0.05 level, the correlation was significant.

(1) Block traffic

For the block traffic, the Integration and the Choice of the two indicators showed a significant correlation at the level of 0.05. And the correlation coefficient of the two is negative, that is, the higher the Integration and Choice of the street and lane, the lower the measure of the life continuation scene. From the perspective of the absolute value of the correlation coefficient, the absolute value of the correlation coefficient of both is greater than 0.4, indicating that the Integration and the Choice are closely related to the life continuation scene, and the Choice on the life continuation scene is slightly greater than the integration degree. Specifically, the Integration reflects the centrality and accessibility of streets in the whole block traffic network. When the Integration is high, it means that the street is in a relatively core position in the traffic network, which is easy to attract a large number of transit traffic. However, this high degree of integration also brings the increase of people and traffic flow, which may destroy the original quiet

atmosphere of the block, thus having a negative impact on the scene of life continuation. On the other hand, the Choice refers to the frequency that streets are used as travel paths. Streets with high Choice usually have high traffic efficiency, but it also means that more pedestrians and vehicles pass through. This high frequency of use may also interfere with the life continuation scene and reduce its measurement value. The results show that for the fine streets and alleys naturally growing in historical districts, it is not the main choice for people to pass through. Such spatial characteristics which are not easily disturbed by outsiders increase the possibility of forming a relatively independent life field, and often becomes a suitable area for residents to gather, communicate and shape the current scene of life continuation. The scatter plot and linear fitting relationship between block traffic index and life continuation scene are shown in Figure 5.1.



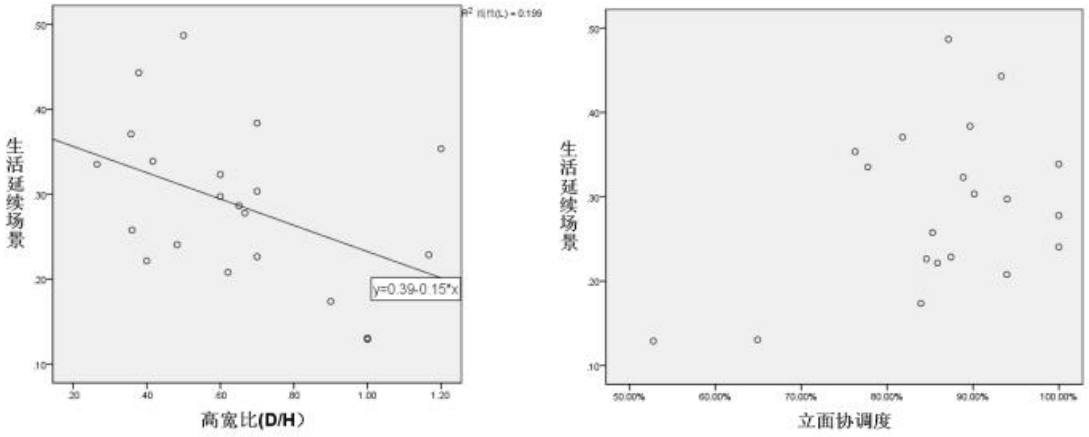
01Figure 5.1 Relationship between block traffic index and life continuation scene

(2) Traditional street and lane space

In the traditional street space, the aspect ratio showed a significant correlation at the 0.05 level. And the correlation coefficient is negative, that is, the greater the aspect ratio of the street, the lower the measure of the life continuation scene. The absolute value of the correlation coefficient | r | =0.446> 0.4, indicating that the aspect ratio and life continuation scene is more closely related. The emergence of this phenomenon can be explained by the specific environment of the historical district and the psychological needs of the residents. The number of building floors in the historic district is mostly 1-3 floors, and the overall height is relatively consistent, so the main factor affecting the aspect ratio lies in the width of the street. When the height and width of the streets and lanes are relatively small, the visual space is relatively limited, and people's line of sight is limited to a relatively narrow area. This spatial form gives people a kind of private

and intimate feeling, which just meets the psychological needs of local residents to pursue a quiet and cordial communication space during activities. Therefore, this kind of streets and lanes often become the area with high measurement of life continuation scene. On the other hand, no significant linear correlation was found between the coordination of the street facade and the life continuation scene. This may be because the coordination of the facade is more related to the appearance aesthetics of the streets and the coordination of the overall style, while the life continuation scene pays more attention to the daily life and communication activities of residents in the streets. Although the facade coordination degree has a certain impact on the overall quality and image of the block, it does not directly determine the measure of the life continuation scene.

The scatter plot and the linear fitting relationship between the traditional street space index and the life continuation scene is shown in Figure 5.2.



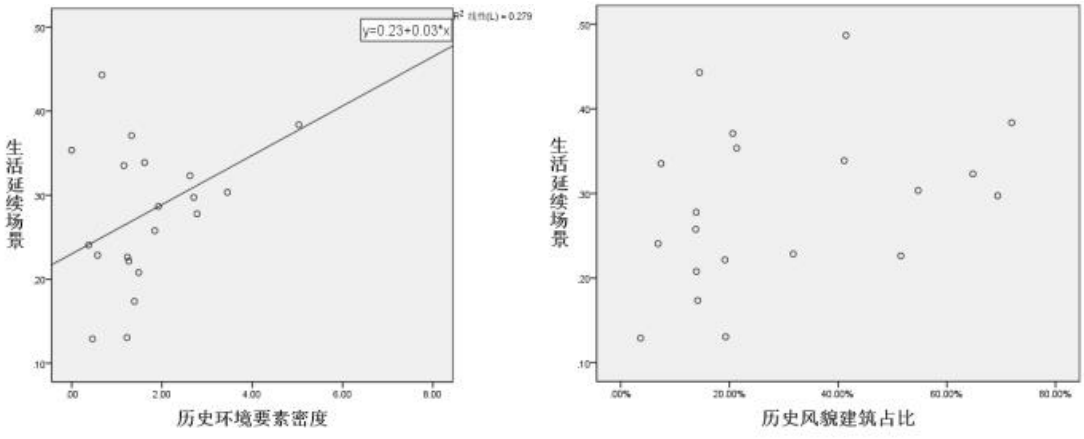
02Figure 5.2 Relationship between space indicators of traditional streets and lanes and life continuation scenes

(3) Historical elements

In terms of the historical elements of streets and alleys, the research results show that there is a significant correlation between the density of historical environmental elements and the measure of life continuation scene at the level of 0.05. The correlation coefficient is positive, indicating that the greater the density of historical environmental elements in the streets and alleys, the higher the measure of the life continuation scene. The absolute value of the correlation coefficient | r | =0.528 is greater than 0.4, further prove that the historical environment element density and the relationship between life continuation scene is relatively close.

The historical environment elements of the historical and cultural blocks mainly include ancient trees, as well as a small number of ancient Bridges, ancient towers and so on. These historical elements are not only the material cultural heritage of the block, but also the carrier of the local culture and history. As an important landscape resource in the block, ancient trees not only have ornamental value, but also carry rich history and culture and the urban memory of residents. These trees witness the historical changes of the block, and interweave and blend with the living space of the local residents, forming a unique atmosphere of the block. The existence of ancient trees attracts a large number of residents to rest and communicate under the trees, which further enhances the life atmosphere and vitality of the block. Therefore, the streets and alleys with a high density of historical environmental elements tend to have a higher measure of life continuation scene.

The scatter plot and linear fit of the relationship between historical element indicators and life continuation scenes are shown in Figure 5.3. No significant linear correlation was found between the life continuation scene and the proportion of historical buildings. This may be because although the historical buildings are also an important part of the history and culture of the block, their impact on the life continuation scene may be less direct and significant than the historical environmental elements. Historical buildings are more reflected in the overall style and architectural style of the block, while the scene of life continuation pays more attention to the daily life and communication activities of residents in the streets.



03Figure 5.3 Relationship between historical element indicators and life continuation scene

(4) Functional and facility elements

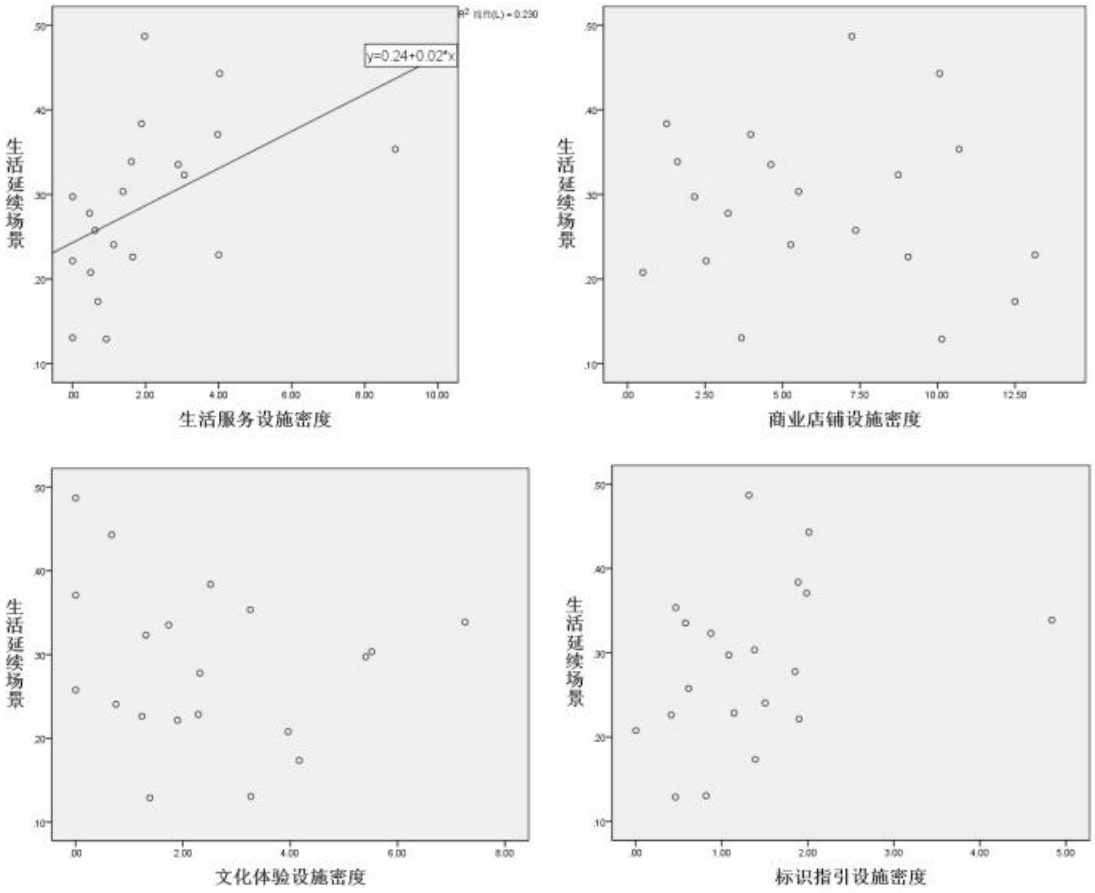
In terms of the functional facilities of streets and alleys, there is a significant

positive correlation between the density of life service facilities and the measure of life continuation scene. This finding was made at the significance level of 0.05, indicating that the relationship is statistically significant. The correlation coefficient is positive, which means that the greater the density of life service facilities in the streets and alleys, the higher the measure of the life continuation scene. The absolute value of the correlation coefficient | r | =0.479 is greater than 0.4, further shows that the life service facilities density and the relationship between life continuation scene is relatively close.

