

Article

Research on the Sustainable Design of Commercial Street Space Based on Importance Performance Analysis

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Abstract: Street commerce is the basic unit of urban structure and an important part of people's life. With the continuous advancement of online commerce, people's consumption habits and consumption patterns have begun to change. (1) Background: During the epidemic, the global business environment changed dramatically, and traditional street business has also been hit hard, leaving a lot of idle space. The question is how to solve the problem of activating the commercial street space after its decay, and realize its sustainable development. (2) Methods: This paper takes the commercial space of Nonglin Street as the object, constructs the relevant factors affecting the commercial space of the street by using the theory of scenes, and collects the data by means of a field investigation and questionnaire. According to a weight analysis and satisfaction analysis, the advantages and disadvantages of the commerce in Nonglin Street are understood. (3) Results: The importance of the three variables of the appearance, comfort and diversity of the commercial space in Nonglin Street is very high and the satisfaction is low. (4) Conclusions: Nonglin Street need to increase diversified forms of business, open block space, integrate regional cultural symbols, and improve the management model of street commerce.

Keywords: street commerce space; theory of scenes; importance performance analysis; sustainable design



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1. Introduction

Since 2020, COVID-19 has gradually become a social phenomenon, making us realize how unstable and difficult the environment in which we live and work is [1]. High fiscal deficits, public debt, demographic development in developed countries, deflation and currency devaluation are increasing risks of global economic collapse [2]. The destruction of the digital economy, the prevalence of protectionist measures, export and import restrictions, de-globalization policy-making and the populist tendencies of the superpowers further accelerated the COVID-19 crisis [3,4]. Traditional street commerce has survived the rapid development of e-commerce and other online commerce, survived the monopolies of the complex emerging business period, but still did not survive the epidemic era. A large number of streets in the world's commercial districts are unsustainable, and have closed down, with shops empty, resulting in the extreme waste of space resources (Figure 1). According to the Centre for Retail Research, COVID-19 has led to a series of bankruptcy filings, including from UK retailers such as Jupiter Group, Tree of Life, Carzam, McColl's Retail Group, Sofa Workshop and J C Rook and Sons [5]. In China, according to incomplete business statistics, in the first half of 2022, nearly 2500 offline stores in various types of physical retail announced their closure, including Walmart, Ikea, Hema, Darun Fat, Carrefour and other well-known brands [6]. The department store in Wangfujing, Guangzhou closed on 30 November 2021. Businesses in Nonglin Street, where Wangfujing is located, were affected and closed down. The vicissitudes of Wangfujing reflect the changes of Guangzhou's commerce and trade, and the course of change in offline commerce. In response to the

decline of street commerce, this paper uses the Chicago School scene theory to explore the activation of street commerce, through the analysis of management and environmental planning, etc., by collecting the experienter's feedback on the indicators of authenticity, drama and legitimacy. This paper analyses the key factors of activating street commerce, and provides valuable suggestions for its sustainable development.



Figure 1. A large number of stores are closed in the global commercial district.

2. The Correspondence between Street Commerce Theory of Scenes

2.1. Commercial Space of the Street

A neighborhood is a space made up of houses, streets, and squares [7]. For a given individual, street space is a kind of “thing for me” and “me for thing”, that is, a specific place for experience, occupation and production [8]. Commercial street space is composed of many shops, such as department stores, restaurants, service stores, and other multi-business combinations [9]. It is the place that meets people's need for social and public activities, such as social intercourse, consumption, leisure and so on. The development of street commerce is subject to convenience [10], and the impact of urban form to promote urban sustainable development [11]. The street integration, the density of shops, the density of building entrances and exits, and the height of buildings on both sides of the street affect the density of commercial pedestrians [12]. Environmental quality, security, comfort, accessibility, population vitality, cultural resources, consumer interaction and participation are all factors that affect the quality of streets [13–17]. When studying the street environment, the street is not only a social space, but one should also consider the physical characteristics of the street [18]. The shape of the buildings and the condition and thermal comfort of the pedestrian environment can be thoughtfully updated through design prediction [19–22].

