A Study on the Environmental Quality of Lingnan Traditional Commercial Streets Based on Comfort Evaluation

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Abstract. As a place emphasizing the behavioral experience and inner feelings of shoppers, the overall comprehensive quality of the block environment affects the comfort level of its users. In the process of urban development, how to excavate the inherent environmental characteristics of traditional commercial streets and enhance the vitality of their sustainable development is key in the renovation of traditional blocks. This study constructs a comfort evaluation model for Lingnan traditional commercial streets through post-use evaluation and the use of the Analytic Hierarchy Process (AHP), exploring the multi-level environmental needs of users. This forms a more essential and comprehensive performance evaluation of traditional commercial streets, providing practical reference for the renovation of traditional blocks.

Keywords: Traditional Commercial Streets, Comfort Level, Analytic Hierarchy Process, Post-use Evaluation

1 Introduction

1.1 Type area

Lingnan region has a long-standing commercial tradition and a deep accumulation of commerce, with a considerable number of traditional commercial streets preserved. These streets, influenced by various factors such as social life, business models, cultural traditions, and geographical environment, have formed a unique urban landscape. Traditional commercial streets belong to the comprehensive category of commercial operations in urban roles, providing diverse consumer needs through mixed formats. In the process of integrating into modern social life, they face challenges from e-commerce and modern large-scale commercial entities to varying degrees. The comfort of the shopping environment often affects the overall quality of the commercial environment. With the development of architectural technology, contemporary commercial shopping environments have undergone qualitative improvements. How-

ever, it is important to examine whether the comprehensive comfort of traditional commercial spaces has been affected and whether they still remain competitive. Identifying the factors that influence users' comfort experiences is crucial in the current street revitalization efforts.

The original meaning of 'comfort' is 'amenity', and comfort research is based on the user's social role, psychological needs, and behavioral habits to study the user's subjective comprehensive feeling of the environment in terms of material and spiritual aspects [1]. Since the functions required by a commercial environment are diverse, unlike other types of buildings that are singular and certain. In addition to meeting necessary shopping needs, people also have multi-dimensional functional requirements such as entertainment and leisure, which are related to the block landscape, equipment, merchant quality, and municipal transportation facilities within the entire shopping environment [2]. The traditional commercial street belongs to the comprehensive commercial management category, and satisfies the diversified consumption needs of consumers with complex business forms. Similar to ordinary pedestrian shopping streets, traditional commercial streets also need to accommodate more shopping flow in a long period of time, and attract consumers to come and stay as much as possible through rich space, diversified formats and experiential shopping. However, the difference is that traditional commercial streets not only provide basic shopping functions, but also let users feel the traditional historical and cultural spirit in the tour, and obtain the corresponding place image. In addition to the convenience and amenity of the shopping environment, the psychological aspect of comfort also has a significant impact on the perception of history and tradition.

With the diversification of the overall shopping environment in society, people's shopping comfort standards are constantly adjusting and improving. As a place emphasizing the behavioral experience and inner feelings of shoppers, the overall comprehensive quality of the block environment affects the comfort level of its users. The subjective comfort judgment of users is affected by the difference of environment, goods, services and individuals to varying degrees, and people's consensus cognition of the comfort of specific shopping environment affects the realization of the overall commercial marketing intention of the block in a non-explicit way. The evaluation of comfort should be made with the help of corresponding quantitative analysis under limited and moderate objective constraints.

Based on this, this paper attempts to use built environment evaluation technology, with the help of comfort's examination of psychological impact factors, to explore the environmental elements that significantly affect the subjective comfort of users in the process of block activities in traditional commercial streets, thereby establishing a comfort evaluation model for the shopping environment of traditional commercial streets, providing beneficial references for improving the overall comprehensive performance of the traditional commercial street environment on both material and psychological levels.

2   Preliminary Preparation for the Comfort Study of Lingnan Traditional Blocks

2.1   Establishment of Research Scope

This study focuses on the specific environmental conditions and positioning of traditional commercial streets. It revolves around the evaluation of comfort in Lingnan traditional commercial streets, covering three environmental levels: material, social, and psychological. It explores the factors that have a significant impact on users' evaluation and perception of the overall environmental quality of traditional commercial streets.

2.2   Conduct pilot research

The factors affecting comfort are wide-ranging and relatively complex. Researchers have conducted preliminary surveys in hopes of finding comprehensive and representative evaluation elements. Combining on-site interviews and field investigations, the initial impressions and impressions of respondents on traditional commercial streets were obtained in the form of semi-open questionnaires and interviews(Table 1).