The layout and density of life service facilities in the streets and alleys have an important impact on the life convenience and social opportunities of residents. In the historical and cultural blocks, there are various life service facilities such as clinics, haircuts, and maintenance on the streets and alleys. The existence of these facilities not only improves the convenience of residents' life, but also encourages people to go out frequently. In the process of using these facilities, residents will naturally communicate and interact with other residents, thus promoting the formation of the life continuation scene in the streets and alleys.

In addition, life service facilities can provide more social opportunities and entertainment options. For example, community activity centers, elderly care service centers and other places provide residents with platforms for community activities and communication and interaction, making the connection between residents more close. In the Dongxinanyu historical and cultural blocks, the streets with such life service facilities have more variety of residents' activities, which further enhances the measurement of life continuation scene in the streets and alleys.

The scatter plot and linear fitting relationship between functional facility element indicators and life continuation scene are shown in Figure 5.4. No significant linear correlation was found between the life continuation scene and several other functional facility indicators, indicating that the distribution and density of these facilities in the streets were not enough to have a significant impact on the life continuation scene



04Figure 5.4 Relationship between historical element indicators and life continuation scene

5.1.2 Market consumption scene

In this section, the measurement values of market consumption scene and 11 factors of block space environment are analyzed, and the analysis results are shown in Table 5.2.

02Table 5.2 Correlation Analysis Table of Market consumption scenarios

	relativity										
	Integration	Choice	Façade coordination	depth-width ratio (D/H)	The proportion of historic buildings	Density of historical environmental elements	Mark to guide the facility density	Density of living service facilities	Facilities density of commercial stores	The density of cultural experience facilities	Functional mixing degree

Life continues the scene	Pearson correlation	.593**	.707**	-.624**	.391	-.231	-.262	-.399	.284	.620**	-.157	-.676**
	Significance	.006	.000	.003	.088	.327	.264	.081	.225	.004	.509	.001
	The number of cases	20	20	20	20	20	20	20	20	20	20	20

**. At the 0.01 level, the correlation was significant.

*. At the 0.05 level, the correlation was significant.

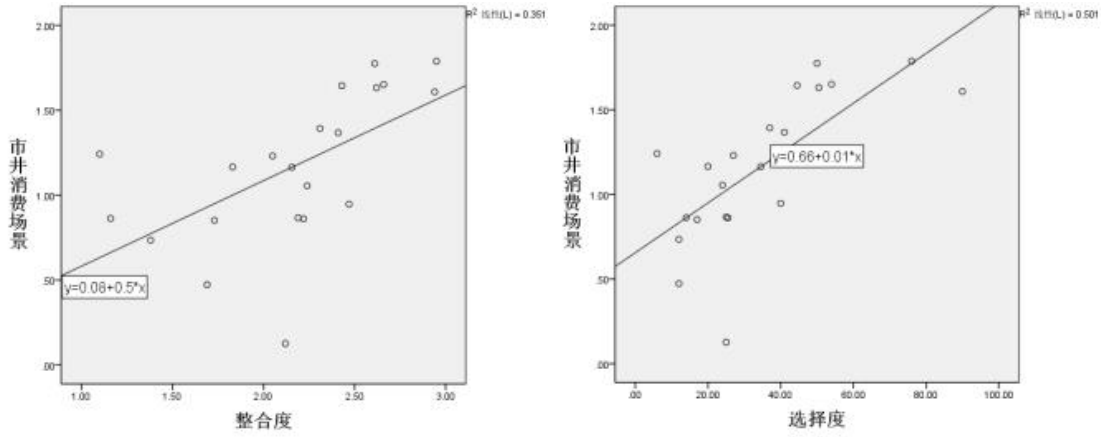
(1) Block traffic

In terms of block traffic, the two indicators of Integration and Choice are significantly correlated with the market consumption scene measure at the level of 0.01. The correlation coefficient of both is positive, which means that the higher the Integration and Choice of the street, the higher the measurement of the market consumption scene.

Further analysis of the absolute value of the correlation coefficient, the absolute value of the correlation coefficient of integration is | r | =0.593, greater than 0.4, shows the correlation between Integration and street consumption scene is relatively close. And the correlation coefficient of choice is as high as | r | =0.707, greater than 0.7, indicating that the choice on the market consumption scene is significantly greater than the integration.

The streets with high integration degree occupy the central position in the block traffic network, which has strong accessibility and attraction, so it is easier to gather people. This central spatial feature brings more popularity and vitality to the streets and alleys, thus enhancing the possibility of consumers' choice, travel and consumption activities. The streets with a high degree of choice means that these streets are more likely to be selected during people's travel. This high degree of selection not only reflects the importance of streets in the traffic network, but also reflects its potential value as a consumption place. The streets with a high choice degree usually have a richer commercial atmosphere and more consumption choices, so they can attract more consumers to come here for shopping, leisure and entertainment.

The scatter plot and linear fitting relationship between block traffic index and market consumption scene are shown in Figure 5.5.



05Figure 5.5 Relationship between block traffic indicators and market consumption scenes

(2) Traditional street and lane space

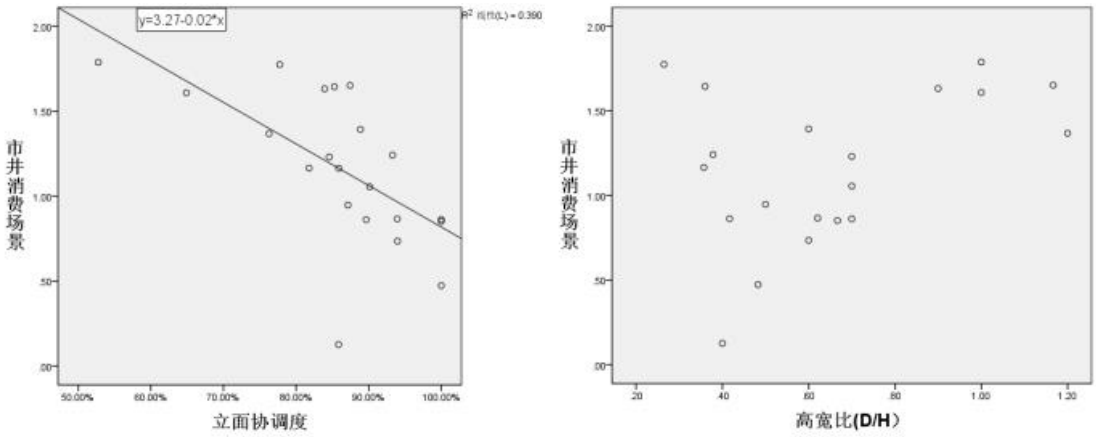
In terms of the traditional street space, the facade coordination degree showed a statistically significant correlation with the measure of the market consumption scene, and this correlation was significant at the level of 0.01. Specifically, the correlation coefficient is negative, which means that with the increase of the coordination degree of the street facade, the measurement of the market consumption scene decreases instead. This finding shows that there is a reverse relationship between the facade coordination degree and the market consumption scene.

The absolute value of the correlation coefficient | r | =0.624 is greater than 0.4, further shows that the relationship between facade coordination and market consumption scenes. This may be because the streets with high facade coordination usually give people a sense of uniformity and lack of change, and this uniformity may not be conducive to attracting consumers' attention and stimulating their consumption desire. On the contrary, the streets with lower facade coordination tend to have more visual and sensory stimulation, which can attract the attention of pedestrians and stimulate their consumption impulse.

In the Dongxinanyu historical and cultural blocks, the streets and alleys with low facade coordination are mainly distributed in the West Street and South Street sections. There are many commercial facilities on these streets, and various shops and signs, providing a colorful visual experience for pedestrians. This diversified street scenes not only attract the attention of pedestrians, but also stimulate their desire to consume, making these streets become hot areas for urban consumption activities.

The scatter plot and linear fitting relationship between traditional street space

index and market consumption scene are shown in Figure 5.6. No significant linear correlation was found between the market consumption scene and the street aspect ratio. This may be because the aspect ratio mainly affects the spatial experience of streets and the visual experience of pedestrians, but it has a relatively small impact on consumption activities. The formation of the market consumption scene is more influenced by many factors such as commercial atmosphere, consumer psychology and social culture.



06Figure 5.6 Relationship between the spatial indicators of traditional streets and alleys and the market consumption scenes

(3) Historical elements

In terms of the historical elements of streets and alleys, after detailed data analysis, it is found that the significant p-value of the proportion of buildings with historical features and the density of historical environment elements are both greater than 0.05, which means that there is no significant correlation between them and the market consumption scene. Although this result seems unexpected, in fact it is in line with the actual situation and experience of urban reconstruction.

At present, in the process of transforming the historical and cultural blocks, many cities often adopt the way of "demolishing the real and building the fake". The starting point of this way may be to meet the needs of modern consumption space, but it leads to the disappearance of traditional living space. The living space that was originally rich in historical information is transformed into a modern space dominated by consumption, and the relevant historical elements are also gradually deconstructed. Instead, it is a physical space shaped by various cultural symbols. Although this approach brings intuitive and novel sensory experience to consumers in a short period of time, increases the fun of shopping, and thus arouses consumers' attention and willingness to consume.

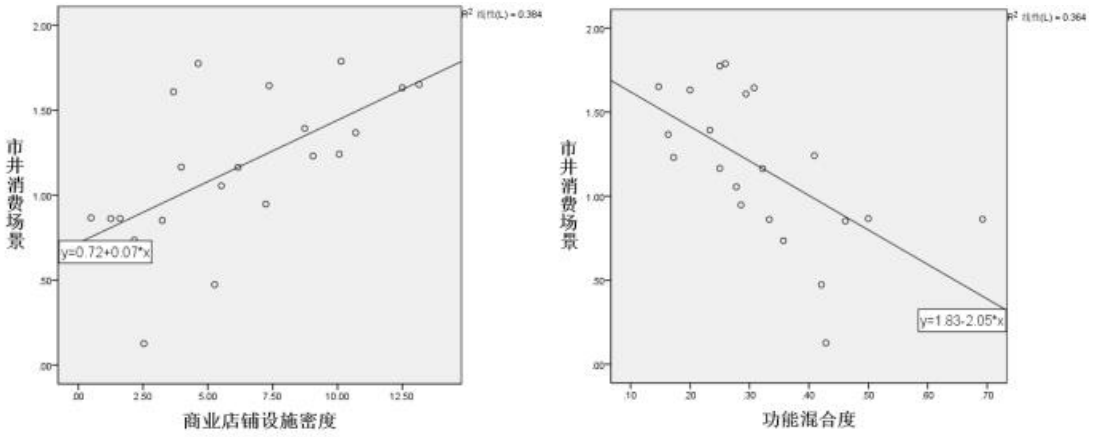
However, in the long run, it has caused irreversible damage to the city's characteristics and cultural diversity. The original unique urban style and historical context have been gradually erased in these transformations, and people's understanding of cultural diversity and richness is therefore limited.