Gottingen Street, Canada was lifted out of its former economic depression as a residential street through large-scale infrastructure investment, and gradually turned into a commercial street in an active “fashion” district [23]. In Al-khan Street, Tanta City, Egypt, researchers collected the opinions of street consumers targeting five dimensions: street character, traffic, business structure, environmental factors and community participation. It was determined that the development of the commercial district was influenced by political decisions that sometimes prevented the commercial district from performing its

functions properly. The renewal of commercial streets needs to pay attention to the value of protecting traditional commercial streets and consider the attribution of street type [24]. In China Taizhou Old Street, Foshan Lingnan Xintiandi and other practical projects of cultural significance promote the renewal and development of commercial streets [25,26]. Al-karada Street in Baghdad, Iraq, was devastated by the 2016 terrorist bombings. Noor Mazinghazi, an academic, used livable theory to specify the elements of an investigation into the advantages and disadvantages of the performance of Al-Karada Street, determined using the dimensions of design components, urban planning, social and cultural aspects, and so on [27].

2.2. The Theory of Scenes

“Scenespaces” first appeared in the film industry, giving audiences the feeling of a scene through a combination of elements to convey information [28]. The modern business environment is mostly a service environment, and the service scene is composed of a variety of physical environment elements which are carefully designed and controlled. In the service space, the model of the service scene comprises the three dimensions of spatial function and layout, atmosphere elements, and symbols [29]. This paper mainly follows the scene theory of the Club Atlético Nueva Chicago Urban School [30]. Not only did they study consumption as an activity, but also focused on the social organization of consumption, using scenarios to organize consumption into meaningful social forms, which provides a new perspective for the study of urban commerce.

The answer to any question must be multi-dimensional for the understanding of the scene, that is, any particular scene is a multi-dimensional complex, and may focus on the traditional, the deviant or self-expression [31]. The content of scene theory is different in different times [32]. Moreover, scene theory plays an important role in constructing the cultural motivating force of regional development and promoting social regional development [33]. The application of scene theory in design can help designers to grasp the relationship between products and users and their needs more accurately, and further improve the rationality and satisfaction of products [34]. Jang Wonho, a South Korean scholar, uses the three dimensions of authenticity, drama and legitimacy of the scene theory to prove that in the future urban spaces of South Korea, based on the case of Mullae-dong in Wenlaidong district, proper scene elements can rejuvenate the street [35]. In the case studies of “Taoxichuan” in China, Chuangye Street Cafe in Zhongguancun, Dayan Old Town Bar in Lijiang and the Jingdezhen creative bazaar, the intrinsic driving force for urban development was also explored through scene theory, providing a direction for the redevelopment of the decaying street commerce [36,37].

Based on the Chicago scene theory model, this paper analyzes the key elements of revitalizing street commerce through the experiencer’s feedback on the indicators of authenticity, drama and legitimacy, providing direction for the re-management planning of street commerce. This paper introduces the impact indicators and sub-indicators related to street commerce, and develops a framework to help architects and planners evaluate street commerce and promote its sustainable development. In addition, a field study was carried out to identify the problems that prevent these streets from becoming vibrant and to propose measures for their renewal and improvement. The case study is Nonglin Street of Guangzhou, Guangdong Province, China, which in previous years was the main shopping and gathering place in the city. However, with the advent of COVID-19, the offline real economy failed, and street commerce began to die out. The innovation of this research is that scene theory is integrated into the renewal design of the street commerce, and the key points of the street renewal are quantified by AHP and IPA, which more clearly shows how to activate the commercial street space method.