Table 1. Comfort Evaluation Dimensions

Options	Average composite score	scale
a. Traffic flow line	3.61	
b. Landscape environment	3.33	
c. Commercial function	2.75	
d. Facility condition	2.74	
e. Buiding renovation	2.23	

The author conducted a preliminary survey with open-ended questionnaires in three traditional blocks in downtown Guangzhou. The questionnaire mainly revolved around two themes. The first is to preliminarily understand the background of users in terms of transportation, shopping preferences, and behavioral habits when choosing traditional commercial streets. The second is to understand the intentional needs of the evaluation subject in terms of environmental places, environmental use, and environmental preferences by imagining the ideal traditional commercial block, thereby obtaining the user's positioning of the overall environmental atmosphere and attitudes towards different spaces. Each block filled out 20 operator questionnaires and 40 consumer questionnaires. The survey shows that the role differences between operators and consumers in shopping behavior lead to operators paying more attention to the attractiveness of the shopping environment in gathering customers, while consumers pay more attention to the richness of goods, the quality of the environment, and the differentiated experience of shopping. Two types of users mentioned keywords with more word frequency, as shown in Table 2.

Table 2. Comfort evaluation level

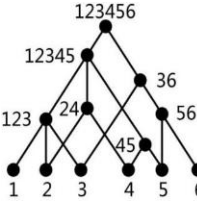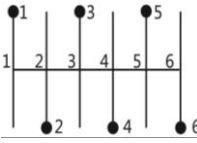| Survey object	Key points	Evaluation remarks
consumer	Function, transportation, landscape, traditional architecture, physical environment	Convenient accessibility and good landscape directly determine the overall quality of the traditional commercial street impression
Store user	Store rent, traffic, building renovation, block management	Trade combination and traffic organization

3   Comfort Study with Block Plan Type as Control Variable

3.1   Division of block sample plan types

The sense of comfort in traditional commercial streets is derived from the experience of traditional historical and cultural elements during travel, as well as the physical environment comfort brought by the spatial adaptation of Lingnan traditional streets to the subtropical humid and rainy commercial shopping environment. In order to have a more comprehensive understanding of the comfort perception in traditional commercial streets, based on preliminary research, the author intends to explore the factors influencing the comfort level of street blocks from the perspective of different spatial types, starting from the attributes of the research object[3]. Drawing on the viewpoint of Professor Christopher Alexander, who uses mathematical sets to explain urban structures, the author, from the perspective of spatial planes, combines the analysis of the sample frames to roughly classify traditional commercial streets into three types: tree-shaped blocks, network-shaped blocks, and comb-shaped blocks. To balance the types and regional characteristics of the samples, this study selects a total of 10 traditional commercial streets as evaluation samples, including 6 in Guangzhou, and 1 each in Foshan, Zhongshan, Shunde, and Meizhou(Table 3).

Table 3. Comfort evaluation level

Block type	block plane characteristics	concept diagram	real scene legend
Tree block	Commercial activities extend along the vertical and horizontal scales, from the main street to the secondary streets on both sides, and then extend to the derivative streets, gradually forming a "trunk", "branch", "node" commercial branch layout		

| Net-work block | It has a relatively obvious traffic spindle and space node, and the trunk (main street) and the branches (secondary lane) are connected through several radiating nodes, and the main street and secondary lane often show a "fishbone" free growth situation | | |
| Comb block | The street continues to extend along the longitudinal direction, and its horizontal space development is relatively lagging behind, and no other branch lane space is derived. | | |

3.2   Construction of Evaluation Factors and Design of Evaluation Questionnaire

Based on the literature research and preliminary studies, the following five aspects will be examined to investigate the factors influencing users' evaluation of comfort in traditional commercial streets (Table 4).

Table 4. Quantification Standard Of Evaluation

Appraisal of value xi	Comments:	Grading
$x_i \geq 1.5$	Excellent	E1
$0.5 \leq x_i < 1.5$	Good	E2
$-0.5 \leq x_i < 0.5$	Average	E3
$-1.5 \leq x_i < -0.5$	Poor	E4
$x_i < -1.5$	Very Poor	E5

'Physical environment facilities'— including the users' perception of sound, light, heat, ventilation, crowding, and other environmental factors.

'Traffic spatial organization'— including the orientation signs, length of pedestrian routes, and organization of traffic routes within the street block.

'Functional format'- involving the types of businesses in the street block, the environment of pedestrian routes, and the branding effect of long-established shops[4].