(4) Functional and facility elements

In terms of street functional facilities elements, the facility density of commercial stores showed a significant correlation at the level of 0.01. And the correlation coefficient is positive, that is, the greater the density of commercial store facilities in the street, the higher the measurement of the market consumption scene. The absolute value of the correlation coefficient | r | =0.620> 0.4, shows that the commercial store facilities density and market consumption scene is closely related. The streets and alleys of the historical and cultural blocks are fine, and the density of shop facilities is generally higher than that of other areas of the city. They are continuous and provide rich choices for residents and consumers, so the market consumption scene of this kind of streets and alleys is greatly measured.

At the same time, there was also a significant negative correlation between functional admixture and market consumption scene, and this result was also significant at the 0.01 level. This means that the lower the functional mixing degree of the street and lane, the higher the measurement of the market consumption scene. The absolute value of the correlation coefficient | r | =0.676 is greater than 0.4, further emphasizing the tight relationship between the two. In theory, the higher the functional mix, the more consumers should choose. However, in the actual consumption process, consumers tend to take into account the cost of time and energy, and are more inclined to choose the streets with similar functions gathered, so as to compare the price and quality more conveniently. Therefore, when the same type of functional facilities are gathered on the streets and alleys, a good external effect can be formed, making the market consumption scene of these streets and alleys more highly measured.

The scatter plot and the linear fitting relationship between the functional facility elements and the market consumption scene are shown in Figure 5.7. No significant linear correlation was found between the market consumption scene and the proportion of other functional facilities.



07Figure 5.7 Relationship between functional facilities indicators and market consumption scene

5.1.3 Cultural experience scene

The measurement value of cultural experience scene and 11 factors of block space environment were analyzed, and the analysis results are shown in Table 5.3.

03Table 5.3 Correlation Analysis Table of Cultural Experience Scene

		relativity										
		Integration	Choice	Façade coordination	depth-width ratio (D/H)	The proportion of historic buildings	Density of historical environmental elements	Mark to guide the facility density	Density of living service facilities	Facilities density of commercial stores	The density of cultural experience facilities	Functional mixing degree
Cultural experience scene	Pearson correlation	-.429	-.354	.460*	-.042	.519*	.232	.632**	-.255	-.460*	.887**	.482*
	Significance	.059	.125	.041	.861	.019	.324	.003	.278	.041	.000	.031
	The number of cases	20	20	20	20	20	20	20	20	20	20	20

**. At the 0.01 level, the correlation was significant.

*. At the 0.05 level, the correlation was significant.

(1) Block traffic

In terms of block traffic, the two indicators of integration degree and selection degree did not show a significant correlation between each other and the cultural experience scene, which was confirmed by a significant p-value greater than 0.05. This finding shows that although linear distance and the probability of people in street selection influence general traffic flow, they are not enough to limit people flow with strong purpose, especially for cultural experience. In the process of pursuing cultural experience, these people show the potential and possibility of breaking through the spatial constraints.

In the traditional urban planning concept, it is indeed believed that people tend to choose the shortest path when choosing the walking path to save time, and the visual attraction of the environment is also an important consideration. However, with the rapid development of modern technology, especially big data and navigation technology, people's behavior patterns are also changing. A 2012 Pew Research Center study found that up to three-quarters of smartphone users use their phones to get information about their location, such as viewing maps and references to nearby attractions. This trend means that many populations in cities are somewhat dependent on technological navigation, which may have weakened their ability to independently determine spatial locations and identify roads. Therefore, for scene behaviors with clear purpose such as cultural experience, the difference of access opportunities brought about by block traffic can not significantly affect the measurement results of cultural experience scenes. When people pursue cultural experience, they are more influenced by non-traffic factors such as cultural attraction, activity richness and environmental atmosphere.

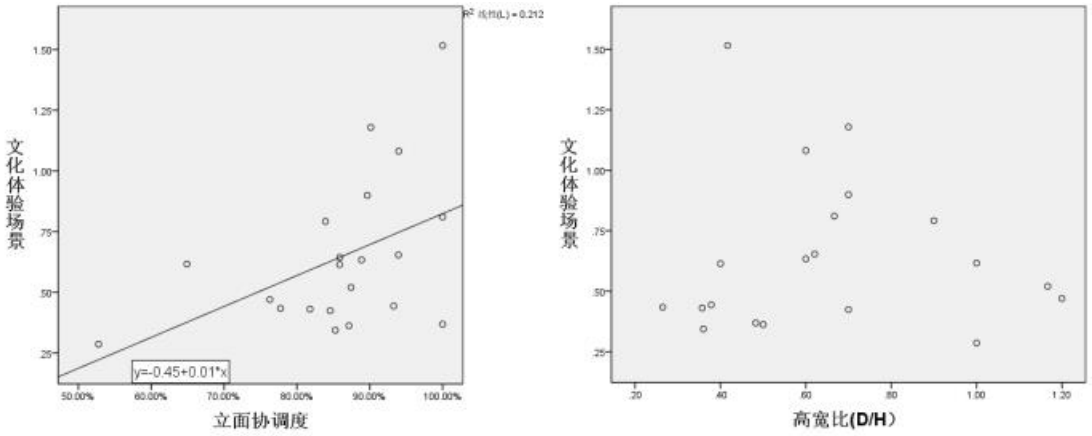
(2) Traditional street and lane space

In terms of the traditional street space, the Facade coordination level of 0.05 is significantly related to the measure of the cultural experience scene. The correlation coefficient is positive, indicating that there is a positive correlation between the coordination of the facade and the cultural experience scene. Specifically, the higher the coordination degree of the facade of the streets and alleys, the higher the measurement of the cultural experience scene. The absolute value of the correlation coefficient | r | =0.460 is greater than 0.4, shows the facade coordination and cultural experience scene has the close relationship.

The facade coordination degree has a direct impact on the beauty of the streets. When building facades show a high degree of coordination, they tend to be more

aesthetic and attractive, leaving a deep impression on pedestrians. In the Dongxinanyu historical and cultural blocks, the shops, Windows, flags and other elements on the building facade all carry the unique local cultural symbolic significance. These elements not only enrich the visual effect of the facade, but also convey the profound cultural connotations. Therefore, the facade of high coordination can attract people to take photos and other behaviors, and show their connection with specific places and culture, thus improving the measurement of cultural experience scenes in the streets and alleys.

See the scatter plot and linear fitting relationship between traditional street space elements and cultural experience scenes in Figure 5.8. No significant linear correlation was found between cultural experience scenes and street aspect ratio. This may be because the aspect ratio mainly affects the spatial experience and visual experience of the street, but has relatively little influence on the cultural experience. Cultural experience is more influenced by the richness of cultural elements in the streets, the historical atmosphere and the degree of people's participation.



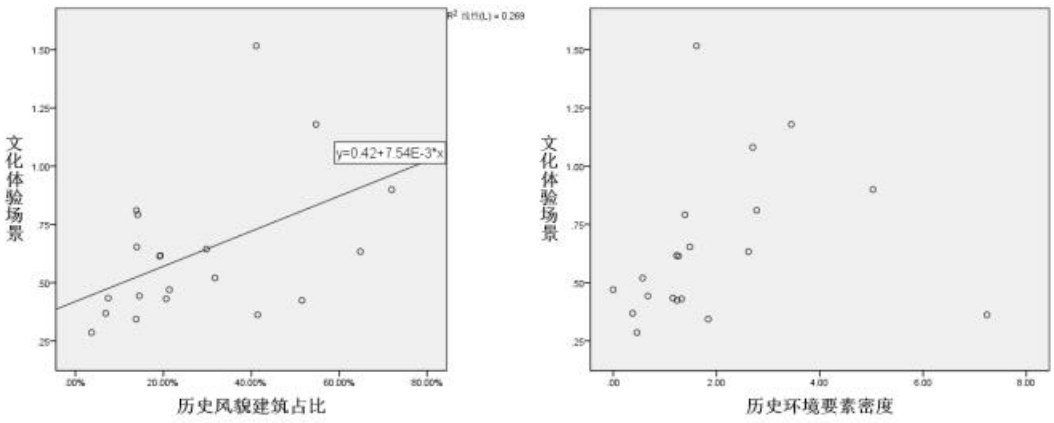
08Figure 5.8 Relationship between block traffic indicators and Cultural Experience Scenes

(3) Historical elements

In terms of the historical elements of streets and alleys, the research data show that the proportion of historical buildings has a significant correlation with the cultural experience scenes at the level of 0.05. This means that the higher the proportion of historic buildings in the streets, the higher the measurement of the cultural experience scene is. The absolute value of the correlation coefficient | r | =0.517 is greater than 0.4, further confirm that there is the close relationship between the historical architecture proportion and the cultural experience scene.

In the Dongxinanyu historical and cultural blocks, the positive influence of historical buildings on the cultural experience scene is reflected in many aspects. First of all, these buildings have the unique architectural style and aesthetic characteristics of the Ming and Qing Dynasties. Whether their simple appearance, exquisite carving or color collocation full of charm, they have endowed the block with profound cultural heritage and unique artistic charm. When people enjoy these buildings, they can enjoy the pleasure of beauty, which is also an important part of the cultural experience. As a result, historic buildings have often become popular places for tourists and citizens to take photos. In addition, historical buildings not only have aesthetic value, but also carry rich historical and cultural connotations. They bear witness to the changes of history, and are the carriers of past people and memories. These buildings often hide many little-known stories, which attract people to explore and visit. Through an in-depth understanding of the historical background and cultural connotation of these buildings, people can deeply feel the cultural charm of the block more deeply, so as to enhance the depth and breadth of cultural experience.

The scatter plot and linear fitting relationship between historical element indicators and cultural experience scenes are shown in Figure 5.9. No significant linear correlation was found between cultural experience scenes and the density of historical environmental elements. This may be because the concept of the density of historical environment elements is relatively broad, containing a variety of different types of elements. The influence of these elements on cultural experience scenes may vary according to specific circumstances, and it is difficult to describe with a single linear relationship.