3. Methodology

3.1. Research Models

The structure of this paper is as follows: The first part expounds on the influence of many factors in the loss of vitality in global street business, and through on-the-spot investigation, explains the present commercial situation in Nonglin Street. The second part introduces the key aspects and main indicators of block commerce by using scene theory, and finally summarizes the indicator framework. The third part applies the final framework to Nonglin Street, and discusses the results of the questionnaire. The Fourth part uses the AHP and IPA methods to analyze the results of the Nonglin Street study, and provides suggestions for activation. The fifth part summarizes the research limitations and prospects.

This study is based on scene theory, mainly using AHP and IPA. Through a literature review and field investigation, the preliminary impact indicators are put forward, and then the indicators are prioritized according to the experts' interviews, and the less significant impact indicators are removed, and finally the indicator framework is formed. The Likert scale method was used to design and distribute a questionnaire to collect feedback from consumers, businesses, service personnel and residents in the district, and obtain satisfaction scores. This paper uses the analytic hierarchy process to grade the elements of each level, judge their relative importance, form a judgment matrix, and calculate the importance score of each index [38]. The importance performance analysis was carried out based on the scores of importance and satisfaction, which showed the disadvantages and advantages of Nonglin Street. Finally, according to the analysis results, some valuable suggestions are put forward for the commercial renewal of the street (Figure 2).

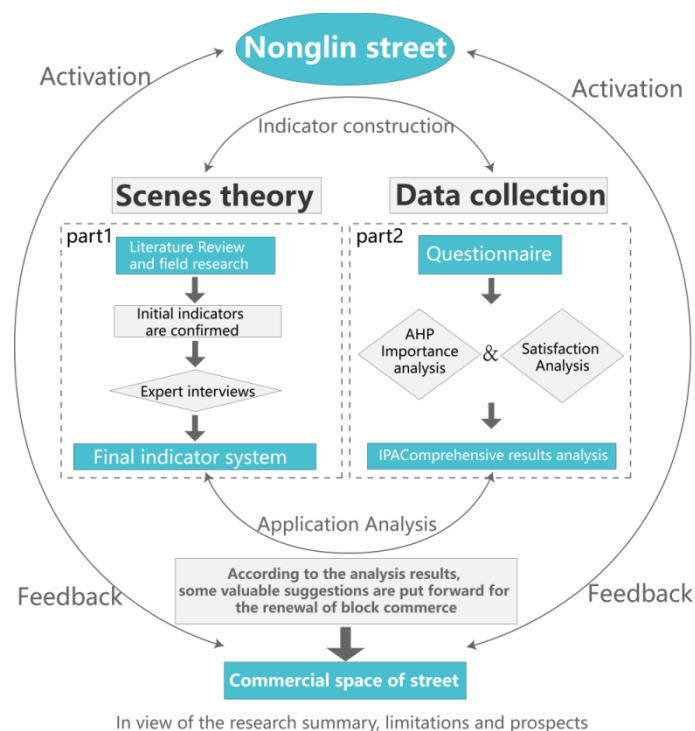


Figure 2. Methodology and application step diagram.

3.2. Project Overview

The study area is located in Guangzhou City, Guangdong province, at 113.29° east longitude and 23.13° north latitude. The total area is 160,000 m². Nonglin Street was formerly one of the three major commercial streets in Guangzhou, in clothing and leather goods, jewelry businesses, catering, financial and other supporting services. Stores included Wangfujing department stores, Trust More department stores, Higashiyama department

stores, and Harbour department stores. At present, because of various reasons, Nonglin Street has become dilapidated, and most shops are closed (Figure 3).



Figure 3. Location and status of Nonglin Street.

3.3. The Theoretical Basis of Index Construction

Street commerce is different from the static consumption of community commerce. Street commerce has a unique cultural atmosphere, and there is a higher consumer power [39]. Terry Nichols Clark proposed that the framework of scene analysis can be divided into three dimensions: authenticity, theatricality and legitimacy [40]. The “five-factor” analysis used for specific measurements—community, facilities, diverse populations, activities, and values—is also provided. It provides a theoretical framework for the construction of a commercial scene index system. Combined with the characteristics of Nonglin Street commerce, this paper will take authenticity, theatricality and legitimacy as the first-level indicators to analyze the construction of the commercial street scene.