'Visual sense of place'— including the setting of internal landscapes, the overall sense of place in the street block, and the preservation of traditional styles[5].

'Architectural renovation'— considering the presence of historical buildings and long-established shops in the street block, this factor mainly examines users' perceptions and opinions on the renovation of old buildings.

A Likert scale-designed structured questionnaire will be used, with five primary indicators and 26 secondary indicators identified. Two additional questions will be included to assess the overall evaluation of comfort and the ranking of importance factors. The questionnaire will be distributed to users in the 10 selected traditional commercial streets. The scale used in the questionnaire is symmetrical: 0, 1, 2, 3, 4, 5. The measurement criteria are shown in Table 5[6].

Fig. 1. Field questionnaire distribution survey

3.3   Data Collection

Post-use evaluation emphasizes the ontological value of users. Therefore, in combination with literature research and field investigation, this chapter first conducts comfort research on user groups (tourists, pedestrians and store users) as control variables to analyze and compare the commonalities and differences of demands of different users.

The distribution of the questionnaire was carried out in three main ways:

Organizing students to complete the project as a group assignment, conducting interviews and distributing questionnaires on the streets in an incidental manner, with photo and audio recording for documentation (see Figure 1).

Leveraging local property management personnel and shop assistants working in the blocks, taking advantage of their geographical and occupational convenience to distribute questionnaires to tourists and shop owners.

Hiring student part-timers to randomly distribute questionnaires to pedestrians in the blocks.

These methods were carried out concurrently, with users of different backgrounds complementing each other, aiming to compensate for the limitations of non-probability sampling and approximating the overall sampling effect to probability sampling.

A total of 513 questionnaires were issued, including 380 consumer questionnaires and 133 business questionnaires. A total of 502 questionnaires were collected, with a recovery rate of 97.8%. Excluding incomplete questionnaires, 480 valid questionnaires were obtained.

There were 162 men and 201 women, mainly young and middle-aged people between the ages of 20 and 50, and the income group was concentrated in the 3,000-5, 000 yuan bracket. There were 63 men and 54 women in their 20s and 30s and 30s and 50s, and the average store user has been in operation for three to five years. The researchers believe that the age and gender distribution of tourists' evaluation subjects is more balanced, they have certain economic ability, and they have more subjective and mature feelings about the shopping experience of the neighborhood. Most of the selected store samples have been operating in the block for more than 3 years, which together constitute a relatively stable business situation in the block. Store users have accumulated certain experience and subjective feelings on the evaluated objects. Therefore, the composition of evaluation subject meets the needs of research. Evaluate subject background information.

3.4   Analytical Hierarchy Process (AHP) for Hierarchical Weight Evaluation Analysis

Establishment of Hierarchical Structure Model.

Starting from the basic dimensions involved in comfort, the author proposed factors that have a significant impact on the comfort perception of traditional commercial streets. Using the Analytic Hierarchy Process (AHP), the relative importance of each element (bottom-level factors) to the overall goal (highest level indicator) was determined, forming a multi-level analysis structure model[7].

Based on the classification of evaluation factors, this study established three levels: the goal level, the criterion level, and the sub-criterion level, expressing the hierarchical relationship of the influencing factors of the comfort of traditional commercial streets in a tree structure.

Table 5. The Hierarchy Structural Model of the Evaluation of the in Lingnan Region

Target layer	criterion layer	Subcriterion layer
Comfort evaluation of Lingnan traditional commercial street	S1 Facilities and equipment Physical environment	A1 Air Environment
		A2 daylighting
		A3 Sunshade/rain shade
		A4 sound environment
		A5 Casual seating/toilet/trash can
	S2 Business mode and Commercial function	B1 Types of goods
		B2 old shop attraction
		B3 tunnel operation
		B4The appeal of B4's main store
		B5 Experience the richness of feelings
	S3 Traffic flow lines and Spatial layout	C1 Public transportation is convenient
		C2 orientation and identification
		C3 Traffic
		C4 Traffic flow for people and vehicles
		C5 Length of a moving cable
	S4 Visual landscape and Place atmosphere	D1 Greening and other landscapes
		D2 venue historical atmosphere
		D3 nearby cultural landscape
		D4 Overall hygiene

Each evaluation factor contributes to the evaluation weight of the evaluation factors at the previous level, thus constructing a comprehensive evaluation system at two levels (see Table 5)."

Ranking of Criterion Level Factors Importance.