09Figure 5.9 Relationship between traditional streets and cultural experience scenes

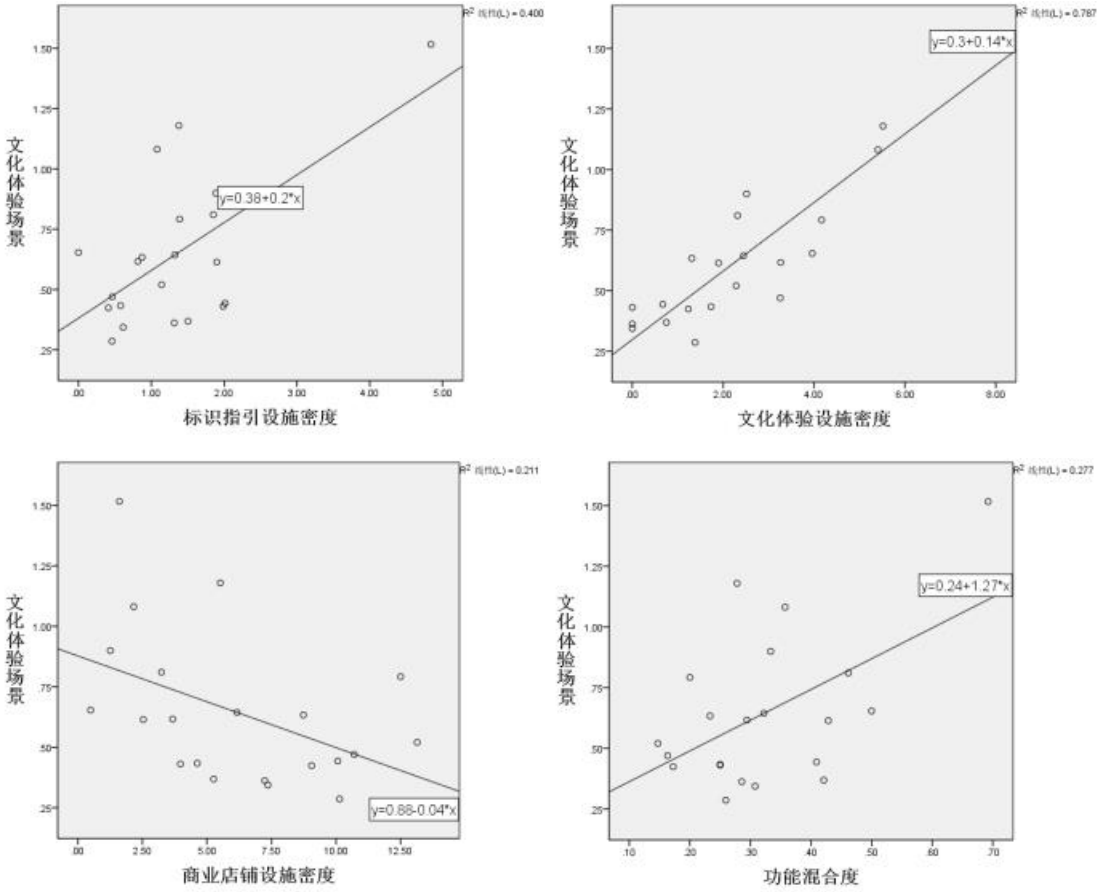
(4) Functional and facility elements

In terms of functional facility elements, the study found that the density of identification guide facilities and cultural experience facility density were significantly correlated with the cultural experience scene at the level of 0.01. This means that the higher the density of these two facilities in the street, the higher the measurement of the cultural experience scene. From the point of the absolute value of the correlation coefficient, identify the density of the correlation coefficient of | r | =0.632> 0.4, the absolute value of the correlation coefficient of cultural experience facility density | r | =0.887> 0.7, the correlation between identification guide facility density and cultural experience facilities density and cultural experience scenes are strong. Among them, the absolute correlation coefficient of the density of cultural experience facilities is higher, indicating that it has a greater impact on the cultural experience scenes. This also shows that in the planning and management of historical and cultural blocks, more attention should be paid to the construction and improvement of cultural experience facilities.

Sign-guidance facilities play an important role in the historical and cultural district. They not only provide guidance and guidance services to help them identify historical buildings, cultural relics and important attractions, but also enable people to have a deeper understanding of the origin, development and important events of historical districts through detailed explanations and introductions. This function can greatly enhance people's understanding and understanding of history and culture, and promote cultural education and learning. In the Dongxinanyu historical and cultural blocks, the perfection of the sign guidance facilities directly affects the depth of cultural experience of tourists and residents, so its density shows a significant positive correlation with the measurement of cultural experience scene.

Secondly, cultural experience facilities, as another important resource in the historical district, also have a significant impact on the measurement of cultural experience scene. These facilities include museums, exhibition halls and former residences of celebrities with unique cultural characteristics, which provide visitors with a rich variety of cultural experience activities. In the Dongxiananyu historical and cultural blocks, these cultural experience facilities attract a large number of tourists to visit, learn and experience with their unique historical and cultural background and rich cultural connotation. These facilities not only enrich the cultural atmosphere of the

block, but also improve the satisfaction of tourists' cultural experience, thus further improving the measurement of the cultural experience scene of the block.



010 Figure 5.10 Relationship between functional facilities indicators and cultural Experience Scenarios

In terms of the facility density of commercial stores, the study results showed a significant correlation with the cultural experience scene at the level of 0.05, and the correlation coefficient was negative. This means that the smaller the density of commercial store facilities in the streets, the higher the measurement of the cultural experience scene. This discovery reveals an important phenomenon that excessive commercialization may have a negative impact on the cultural experience of historic districts. When the density of commercial store facilities is too high, the commercial atmosphere of the historic district may be too strong, resulting in the original cultural landscape to be covered by the commercial facilities. In this case, the historical sense and cultural authenticity of the block may be damaged, thus affecting the cultural experience of the block by tourists and residents. In addition, in the process of pursuing commercial interests, businesses may ignore the protection and inheritance of the

characteristics of the historical and cultural blocks, which gradually loses the traditional commercial culture of the blocks and further reduces the quality of cultural experience. On the contrary, the moderate density of commercial store facilities helps to maintain the cultural characteristics and historical atmosphere of the block, and provide a more real and in-depth cultural experience for tourists and residents. Therefore, in the planning and management of historical and cultural blocks, the density of commercial shops and facilities should be reasonably controlled to ensure the balance between commercial development and cultural protection.

The functional mixing degree showed a significant correlation at the level of 0.05, and the correlation coefficient was positive, that is, the higher the functional mixing degree of the street, the higher the measure of the cultural experience scene. The absolute value of the correlation coefficient is | r | =0.482> 0.4, indicating that the function mixture is closely related to the cultural experience scene. The higher the functional mix means that more types of facilities and functions are covered in the block, which helps to attract visitors and residents from different backgrounds and interests to experience. The mixture of different functions not only increases the diversity and vitality of the block, but also provides more diversified cultural experience opportunities for tourists and residents. Specifically, the improvement of functional mixing can promote the communication and interaction between people and the environment. Tourists and residents can travel through different functional areas to experience different cultural atmosphere and activities, thus enriching their cultural experience. At the same time, this kind of communication and interaction can also help to promote the cultural innovation and development of the block, and inject new vitality into the sustainable development of the block.

The scatter plot and linear fit of the relationship between functional facility elements and cultural experience scenes are shown in Figure 5.10.

5.2 Scene planning and improvement strategy of historical and cultural blocks

According to the analysis results of the influence of block space environment elements on different types of scenes, this section tries to put forward the scene planning promotion strategy historical and cultural blocks from five aspects of overall layout,

facade design, historical elements, facility construction and activity publicity, and uses relevant cases of other historical and cultural blocks to support them.

5.2.1 Facilitated and differentiated overall layout of the block

In the previous analysis of the influence of block traffic elements on different scene types, the differentiated influence of street accessibility on life continuation scene and market consumption scene is discussed. The results show that the accessibility of streets has a significant effect in both scenes, but their correlation shows a completely opposite trend. At the same time, there is a potential for shaping cultural experience scenes to break through the constraints of accessibility. This phenomenon reveals the complex correlation between the traffic conditions and the scene construction in the historical and cultural blocks.

Relatively quiet, private and moderately accessible streets are more conducive to shaping the continuation of life scenes. In such an environment, residents can enjoy a comfortable living atmosphere. The spatial scale of the streets, the comfort of the walking environment and the configuration of the surrounding facilities all properly meet their daily needs. Too busy or inconvenient streets may not be conducive to the creation of the continuation scene of life, because they may destroy the quiet atmosphere of the streets and affect the quality of life of residents.

In contrast, the streets with convenient transportation and high accessibility are more conducive to shaping the market consumption scene. These streets and alleys usually have rich commercial facilities and human flow, providing convenient conditions for various commercial activities. In such an environment, the prosperity of the market culture and the strong commercial atmosphere complement each other, and jointly build a vibrant consumption scene. However, if the accessibility of the streets is too low, it may limit the development of commercial activities and lead to the lack of vitality of the market consumption scene.

Therefore, different traffic conditions provide favorable conditions for constructing specific types of scenarios. In order to fully realize the potential of the block and meet the diversified needs, we need to rationally arrange different types of facilities on the streets with different accessibility. By optimizing the traffic layout, improving the accessibility of streets and lanes and rationally allocating facilities and resources, new vitality can be injected into the sustainable development of the historical

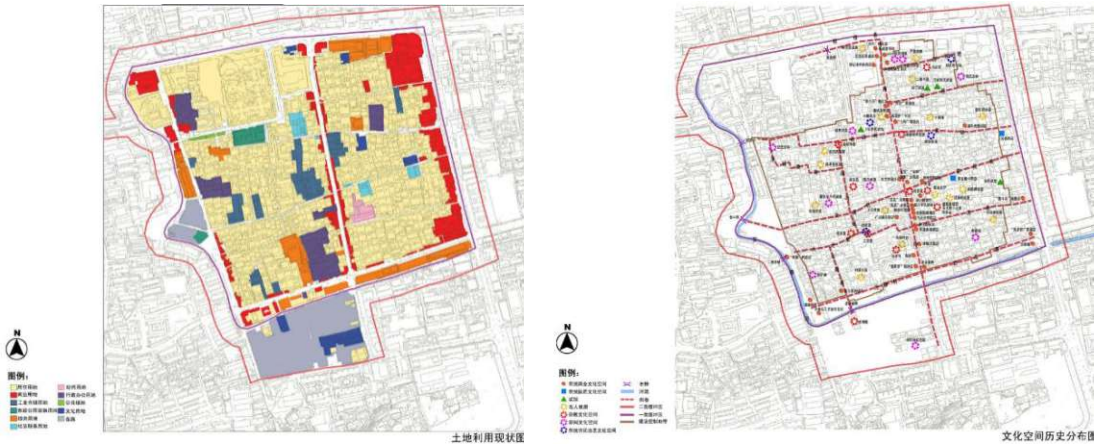
and cultural blocks, and the harmonious coexistence of the life continuation scene and the market consumption scene can be realized. In view of this rule, this paper proposes the following planning strategy:

(1) Plan the main functions of streets and alleys according to the accessibility. According to the accessibility characteristics of the streets and alleys, the streets and alleys are divided into high accessibility area, moderate accessibility area and low accessibility area. The high accessibility area is suitable for the layout of commercial facilities to form the market consumption scene; the moderate accessibility area can arrange the service facilities needed by residents in daily life to create the life continuation scene; the low accessibility area can be used as a cultural display and leisure space to retain the historical context and quiet atmosphere of the block.

(2) Improve the quality of the walking environment. Focus on the construction of walking environment, by improving the walking facilities, optimize the layout of walking space, improve the walking safety and other ways, improve the walking accessibility of streets and lanes. At the same time, cultural elements and art installations will be integrated into the walking environment to enrich the walking experience and enhance the cultural attraction of the block.

(3) combined with accessibility allocation of facility resources. According to the accessibility and functional positioning of the streets and alleys, we can have a reasonable allocation of facilities and resources. Increase the construction of commercial facilities and commercial atmosphere in commercial areas; strengthen the construction of living service facilities in living areas to meet the daily needs of residents; in cultural areas, focus on the layout of cultural facilities and the organization of cultural activities to enhance the cultural connotation of the block.

Take the Sanfangqixiang of Fuzhou as an example. The Sanfangqixiang of Fuzhou is a famous historical and cultural city in China. They are composed of three squares (Yijin Square, Wenru Square, and Guanglu Square) and seven lanes (Yangqiao Lane, Langguan Lane, Tower Lane, Huang Lane, Anmin Lane, Gong Lane and Ji Lane), which are important carriers of Fuzhou's history and culture. The block has preserved a large number of ancient buildings, traditional dwellings and historical and cultural relics of the Ming and Qing dynasties, reflecting the profound historical and cultural deposits of Fuzhou.



011 Figure 5.12 Facilities Layout of Sanfangqixiang

The high accessibility area of Sanfangqixiang, such as Nanhou Street, as the main commercial block, has many commercial facilities, attracting a large number of tourists and citizens, and forming a bustling market consumption scene. Here, visitors can taste Fuzhou's traditional snacks and buy Fuzhou characteristic handicrafts. The moderate accessibility area is mainly distributed in the side lanes and around the residential houses. These areas provide residents with service facilities needed for daily life, such as small supermarkets, restaurants, clinics, etc., creating a strong scene of life continuation. Residents enjoy convenient living services in these areas, while also maintaining close ties with the ancient blocks. The low accessibility area is some relatively hidden, quiet streets. These areas, as cultural displays and leisure Spaces, retain the historical context and quiet atmosphere of the neighborhood. Here, visitors can enjoy the ancient architectural style and feel the historical charm of Fuzhou. At the same time, some cultural activities are also held in these areas, such as traditional opera performances, painting and calligraphy exhibitions, which enhance the cultural connotation of the blocks.

In order to improve the quality of walking environment, Sanfangqixiang focus on the improvement of walking facilities and the optimization of walking space. The walking path in the block is spacious and flat, with perfect walking facilities, providing a good walking environment for tourists and residents. At the same time, the block also holds cultural activities and art exhibitions to enrich the walking experience and enhance the cultural attraction of the block.

Through the reasonable layout of facilities combined with the street accessibility, the planning of Sanfangqixiang not only retains the style of the ancient block, but also

injects modern elements, which gives them new vitality and provide rich and diverse cultural experience for tourists and residents. By optimizing the spatial layout and business format configuration, both local residents and tourists can find a suitable way of consumption and leisure here. This mode of host and guest sharing not only enhances the attraction of the block, but also promotes the development of the local economy and the spread of culture.

5.2.2 Styled and characteristic street facade design

In the previous analysis of the influence of the traditional spatial elements of street space on different scene types, it is concluded that the coordination of street facade has a significant impact on both the market consumption scene and the cultural experience scene, but the correlation between the two is opposite. This shows that in the historical and cultural blocks, the construction of the building street view facade not only needs to maintain the historical style of people's feelings, but also needs a certain richness to bring stimulation, to provide consumers with a sense of novelty.

For the market consumption scene, the street view facade needs not only the continuation of history and the maintenance of tradition, but also requires the rich diversity and visual impact of the facade. Moderate facade changes, unique decorative elements and novel design techniques can bring novelty and stimulation to consumers, so as to attract their consumption behavior and increase the shopping experience.

However, in the cultural experience scene, the coordination of the streetscape facade is more reflected in a harmonious and unified atmosphere. This coordination requires the building facade to be relatively consistent in style, color, material and other aspects, in order to create a traditional and friendly visual feeling. When tourists or citizens walk in such streets, they can feel the strong historical and cultural atmosphere, as if they are in a world full of stories and memories. This harmonious street scene facade not only provides a unique background for the cultural experience scene, but also attracts them to stop and watch, experience deeply, and enhance their cultural identity.

Therefore, it is necessary to find a balance in the construction of street facades of historical and cultural blocks. It should not only maintain the continuity and unity of historical features and provide consumers with a space full of historical charm, but also pay attention to the diversity and innovation of the facade to bring freshness and

excitement to consumers. Through careful design and planning, the architectural street view facade of the historical and cultural blocks can become a strong support for different scene types, bringing more colorful cultural experience to residents and tourists. In view of this rule, this paper proposes the following planning strategy:

(1) Keep the facade style unified. Inside the historical and cultural blocks, the planning should emphasize the unified style of the building facade. One or several representative traditional architectural styles, such as the Ming and Qing Dynasties style and the Republic of China style, can be selected as the facade style tone of the area, to ensure the harmony and unity of the overall visual effect of the streets and alleys.

(2) Use similar colors and materials. In the choice of color and material, we should pursue consistency. Traditional color collocation can be used, such as gray, brick red, as well as materials with a sense of history, such as blue brick, stone, to enhance the historical atmosphere and cultural atmosphere of the streets and alleys.

(3) Cultural symbols are integrated into the details to improve the richness. While maintaining the unity of the facade, we should also pay attention to the treatment of details. Through decorative elements, door and window styles, eaves and other details, we can add the interest and cultural charm of the streets and alleys. Through carving, painting and symbols, we can break the simplicity, moderately enhance the impact and attraction of the facade, and show the unique charm and story of the historical and cultural blocks

Take the Kuanzhai Lane historical and cultural block in Chengdu as an example. As a landmark historical and cultural block in Chengdu, Kuanzhai Lane attracts a large number of tourists with its unique architectural style and rich cultural heritage. In the planning process, planners skillfully find the balance between the continuity of historical features and the diversity of facades.

012 Figure 5.13 Elevation design with cultural symbols in the KuanZhai Lane in Chengdu

First of all, in maintaining the unity of the facade style, the KuanZhai Lane chose the typical western Sichuan architectural style as the dominant. The building facade of the whole block adopts the traditional sloping roof, blue bricks and gray tiles and other elements, creating a simple and elegant atmosphere. This unified facade style makes the whole block visually present a harmonious and unified effect, providing tourists with a space full of historical charm. At the same time, KuanZhai Lane also do very well in the use of similar colors and materials. The building facade of the block mainly adopts gray and brick red as the main colors, which not only echo the traditional buildings in the western Sichuan area, but also enhance the historical and cultural atmosphere of the block. In addition, planners also choose materials with a sense of history, such as blue bricks, stone, etc., to make the building facade more texture and characteristics.

However, KuanZhai Lane does not ignore the diversity and innovation of the unity of facade style. In detail processing, planners Incorporate rich cultural symbols and decorative elements. Through beautifully carved doors and Windows, unique eaves and drawing regional characteristic patterns, each building facade is unique, bringing a sense of freshness and excitement to tourists. The KuanZhai Lane also pay attention to the sense of hierarchy and space of the facade. Through different heights of buildings, well-arranged layout and clever green configuration, the facade of the block is more rich. This design not only improves the overall visual effect of the block, but also provides more space for visitors to watch and experience.

Through careful design and planning, the historical and cultural block has successfully realized the balance between the continuity of historical features and the diversity of facades. The number of tourists in the block has increased significantly, and the tourist satisfaction is also very high. The popularity of Kuanzhai Lane has been continuously improved, and it has become a popular tourism node and an important case of the renewal of historical and cultural blocks in China.

5.2.3 Diversified and display utilization of historical elements

In the previous analysis of the influence of historical elements on different scene types, it is concluded that historical elements can have a significant positive impact on both life continuation scene and cultural experience scene. The proportion of buildings with historical features promotes the cultural experience scene, and the density of

historical environment elements has a promoting effect on the life continuation scene.

Specifically, as an important part of historical elements, the proportion of historical buildings plays a significant role in promoting the construction of cultural experience scenes. With their unique style, exquisite details and profound cultural heritage, these buildings provide visitors with an immersive historical and cultural experience. Walking between these ancient streets, tourists can personally feel the breath of history, appreciate the charm of traditional culture, so as to have a deeper understanding of and feel the local history and culture.

The historical environment element is another important aspect of the historical features of the block, which mainly refers to the natural and cultural landscapes such as ancient trees, ancient towers and ancient Bridges that have experienced the vicissitudes of life in the block. These historical environment elements add a strong historical charm and cultural heritage to the life continuation scene. They witness the change and development of the block and are an indispensable part of the daily life of local residents. The improvement of the density of historical environmental elements has a significant role in promoting the life continuation scene. This will not only help the local residents to better inherit and continue the traditional culture in their daily life, but also can attract more tourists to visit and experience. This benign interaction and cycle further promotes the cultural prosperity and social development of the block.

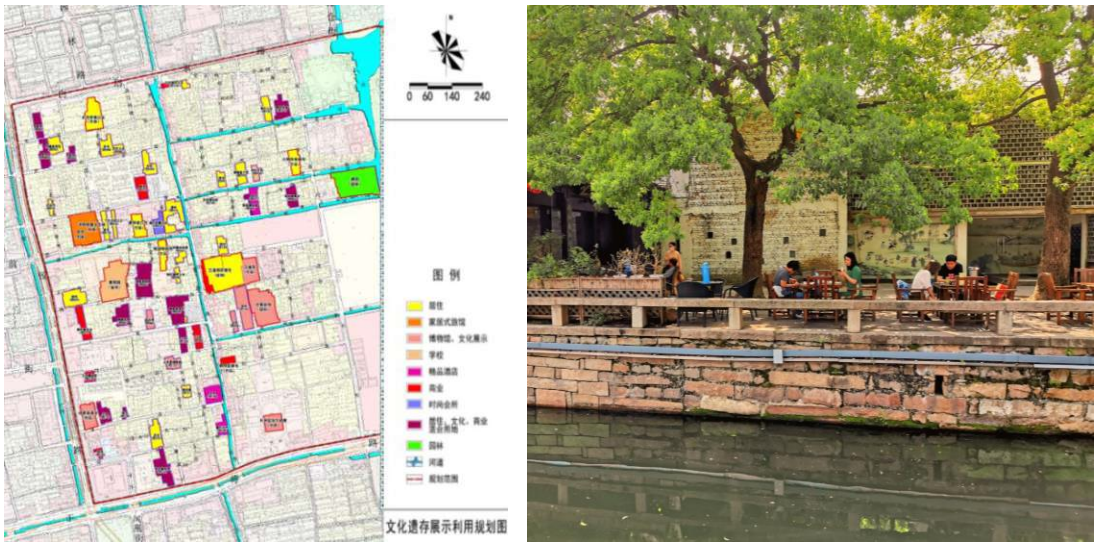
In view of the influence law of historical elements on the scene, this paper presents the following planning strategy:

(1) Protection and activation of historical environmental elements. First of all, strict protection policies and management measures should be formulated for historical environmental elements such as ancient towers and Bridges to ensure that they are effectively protected and prevent man-made damage and natural damage. Communities can also strengthen daily maintenance, regular inspection and maintenance of historical environmental elements, to ensure that they remain in good condition and prolong their service life. In terms of planning and design, combined with the needs of modern life, the historical environment elements are activated and utilized, such as setting up leisure seats and building small parks, so as to integrate them into modern life and provide a pleasant living environment for residents.

(2) To enhance the cultural display of historical buildings. Dig out the stories behind the historical buildings, and use various ways to show the cultural connotation of these historical buildings to the public. Special exhibitions can be held to present the

history, culture and art of the buildings in the form of pictures, words and models, so that visitors can intuitively feel the charm of these buildings. We can also invite experts and scholars to conduct in-depth interpretation and sharing, so as to provide visitors with professional historical knowledge and cultural vision. In addition, modern technology can also combine means, such as virtual reality and augmented reality, to provide an immersive cultural experience for the public, so that they can feel like they travel through time and space to feel the unique charm of historical buildings.

Take the Pingjiang Road Historical and Cultural Block in Suzhou as an example. Pingjiang Road is located in Gusu District of Suzhou City. It is a historical street in the ancient city of Suzhou and one of the best preserved ancient blocks in Suzhou. There are many historical buildings here, most of which maintain the architectural style of the Ming and Qing Dynasties, with white walls and black tiles and cornices, showing the unique charm of Jiangnan water town. These buildings are not only the witness of history, but also the carrier of culture. Each building carries a profound historical and cultural connotation.