According to the principle of consistency in the AHP method, the respondents were asked to score the five primary evaluation indicators S1, S2, S3, S4, and S5 according to their perceived importance (from most important to least important, scored as 5, 4, 3, 2, 1 respectively). The ranking of the factors at the criterion level can be obtained based on the scores of the primary indicators, as shown in Table 6[8].

The data shows that the most important factor is the transportation space, followed by landscape place factors, commercial function factors, facility equipment factors, and building use factors. This ranking is basically consistent with the importance ranking derived from the preliminary survey.

Table 6. the Importance Order of the First Rank Indexes of the Questionnaires

Criterion level factor	S1 Facilities and physical environment	S2 business mode and business function	S3 Traffic flow line and space layout	S4 Visual landscape and place atmos-phere	S5 building use and transfor-mation effect
score	1364	1650	1848	1782	1132
sort	4	3	1	2	5
Corresponding secondary index score mean	0.59	0.95	0.82	0.76	0.68
Pilot research sort	2.70	2.75	3.61	3.33	2.23

Construction of Pairwise Comparison Judgment Matrix and Calculation of Criterion Level Factor Weights.

The author adopts the Consistency Matrix method in AHP, constructing a judgment matrix [6] with indicators as quantitative functions, taking into account the difference between Saaty's "1-9 judgment scale system" [7] and the actual scale system in people's minds.

$$b_{ij} = b^{\frac{\ln(k_{ij}^P)}{\ln k}}$$

(1)[9]

(Where: k is the ratio of the maximum value and the minimum value of the C index in all elements; b is the scale of relative importance of elements corresponding to k; p is

the adjustment coefficient. The selection criterion is 1 when the larger the index value is, the better; Otherwise, the value is 1.)

According to the scale function(1), pairwise comparison judgment matrices are constructed, and the maximum eigenvalue and corresponding eigenvector are calculated. The results are shown in Table 7. Expressed in matrix form:

$$S = \begin{pmatrix} 1.0000 & 0.6525 & 0.3333 & 0.4180 & 2.3922 \\ 1.1366 & 1.0000 & 0.5108 & 0.6406 & 1.5325 \\ 2.2250 & 1.9576 & 1.0000 & 1.2541 & 3.0000 \\ 0.7417 & 0.8798 & 0.4494 & 1.0000 & 1.3483 \\ 1.7743 & 1.5610 & 0.7974 & 0.5636 & 1.0000 \end{pmatrix} \quad (2)^{[9]}$$

The maximum eigenvalue of the judgment matrix, λ_max, is 5. The corresponding eigenvector, W =(0.1454   0.1653   0.3235   0.2580   0.1078),We will now proceed with the consistency check.

Table 7. The Determine Matrix of S Level

	S1	S2	S3	S4	S5	Eigenvector W
S1	1.0000	0.5023	0.3333	0.3802	1.9630	0.1454
S2	1.9910	1.0000	0.6637	0.7570	3.9082	0.1653
S3	3.0000	1.5068	1.0000	1.1406	5.8889	0.3235
S4	2.6302	1.3210	0.8767	1.0000	5.1629	0.2580
S5	0.5094	0.2559	0.1698	0.1937	1.0000	0.1078
(λmax =5, CI = 0.00000157, RI = 1.1200, CR = 0.00000140 < 0.1) (k =1.3548, Relative importance scale =3)						

Hierarchical Weight Decision Analysis of Sub-criterion Level Factors.

(I) Using Scoring Data Sorting Analysis Method to Determine the Ranking of Sub-criterion Level Factors

Due to the large number of evaluation factors at the sub-criterion level, the amount of information for pairwise comparison at this level is too large. This study calculates the average of the quantitative scores of each factor in the comfort questionnaire of 10 samples of Lingnan traditional commercial streets, obtaining the average values of each sub-criterion level indicator under the 5 criterion level variables (as shown in Table 8). This serves as the basic basis for judging importance.

Table 8. The Mean Values of C Level

	Indicator 1	Indicator 2	Indicator 3	Indicator 4	Indicator 5	K
S1	0.6788	0.7007	0.5255	0.1460	0.4161	1.196
S2	0.9779	0.8686	0.5912	0.7372	0.8467	1.252
S3	0.8175	0.7226	0.4745	0.5693	0.6496	1.188
S4	0.6350	0.7445	0.7737	0.4380	0.5839	1.126
S5	0.8102	0.6788	0.7299	0.6058	0.6496	1.175

(II) Construction of Pairwise Comparison Judgment Matrix and Calculation of Sub-criterion Level Indicator Ranking

Using the scale function (1), we construct pairwise comparison judgment matrices for the quantitative criteria. We then calculate the maximum eigenvalue and corresponding eigenvector for each matrix, in order to obtain the individual rankings and overall ranking of the sub-criteria with respect to the higher-level criteria (refer to tables 9-14).

Table 9. The Determine Matrix of S_1-A

	A1	A2	A3	A4	A5	Eigenvector W
A1	1.0000	1.1460	0.3333	0.0014	0.1223	0.3032
A2	0.8726	1.0000	0.2909	0.0012	0.1067	0.2845
A3	3.0000	3.4380	1.0000	0.0041	0.3668	0.1837
A4	732.9755	839.9949	244.3252	1.0000	89.6301	0.1011
A5	8.1778	9.3718	2.7259	0.0112	1.0000	0.1274
(λmax =5, CI =0.0000115, RI = 1.1200, CR =0.0000103 < 0.1) (k = 0.77, relative importance scale = 3)						

Table 10. The Determine Matrix of S_1-B

	B1	B2	B3	B4	B5	Eigenvector W
B1	1.0000	0.7720	0.3333	0.5396	0.7301	0.1968
B2	1.2954	1.0000	0.4318	0.6990	0.9458	0.2740
B3	3.0000	2.3159	1.0000	1.6189	2.1903	0.1907
B4	1.8531	1.4305	0.6177	1.0000	1.3530	0.1370
B5	1.3697	1.0573	0.4566	0.7391	1.0000	0.2014
(λmax =5, CI =0.0000115, RI = 1.1200, CR =0.0000103 < 0.1) (k = 0.60, relative importance scale = 3)						

Table 11. The Determine Matrix of S_1-C

	C1	C2	C3	C4	C5	Eigenvector W
C1	1.0000	0.7795	0.3333	0.4817	0.6287	0.2239
C2	1.2829	1.0000	0.4276	0.6179	0.8065	0.2111
C3	3.0000	2.3385	1.0000	1.4450	1.8861	0.1119
C4	2.0761	1.6183	0.6920	1.0000	1.3052	0.1124
C5	1.5906	1.2399	0.5302	0.7662	1.0000	0.1874
(λmax =5, CI =0.0000115, RI = 1.1200, CR =0.0000103 < 0.1) (k = 0.58, relative importance scale = 3)						

Table 12. The Determine Matrix of S_1-D

	D1	D2	D3	D4	D5	Eigenvector W
D1	1.0000	0.4128	0.3333	7.8974	1.5944	0.1761
D2	2.4222	1.0000	0.8074	19.1290	3.8621	0.1828
D3	3.0000	1.2385	1.0000	23.6922	4.7833	0.2067
D4	0.1266	0.0523	0.0422	1.0000	0.2019	0.1709
D5	0.6272	0.2589	0.2091	4.9531	1.0000	0.1034
(λmax =5, CI =0.0000115, RI = 1.1200, CR =0.0000103 < 0.1) (k = 1.22, relative importance scale = 3)						

Table 13. The Determine Matrix of S_1-E

	E1	E2	E3	E4	E5	Eigenvector W
E1	1.0000	0.1553	0.3333	0.0469	0.0977	0.1601
E2	6.4403	1.0000	2.1468	0.3019	0.6295	0.1614
E3	3.0000	0.4658	1.0000	0.1406	0.2932	0.3229
E4	21.3303	3.3120	7.1101	1.0000	2.0850	0.2388
E5	10.2306	1.5885	3.4102	0.4796	1.0000	0.2769
(λmax =5, CI =0.0000115, RI = 1.1200 , CR =0.0000103 < 0.1) (k = 0.90, relative importance scale = 3)						

The weight of each evaluation index is calculated by combining the overall ranking of the criterion layer with the sub-criterion layer, as shown in Table 14.

4   Conclusion

Comfort is relative, and since the factors affecting comfort are multifaceted and change with time and place, the quantifiable evaluation and standardized measurement of the comfort of traditional commercial streets are particularly important. This study uses the types of block plans (network, tree, and comb) as control variables for comfort analysis, constructs a comfort weight model, and thus obtains related quantitative results about the public's collective consciousness and attitudes towards the comfort level of traditional commercial streets. The research results show:

(1) The comfort feeling points of network block, tree block and comb block are from "surface - line - point", focusing on the middle and micro levels from the comprehensive macro. The comfort factors perceived by the network-type blocks are more comprehensive, and the proportion of traffic organization factors and place atmosphere factors perceived from a comprehensive macro perspective is larger. Tree-type blocks focus on the meso level, emphasizing visual environment factors. Comb-type blocks focus on the micro level, with more attention paid to the use of the interior of the building and the corresponding physical environment factors[10].