013 Figure 5.14 Utilization of historical elements in Pingjiang Historical and Cultural Block

In the protection and development of pingjiang Road Historical and cultural Block, the local government attaches great importance to the protection of buildings with historical features. They have formulated a detailed protection plan, defined the scope and measures of protection, and carried out fine repair and maintenance of every historic building. At the same time, the government leads the market subjects and residents to participate in the activation and utilization of ancient buildings and old houses. The protection and planning of the historical and cultural blocks specifies the

display and utilization attributes of each style building in detail. At the same time, they have also introduced modern technology to conduct digital protection and environmental monitoring of the buildings to ensure the integrity and authenticity of these historic buildings.

In addition to protecting the historical buildings themselves, Pingjiang Road Historical and Cultural Block also pays attention to the diversified use of historical environmental elements. Ancient and famous trees, ancient Wells, ancient Bridges and other historical environmental elements in the block have been properly protected and utilized. For example, an ancient tree in the block is surrounded by seats for tourists to rest; an ancient well is preserved and equipped with explanatory signs to let visitors understand the historical and cultural value of the ancient well; an ancient bridge becomes a landmark attraction in the block, attracting a large number of tourists to view and take photos. In addition, Pingjiang Road Historical and Cultural Block also holds various cultural activities, such as Suzhou Pingtan performance and traditional handicraft exhibition, to fully explore and utilize the cultural value of historical environmental elements. These activities not only enrich the cultural experience of tourists, but also enhance the cultural taste and attraction of the block.

5.2.4 Diversified and moderately construction of functional facilities

In the previous analysis of the correlation between the indicators of block functional facilities and different scene types, it is found that life service facilities, commercial store facilities and cultural experience facilities each play a positive role in promoting the corresponding scenes. The improvement of life service facilities provides convenient daily service for residents and improves the livability of the life continuation scene; the richness of commercial store facilities injects vitality into the market consumption scene and meets the shopping needs of residents and tourists; while the layout of cultural experience facilities further enriches the connotation of cultural experience scenes and enhances the cultural taste of the block. However, in the process of correlation analysis, it is also found that the two indicators of commercial store facility density and the mixture degree of functional facilities show opposite correlation in the market consumption scene and cultural experience scene.

In the blocks with a high density of commercial facilities, the market consumption scene often presents a prosperous and active trend. Due to the large

number of commercial shops, a wide variety of goods, attracting a large number of consumers to come to shopping and leisure, making the market consumption atmosphere strong. However, when the density of commercial facilities is too high, it may squeeze the cultural experience space, leading to a decline in the quality of the cultural experience scenes. Too many commercial facilities make the block too noisy, which makes the cultural experience relatively monotonous and commercial. The lack of quiet cultural atmosphere weakens its original cultural charm, and thus affects the depth and quality of the cultural experience.

Relatively speaking, when the functional mixing degree of the block is high, the cultural experience scene can often be better displayed. Functional mixing means that different types of facilities interweave and coexist in the block, which helps to form a diverse and rich cultural experience environment. In such blocks, tourists and residents can enjoy a variety of cultural experiences, including art, history and entertainment, which enhances the attraction and depth of the cultural experience scene. However, the high degree of functional mixing may also bring some negative effects, especially in the market consumption scene. Due to the mixing of multiple functional facilities, the increase of the complexity and diversity of the consumption environment may lead to, which makes the characteristics of the market consumption scene not prominent enough, and it is difficult for consumers to quickly locate the commercial services they need. This may, to some extent, reduce the activity and attractiveness of the market consumption scene.

Therefore, in the planning and development of historical and cultural blocks, it is particularly important to promote the construction of diversified and moderate construction of all kinds of facilities. Planners should rationally allocate the proportion of commercial facilities and cultural experience facilities according to the actual situation and positioning of the block, so as to not only meet the consumption needs of citizens and tourists, but also protect the purity of cultural experience space. At the same time, we should also pay attention to the cultivation of diversified consumption, through innovative business models and enrich the consumption formats, to create distinctive market consumption scenes, and enhance the overall attraction and competitiveness of the block. In view of this rule, this paper proposes the following planning strategy:

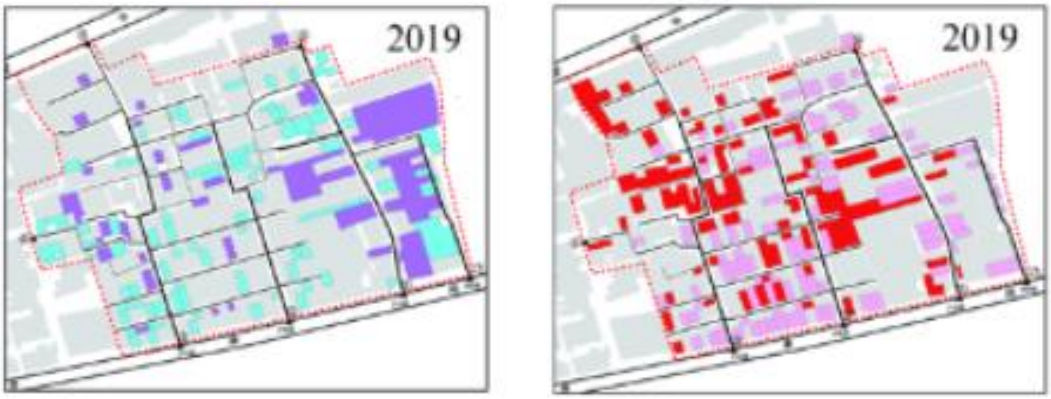
(1) Mixing of moderate. On the basis of maintaining the characteristics of the historical and cultural blocks, diversified functional facilities, such as cafes, bookstores and art studios, should be appropriately introduced to enrich the cultural experience

scenes. Avoid the excessive mixing of functional facilities leading to the ambiguity of consumption scenes in the market, and ensure the orderly distribution of all kinds of facilities in the block, so as to facilitate the identification and use of citizens and tourists.

(2) Cultural space maintains a certain degree of independence. Key protection of historical relics and historical buildings in historical and cultural blocks to ensure that they are not disturbed by commercial development. Special exhibition Spaces and places for cultural activities will be set up in the cultural experience area to improve the quality and attraction of the cultural experience scenes.

(3) The cultivation of characteristic business model. Businesses are encouraged to carry out characteristic operations in the historical and cultural streets, such as traditional handicrafts and local characteristic food, so as to create a unique market consumption scene. On the other hand, reduce the layout of conventional stores without local characteristics, to avoid excessive homogenization of commercial facilities.

Taking Shanghai Tianzifang, historical and cultural block as an example, Shanghai Tianzifang, as a block full of historical charm and modern flavor, fully demonstrates the importance of promoting diversified and moderate facilities construction in the planning and development of historical and cultural blocks.



014 Figure 5.15 Configuration of diverse and mixed facilities in Tianzifang[67]

Tianzifang retains many Shikumen buildings and alleys, and these historical buildings have become the unique cultural symbols of the block. In the planning process, the planner fully considered the actual situation and positioning of the block, and rationally allocated the proportion of commercial facilities and cultural experience facilities. There are not only cultural experience facilities such as traditional handicraft shops and art galleries, as well as commercial facilities such as cafes and special snack bars, which meet the diverse needs of citizens and tourists.

The diversified layout of commercial facilities not only enriches the market consumption scene of the block, but also provides more consumption choices for citizens and tourists. Visitors can enjoy the traditional craft, buy special souvenirs, and enjoy a modern leisure and consumption experience. This innovation of business model makes Tianzifang have a modern commercial atmosphere while maintaining its historical and cultural characteristics. At the same time, the moderate construction of the cultural experience facilities also protects the purity of the cultural experience space. The art galleries, exhibition halls and other cultural Spaces in Tianzifang provide opportunities for citizens and tourists to have an in-depth understanding of Shanghai's history, culture and art. These cultural facilities and commercial facilities set off each other, and together constitute the unique cultural atmosphere of Tianzifang.

In addition, Tianzifang also pays attention to cultivating diversified consumption, creating distinctive market consumption scenes by introducing creative industries and holding cultural and artistic activities. These activities not only attract a large number of tourists to experience, but also bring more commercial opportunities and development space for the block.

5.2.5 Localized and creative activity IP planning

According to the core view of the scene theory, the five elements of the scene —— neighborhood, Amenities, people, activities, and cultural values, together constitute the complete framework of the urban space scene. From the perspective of urban planning implementation and spatial environment construction, the improvement strategy of scene planning is elaborated in detail. On this basis, an important strategy is proposed for people, activities and values from the concept of urban planning and soft construction.

People tend to choose urban space scenes that coincide with their values and actively participate in cultural activities. These activities not only enrich the spiritual life of the citizens, but also provide strong support for the development of the local economy and facilities. As one of the elements of the scene, the characteristic activities play a key role in connecting the physical space architecture with the crowd. By holding various cultural activities with local characteristics, more people can be attracted to gather together and promote the vitality and prosperity of the block. Moreover, cultural values play an important role in shaping urban IP. Through the in-depth excavation and

publicity of the historical and cultural block, combined with the unique IP building, the public's awareness and evaluation of the block can be effectively enhanced. The dissemination and promotion of this cultural value can not only help to enhance the cultural soft power of the block, but also promote the inheritance and innovation of urban culture.

Based on the above deep understanding and application of scene theory, this paper further proposes the following planning strategies:

(1) Clarify population preferences and encourage multiple participation. According to the people elements, a detailed crowd analysis is needed to be carried out in the planning process to clarify the needs and preferences of the target audience. By designing space scenes in line with the values of different groups of people, providing a variety of facilities, such as public rest areas, art installations, etc., to meet the spiritual and cultural needs of different groups of people. In the process of the protection and activation of historical and cultural blocks, the government should lead and encourage the public to participate comprehensively, including government departments, enterprises, institutions, community organizations, cultural groups, etc. We should attach importance to the participation and feedback of community residents, form a protection mechanism with the participation of the government, enterprises and community residents, and realize the overall protection and utilization of historical and cultural blocks. At the same time, attention should be paid to strengthening the publicity and education of the public, enhance their awareness and participation in the protection of historical and cultural blocks, make them become the guardians and inheritors of historical and cultural heritages, and provide guarantee for the sustainable development and inheritance of the historical and cultural blocks.

(2) Use traditional activities to increase activity planning. According to the activity elements, a series of cultural activities with local characteristics can be planned, including local traditional festival activities, such as festival celebrations, artistic performances, food festivals, etc. Festival activities are the carrier of cultural inheritance. By holding traditional festivals, cultural performances and folk activities, we can inherit and carry forward the cultural traditions and values of the historical district, and enhance the sense of identity and belonging of the historical and cultural blocks. Characteristic activities can also be exhibition and exchange activities initiated by artists, designers and other creative people to enrich the experience of tourists and residents, such as cultural workshops, historical guides, handicraft production, etc., or

activities organized by the continuation of life of local residents, such as periodic old book trading activities and antique calligraphy and painting appreciation activities in the Dongxinanyu historical and cultural block. These activities can not only attract tourists, but also enhance the sense of belonging of local residents.