(2) Converting the weights of each index into a percentage system and calculating the comprehensive scores of each type of block shows: the network-type traditional commercial street scores the highest (64.06 points), followed by the tree-type (61.98 points), and the lowest is the comb-type block score (58.52 points). This to some extent shows that the comprehensive score sufficiently reflects the information contained in each index and basically has the evaluation effectiveness of making a comprehensive comfort judgment on the traditional commercial streets of Lingnan.

(3) In the second-level indicators, factors such as the overall atmosphere of the block, public transportation to the block, the richness of experiences other than shopping, the attraction of traditional old shops/specialty small shops, the appearance or decoration effect of buildings, greenery or sculpture landscapes, sense of direction and iconic elements, etc., have a larger proportion. It can be seen from this that the traffic factors that affect the convenience of users indirectly also affect the perception of comfort[11].

Table 14. The Amenity Evaluation Index Weighs by AHP Method

		S1	S2	S3	S4	S5	overall ranking
		0.1454	0.1653	0.3235	0.2580	0.1078	
S1 Facilities and equipment Physical environment	A1 Air environmental quality	0.3032					0.0169
	A2 Natural or artificial lighting	0.2845					0.0219
	A3 Effects of sun or rain on shopping	0.1837					0.0257
	A4 sound environment	0.1011					0.0199
	A5 Casual seating/toilet/trash can	0.1274					0.0441
S2 Business mode and Commercial function	B1 Types of goods		0.1968				0.0407
	B2 The attraction of traditional time-honored shops/specialty shops		0.2740				0.0599
	Small shop in laneway B3		0.1907				0.0224
	The appeal of B4's main store		0.1370				0.029
	B5 Experience richness beyond shopping		0.2014				0.0633
On S3 Traffic flow lines and Spatial layout	C1 Public transportation to the block			0.2239			0.0518
	C2 The orientation and identifying elements of the block			0.2111			0.0497
	C3 Pedestrian flow congestion level			0.1119			0.0163
	C4 Traffic flow of pedestrians and vehicles			0.1124			0.0338
	C5 Length of pedestrian routes			0.1874			0.0441
Pair S4 Visual land-scape and Place atmos-phere	D1 Greenery or sculpture landscape				0.1761		0.063
	D2 Overall atmosphere of the block				0.1828		0.0861
	D3 Nearby historical sites, cultural exhibitions, or parks				0.2067		0.0327
	D4 Nearby historical sites, cultural exhibitions, or parks				0.1709		0.043
	D5 Management of inquiries, assistance, and distribution of leaflets				0.1034		0.0264
Against S5 Building use and Reconstruction effect	E1 Exterior design or decoration of buildings					0.1601	0.0527
	E2 Utilization of second-floor space/public space by shops					0.1614	0.0212
	E3 Renovation of interior spaces in old buildings					0.3229	0.0282
	E4 Placement of air conditioning units, electrical wires, and billboards					0.2388	0.0350
	E5: Safety measures for water and electricity in shops.					0.2769	0.0129

In general, with the emergence of large modern shopping malls, people have more experiences and more diverse requirements for the comfort of shopping experiences[12].

Traditional commercial streets also respect and consider the feelings and perceptions of pedestrians, and improve corresponding basic service facilities. Such as sanitation, lighting, safety facilities (fences, roadblocks), recreational facilities (such as rest tables and chairs, pavilions, etc.), indicative facilities (shop signs, road signs, maps, signs, etc.), landscape facilities (such as sculptures, sketches, flower beds, ground paving), to create a more comfortable and convenient commercial environment.

It is worth noting that this study has a reference value for traditional blocks with the same block type and similar user groups and use methods. But at the same time, it is also noted that the use of traditional commercial streets are mainly foreign customers, shops and local indigenous people. In this paper, it is considered that the commercial street is different from the ordinary living block, and a considerable part of its aborigines exist as shop users. Therefore, when distributing questionnaires to users, this group of people is also considered as the store's participation. Based on the rigor of the research, it cannot be ruled out that some indigenous people mainly live in the street, and their emphasis on the comfort of the street is different from that of other people who mainly engage in commercial activities. Therefore, in the follow-up study, we plan to pay further attention to this group of people.

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