(3) Combined with urban publicity to create IP and shape cultural values. As for the cultural value elements, in the planning, it is necessary to deeply explore the unique cultural value of the historical and cultural blocks, and integrate them into the planning and publicity of the blocks. By building a recognizable city IP, the cultural characteristics of the block will be transformed into a brand asset with market competitiveness. In recent years, the cultural and tourism department of Luoyang city has carried out the tourism activities of "the wind rises in Luoyang, Exploring the capital", transforming the publicity potential energy of the city brand into the development momentum of the cultural and tourism industry. At the same time, Luoyang also actively makes use of Internet communication such as Wechat and Tiktok, and strengthen the young expression of local values through video communication.

5.3 Summary of this chapter

Through the mathematical statistical analysis method assisted by SPSS, this chapter respectively analyzes the three scenes of life continuation, market consumption and cultural experience with the spatial environment elements of historical and cultural blocks. Finally, in the third and fourth sections of this chapter, the scene planning and promotion strategies applicable to historical and cultural blocks are summarized, and the universality and particularity of this conclusion are analyzed, in order to provide scientific guidance for the renewal and improvement of historical and cultural blocks.

Chapter 6 Conclusions and Outlook

6.1 Study Conclusion

The research work of this paper preliminarily discusses the protection and renewal of Chinese historical urban historical and cultural blocks from the perspective of scene theory. Through literature analysis, field research and data analysis, etc., a scene research method of historical and cultural blocks with universal significance is given. The conclusion is as follows:

(1) The significance of the scene perspective in the study of the protection and renewal of historical and cultural blocks. Based on the relevant literature review of the application of current scene theory in the field of urban planning, combined with the relevant literature review of various research dimensions of historical and cultural blocks in the field of urban planning, the necessity of the application of scene theory in historical and cultural blocks is analyzed. Scene theory provides a new perspective on studying historical and cultural blocks, emphasizing the understanding of the integrity and dynamics of the research object. Five elements of the scene —— Neighborhood, Amenities, People, Activities and Cultural Values cover many dimensions of many scholars' study of historical and cultural blocks. Therefore, the study of scenes is conducive to more accurately grasp the overall characteristics and development trends of historical and cultural blocks, and can help to coordinate the contradictions and conflicts between different dimensions and perspectives. At the same time, based on the protection elements of the historical and cultural blocks, this study selects the spatial environment elements of the historical and cultural blocks from the perspective of scene theory.

(2) Scene feature identification and performance measurement of historical and cultural blocks. Based on the research and analysis of the existing scene identification and measurement methods, combined with previous studies in the field of sociology and environmental behavior, a new scene identification and measurement method is constructed. By obtaining the network comment data of Dianping, using Nvivo software, the qualitative analysis method is adopted to study the scene elements and scene type characteristics of historical and cultural blocks, identify the externalized behaviors of various scenes, and take the occurrence amount of externalized behaviors

as the measurement standard of the scene. In the scene identification of the Dongxinanyu historical and cultural blocks, the scene is divided into three categories: life continuation scene, market consumption scene and cultural experience scene, and the externalized behaviors of various scenes are identified. At the same time, the scene characteristics of each street and lane can be divided into four categories, namely, cultural experience leading, market consumption leading, street space inactivated, and the combination of life and consumption.

(3) The influence of the spatial environment elements in the historical and cultural blocks on the scene. SPSS was used to analyze the correlation of scene performance results and spatial environment elements. Based on the evaluation results, the index factors affecting various scenes were selected, and the positive and negative influence and the strength degree of the factor were analyzed. The influence mechanism of this paper is analyzed from the perspective of urban planning and historical and cultural block protection. The results found that the influence factors of life continuation scene include Integration, Choice, aspect ratio, density of historical environment elements and life service facilities density; the influence factors of market consumption scene include Integration, Choice, facade coordination degree, density of commercial stores and mixing of functional facilities. The influence factors of cultural experience scenes include facade coordination degree, proportion of buildings with historical features, density of identification and guide facilities, density of commercial store facilities, density of cultural experience facilities and mixing degree of functional facilities.

(4) Scene planning and promotion strategy of historical and cultural blocks. By analyzing the differences of the influence of the same spatial environment factor on different types of scenes, five scene planning and improvement strategies for historical and cultural blocks are proposed. The results show that the accessibility index has an opposite impact on the market consumption scene and the continuation scene of life. Therefore, all kinds of facilities should be rationally arranged in combination with the accessibility of the streets and lanes. The facade coordination degree has an opposite impact on the market consumption scene and the cultural experience scene, so in the planning, we should pay attention to maintaining the style and moderately enrich the facade design. Historical elements have a positive impact on both the life continuation scene and the cultural experience scene, so the planning should pay attention to the display and diversified utilization of historical elements. The two indexes of

commercial facility density and the mixture degree of functional facilities have opposite effects on the market consumption scene and the cultural experience scene. Therefore, attention should be paid to the diversified and moderate allocation of various facilities in the planning. Starting from the constituent elements of the scene itself, the planning should pay attention to the planning of local activities and the combination of urban publicity activities.

6.2 Direction of further work

Although the research in this paper has achieved preliminary research results and conclusions, there are still some shortcomings in the aspects of the research object, research data and research analysis, which are briefly summarized as the following four points:

(1) In-depth research on the selection of spatial environment elements: From the perspective of scene theory, for historical and cultural blocks, through the combination of literature research and field measurement, in this study, four indicators and eleven factors are selected as indicators of spatial environment elements. However, limited by the technical level, the measurement method of some spatial environment elements has not yet been found, which affects the comprehensiveness of the study to some extent. The study has not yet involved the measurement of block intangible heritage such as local customs, production skills, festival celebrations, as well as socio-economic aspects and their impact on the scene. In addition, the study used density (1 / 100m) to measure the facility elements in the block, not considering the cultural value, scale and other characteristics of the facilities. Therefore, in the future research, we should further explore the influence indicators that can highlight the characteristics of historical and cultural blocks, and explore the appropriate measurement methods, in order to improve the study of block influence scenes. At the same time, we should combine the characteristics of the historical and cultural blocks, comprehensively consider the intangible heritage and social and economic factors, and comprehensively reveal its influence mechanism on the scene.

(2) The development study of the particularity of the research objects: In the empirical analysis of this study, the Dongxinanyu historical and cultural blocks is mainly selected as a case for measurement and verification. Although this block is representative to a certain extent, China is a vast territory, and the historical and cultural

blocks are influenced by regional culture, social economy and other factors, and their scene characteristics and appropriate planning strategies are different. Therefore, future studies should expand the scope of research subjects and select different geographical areas and different types of historical and cultural blocks for empirical research. In addition, cluster analysis of scene characteristics in these blocks can be conducted to reveal the commonalities and differences between different types of historical and cultural blocks, and provide richer empirical support for the application of scene theory in historical and cultural blocks.

(3) Expansion and refinement of study data sample size: During the scene measurement of this study, only 14:00-16:00 in the weekday afternoon were selected for data collection. Although this period is representative to a certain extent, it cannot fully reflect the all-weather and all-time scene characteristics of historical and cultural blocks. Therefore, in future studies, attempts should be made to expand the time range of data collection to cover scene data in different time periods, different seasons, and different weather conditions. In addition, it can also analyze the differences in the scene composition of daytime and night scenes, and on weekdays and weekends in historical and cultural blocks, so as to reveal the changes and space use characteristics of the block scenes in different periods, and provide strong support for the formulation of full-time scene planning strategies. At the same time, in this study, field statistics were used, and photos were assisted to identify scene externalization behavior. In this method, the expertise of the investigators themselves largely determines the type of externalized behavior. Therefore, the subjective judgment of the investigators is an influencing variable, which is both a characteristic and possibly a defect of this study. In fact, at the beginning of the research design, this study tried to use objective judgment methods such as computer vision services. However, in practice, it is found that some more complex photos and dynamic behaviors cannot be identified by the existing technologies. Therefore, in future studies, new technical means and auxiliary tools should be explored to improve the accuracy and efficiency of data collection and assist judgment from an objective perspective.

(4) Optimization and interpretive improvement of computational methods: In the analysis of the influence of different spatial environment elements on scenes in this study, the correlation analysis method in SPSS is mainly adopted to reveal the significance and strength of the correlation between the two elements, and try to interpret the connection between the two through relevant professional knowledge.

However, no regression analysis was conducted to show the causal relationship between the two patients. At the same time, this study does not involve the weight of the influence of various spatial environment indicators on various scenes. Therefore, in future studies, multiple research approaches can be adopted to perform regression on the study conclusions. First, more rigorous mathematical statistical methods, such as regression analysis and structural equation model, can be used to build scene-related multiple regression models to reveal the influence mechanism and relative importance of each element on the scene. Second, the practical verification method can be adopted to the scene planning and promotion strategy in the renewal planning of specific historical and cultural blocks, and the scientific conclusion can be explained by comparing the effect of updating and transformatio

REFERENCES

[1] Ullman, E.L. (1954). Amenities as a Factor in Regional Growth. Geographical Review, 44, 119.

[2] Terry Nichols Clark, The City as an Entertainment Machine, Lexington Brooks, A Division of Rowman & Littlefield Publishers. Inc, 2010.

[3] Terry Nichols Clark, "Making Culture into Magic: How Can It Bring Tourists and Residents?" International Review of Public Administration, Vol.12, No.1, 2007, pp.13-26.

[4] Terry Nichols Clark and Daniel Silver, The Theory of Scenes, Chicago: The Press of University of Chicago, 2013, pp.58-69.

[5] Merleau-Ponty M, Landes D, Carman T, et al. Phenomenology of perception [M]. Routledge, 2013.

[6] Hu Zhengfang. Environmental Psychology (Third Edition) [M] Beijing: China Architecture&Building Press, 2012

[7] Xu Xiaolin, Zhao Tie, Terry Clark. Scene Theory: Exploration and Inspiration of Cultural Dynamics in Regional Development [J] Foreign Social Sciences, 2012 (03): 101-106

[8] Terry N. Clark, Li Lu. The Concept and Analysis of Scene Theory: Implications for China from Multi country Research [J] Dongyue Lun Cong, 2017, 38 (01): 16-24

[9] Wu Jun, Xia Jianzhong, Terry Clark. Scene Theory and Urban Development: A New Theoretical Paradigm for Chicago School Urban Research [J] China Famous City, 2013 (12): 8-14

[10] Fu Caiwu, Hou Xueyan. Interpretation dimensions and scene design of contemporary rural public cultural spaces in China [J] Hundred Artists, 2016, 32 (06): 38-43

[11] Liu Dongchao. From the perspective of scene theory, Nanluoguxiang, Dongyue Lun Cong, 2017, 38 (01): 35-40

[12] Fan Yugang. The Value Dissemination of Cultural Scenarios and the Cultivation of Cultural Creativity: A Cultural Perspective on Urban Transformation and Development [J] Hunan Social Sciences, 2017, (02): 160-167

[13] Cao Zhikui, Chen Xueying, Wu Qianbo, et al. Research on Future Rural Construction Elements and Scene Types under the Framework of Scene Theory: A Case Study of Dalu Village, Tonglu County, Hangzhou City [J] Planner, 2022, 38 (12): 125-130

[14] Wu Jun, Zheng Hao. Research on Community Consumption Scenarios: Empirical Analysis Based on Youth Needs [J] Modern Urban Studies, 2021 (09): 36-42

[15] Zhang Lin, Huang Meiling, Yang Yi. Research on the Cultural Intervention Path for the Creation and Development of Characteristic Towns from the Perspective of Scenarios: A Qualitative Comparative Analysis of Fuzzy Sets Based on 33 Samples from Sichuan and Chongqing [J] Fujian Forum

(Humanities and Social Sciences Edition), 2020, (10): 88-97

[16] Cheng Yuning. Research on Perception of Historical Urban Landscape Consumption Space Based on Scene Theory [J] Chinese Garden, 2021,37 (03): 56-61

[17] Tang Juan, Wang Degen, Wang Li. Cultural Value Identification of Historical and Cultural Blocks Based on Scene Theory: A Case Study of Pingjiang Road in Suzhou [J] China Ecotourism, 2023, 13 (01): 78-94

[18] Zhao Wei, Han Tengfei, Li Chunling. The Local Application of Scene Theory in Chengdu Urban Community Renewal: A Case Study of Wangping Community [J] Shanghai Urban Planning, 2021, (05): 38-43

[19] Meng Dancheng, Xu Leiqing. Creating Healthy Communities Based on Scene Theory [J] Southern Architecture, 2021, (03): 36-44

[20] Li Heping, Jin Hong, Terry N. Clark, et al. Scene theory and its application in the protection and renewal of historical towns in China [J] Journal of Urban Planning, 2022, (03): 102-110

[21] Chen Bo, Lin Xinyu. Analysis of the Patterns and Characteristics of Cultural Scenes in Chinese Cities: An Empirical Study Based on 31 Cultural Comfortable Objects in Cities [J]. Chinese Soft Science, 2020 (11): 71-86

[22] Fu Caiwu, Wang Yifan. Research on Urban Nighttime Cultural and Tourism Consumption Space from the Perspective of Scene: A Perspective Based on Changsha Super Culture and Friendship Cultural Scene [J] Journal of Wuhan University (Philosophy and Social Sciences Edition), 2021, 74 (06): 58-70

[23] Li Lin, Li Shuwei, Yan Yifang. The Protection and Renewal of Urban Historical and Cultural Blocks from the Perspective of Scene Theory [J] Shanghai Urban Management, 2019, 28 (01): 7-13

[24] Qi Ji, Lu Zixin. Research on Innovative Paths for High Quality Development of Urban Nighttime Tourism Scenarios [J] Modern Urban Studies, 2022, (10): 16-22+31

[25] Zhao Wanmin, Wu Siyu, Yang Guang. Exploration of Scene based Renovation Strategies for Public Spaces in Old Residential Areas in Chongqing [J] Planner, 2021,37 (17): 38-44

[26] Chen Bo, Hou Xueyan. Public Cultural Space and Cultural Participation: An Empirical Study Based on Cultural Scene Theory [J] Hunan Social Sciences, 2017, (02): 168-174

[27] Shao Juan. Construction of Public Reading Space in Physical Bookstores from the Perspective of Scene Theory [J] Technology and Publishing, 2019 (08): 31-35

[28] He Yuzhen, Lin Kunyong. The Transformation of Chicago City in the United States and the Manifestation and Inspiration of Its Cultural Power [J] City, 2015 (02): 70-74

[29] Li Ling. Research on the Impact of Rural Cultural Tourism Integration on Tourist Satisfaction: Empirical Analysis Based on Scene Theory [J] Technical Economics and Management Research, 2021, (04): 100-104

[30] Gaiqi. Construction of Urban Youth Public Cultural Space from the Perspective of Scene Theory: A Case Study of Beijing 706 Youth Space [J] Dongyue Lun Cong, 2017, 38 (07): 72-80

[31] Wang Ying. Research and Evaluation on the Implementation Status of Protection and Renewal of Historical Blocks [D] Southeast University, 2015

[32] Ruan Yisan, Gu Xiaowei. Analysis of the Practice Mode of Protecting Historical Blocks in China [J] Journal of Tongji University (Social Sciences Edition), 2004, (05): 1-6

[33] Xia Jian, Wang Yong. From Reset to Rebirth: Protecting the Authenticity of Life in Residential Historical and Cultural Blocks [J] Urban Development Research, 2010,17 (02): 134-139

[34] Li Bin. The Environmental Behavior Theory and Its Expansion in Environmental Behavior Studies [J] Journal of Architecture, 2008, (02): 30-33

[35] Hu Zhengfan. Environmental Psychology and Environment Behavior Research [J] World Architecture, 1983, (03): 61-66

[36] Zhu Meng, Chen Jinfu, Guo Manli, et al. Perception Signal Emotion: Exploration of Human Scale Spatial Perception Measurement Based on Physiological Signals [J] International Urban Planning, 2023, 38 (06): 19-28

[37] Gu Zhixin, Lu Minghua, Zhang Ning. Research on Nighttime Tourism Activities in Leisure Blocks Based on Behavioral Annotation Method [J] Regional Research and Development, 2016,35 (03): 86-91

[38] Wu Haowen. Research on the spatiotemporal distribution and environmental behavior of park users based on behavior annotation method [D] Zhejiang University, 2013

[39] Lu Min, Tang Yuqiu, Tao Zhuomin. Research on Collective Memory of Residents in Historical Blocks Based on Cognitive Mapping Method: A Case Study of Qingguoxiang Historical Block in Changzhou [J] Modern Urban Studies, 2016, (03): 127-132

[40] Wang De, Zhang Yun. Research on Shanghai Street Spatial Perception Based on Semantic Differentiation Method [J] Journal of Tongji University (Natural Science Edition), 2011, 39 (07): 1000-1006

[41] Han Xiao, Zheng Zhiyuan. Research on the spatiotemporal characteristics of consumer behavior in cross-border composite bookstores based on SD method: a case study of Xixifu Bookstore in Hefei [J] Urban Architecture, 2019,16 (06): 47-49

[42] Chen Zhongguang, Xu Jiangang, Jiang Haibing. Research on Multi scale Spatial Analysis of Historical Blocks Based on Spatial Syntax: A Case Study of Sanfang Qixiang Historical Block in Fuzhou [J] Urban Planning, 2009,33 (08): 92-96

[43] Zhou Jian, Chen Yabin. The Application of Typological Thinking in the Protection and Renewal of Historical Blocks: Taking the Urban Design of Fangbang Middle Road Block in Shanghai's Old Town as an Example [J] Journal of Urban Planning, 2007, (01): 61-65

[44] Xiao Jing, Li Heping, Cao Ke. Value guided protection and development of historical and cultural districts [J] Urban Development Research, 2019,26 (04): 87-94+2+37

[45] Yu Hongxia, Luan Xiaohui. Research on the Value Evaluation and Sustainable Development Strategies of Qingdao Historical and Cultural Blocks [J] Urban Planning, 2014, 38 (03): 65-69

[46] Wu Xinyan. Research on the Form Value Evaluation System of Historical and Cultural Blocks [D] South China University of Technology, 2014

[47] Shen Suyan, Yin Lijie. Suitability Evaluation of Tourism Development in Historical and Cultural Blocks: A Case Study of Nanjing City [J] Urban Issues, 2014, (09): 48-53

[48] Wang Piao. Research on the Coupling and Coordination Degree of Historical Block Protection and Urban Tourism Development [D]. Chongqing University, 2017

[49] Zhou Qian, Liu Guiwen, Ma Yu, et al. A Study on the Commercial Suitability of Historical and Cultural Blocks Based on Cognitive Evaluation - Taking Chongqing Ciqikou as an Example [J] Urban Development Research, 2018, 25 (06): 175-180

[50] Liao Renjing, Li Qian, Zhang Jie, et al. A Study on the Perceived Authenticity of Urban Historical Blocks by Recreation Users: A Case Study of Confucius Temple in Nanjing [J] Tourism Journal, 2009, 24 (01): 55-60

[51] Gao Jun, Han Dong. Research on the Image of Urban Historical Blocks Based on Content Analysis Method: Taking the Hengshan Road Fuxing Road Historical Block in Shanghai as an Example [J] Tourism Science, 2014, 28 (06): 1-12

[52] Cui Xu, Zhang Lingfei, Wang Yinuo. Research on the Evaluation of the Charm of Historical Block Space: Factor Selection and System Construction [J] Huazhong Architecture, 2018, 36 (08): 6-8

[53] Zhang Fang. A Conservation and Renewal Strategy for Historical Blocks Guided by the Creation of Local Identity: A Case Study of the Shantang Street Historical Block in Suzhou [J] China Famous City, 2019, (06): 80-87

[54] Liao Hui, Feng Wenhan, Zhao Jingwei. Quantitative Evaluation and Optimization Strategies for the Vitality of Residential Historical and Cultural Blocks: A Case Study of Dabao Island in Qingdao City [J] Shanghai Urban Management, 2017, 26 (01): 75-78

[55] Mao Zhirui, Chen Xiaokui, Xiang Zhenhai, et al. A Study on the Measurement of Vitality and Influencing Factors of Historical Street Blocks: A Case Study of the Wenming Street Historical Street Block in Kunming City [J] Southern Architecture, 2021, (04): 54-61

[56] Zhang Yuyang, Yang Changming, Qi Ling. Evaluation of Street Vitality and Influencing Factors in Historical Blocks: A Case Study of Shichahai Historical Block [J] Chinese Garden, 2019,35 (03): 106-111

[57] Lu Tian. Exploring the Revitalization of Functional Spaces in Historical Regions from the

Perspective of Vitality Creation [D] Southeast University, 2016

[58] Wang Jiangbo, Cheng Zhe, Liu Qingqing, et al. Preliminary Exploration of Protection and Renewal Strategies for Residential Historical Blocks from the Perspective of Property Rights Economics [J] Anhui Architecture, 2017, 24 (03): 17-20. DOI: 10.16330/j.cnki. 1007-7359.2017.03.006

[59] Wang Xue The Renewal Mechanism of Historical Blocks Based on Actor Network Theory [J] Planner, 2018, 34 (09): 111-116

[60] Sun Licheng. Research on Community Building Strategies from the Perspective of Actor Network Theory [D] Central Academy of Fine Arts, 2020

[61] Zhou Yang. Research on the Renewal Strategy of Beijing Historical Blocks from the Perspective of Social Space [D] Beijing Jianzhu University, 2022

[62] Ding Qi, Zhu Fangyu, Liang Jian. Protection and Renewal Strategies of Historical and Cultural Blocks under Property Rights Orientation: Taking the Urban Renewal Design of Yanshou Street in Beijing as an Example [J] China Famous City, 2021,35 (09): 36-42

[63] Wang Mingfeng, Zhou Yuan. The Production and Evolution of Urban Cultural and Creative Tourism Space from the Perspective of Power Space: A Case Study of Tianzifang [J] Shanghai Geographic Research, 2022,41 (02): 373-389

[64] Wu Fenglin. Annual Report on Leisure Development in China 2023-2024 [R] Beijing: China Tourism Research Institute, 2024

[65] Liu Lijun, Wang Yanzhou. Research on the Classification of Historical and Cultural Blocks [J] Journal of Tianjin Chengjian University, 2016,22 (03): 163-169

[66] Xiong Bingchun. A Preliminary Discussion on Qualitative Research Methods: Exploration from a Social Gender Perspective [J] Sociological Research, 2001, (05): 17-33+86-125

[67] Wang Mingfeng, Zhou Yuan. The Production and Evolution of Urban Cultural and Creative Tourism Space from the Perspective of Power Space: A Case Study of Tianzifang [J] Shanghai Geographic Research, 2022,41 (02): 373-389