(1) **Authenticity.** Authenticity is people’s intuitive sense of the scene, such as an intuitive sense of space, comfort and beauty. The construction of the scene is rooted in the visible and recognizable gathering space, and the construction of the commercial street scene is usually embodied by the visible physical facilities. Physical facilities can not only meet the requirements of functionality but can also have beauty. The commercial street facilities can show the charm of local culture, but also can increase their own appeal. The functional and aesthetic analysis of the material facilities of the commercial Nonglin Street can effectively meet people’s needs and form the value of the commercial street itself.

(2) **Theatricality.** Theatricality is the extension and sublimation of authenticity, showing more subjective feelings, such as experiencing the atmosphere of the commercial space, or self-expression in the commercial street [41]. The types of activities that people like to participate in and the purposes of participating in activities can provide a decision-making basis for creating the scene of commercial activities in the street.

(3) Legitimacy. Legitimacy is people's further promotion of and search for recognition on the basis of authenticity and theatricality. The service provided by street commerce is an important factor in measuring the commercial value of the street, and is the cultural display of the street commerce.

3.4. Construction of Evaluation Index

Based on the theory of scene, the elements of street commerce activation, combined with the selection of evaluation indicators, were derived from a literature review, on-the-spot research and expert interviews. From the three dimensions of authenticity, theatricality and legitimacy, 28 indices (Table 1) are derived, including aesthetic degree, function, activity participation, activity type, service and culture.

Table 1. Initial evaluation indicators.

	Level 1 Indicators	Level 2 Indicators	Level 3 Indicators
Initial evaluation indicators	Authenticity	Aesthetic	Building appearance; square space; street environment
		Functional	Basic life function; shopping mall streamline planning; comfort; diversity; internet smoothness
	Theatricality	Participation	Leisure and entertainment; exchange between friends; interests and hobbies; take photos and punch cards; pass the time
		Activity type	Cultural and sports activities; commercial activities; artistic activities; festival activities; mass entertainment; interactive experience
	Legitimacy	Services	Security and order; online consumption; convenient service; brand value
		Culture	Cultural atmosphere; cultural and creative industry; historical memory; unique design; epidemic characteristic plan

In order to optimize the correlation among the indices and improve the scientificity, rationality and validity of the evaluation indices, through consultation with experts, the initial evaluation indicators of the theoretical screening were adjusted and revised to obtain the final evaluation indicators (Table 2): 3 first-level indicators, 5 second-level indicators and 15 third-level indicators. There are five indicators of authenticity, four indicators of theatricality, and six indicators of legitimacy.

Table 2. Final evaluation indicators.

Level 1 Indicators		Level 2 Indicators	Level 3 Indicators
Final Evaluation Index	Authenticity	Aesthetic	The exterior of the building
			Street environment
		Functional	Convenience
			Comfort
	Diversity		
	Theatricality	Activity type	Cultural and sports activities
			Business activities
			Art events
			Festivals
	Legitimacy	Services	Security and Order
			Convenience for the people
			Brand Value
Culture		Cultural atmosphere	
		Cultural and creative industries	
	Historical memory		

4. Research Findings and Discussion

4.1. Research Findings

4.1.1. Questionnaire Distribution and Recall

To obtain more realistic data, the team conducted a number of field surveys, residential interviews and questionnaires in Nonglin Street from 11 to 20 July 2022 (Figure 4). The questionnaire was completed both online and offline. The offline distribution area was the residential area near Nonglin Street, and the online residents were members of a WeChat owner group. A total of 350 questionnaires were distributed online and offline, and 323 valid questionnaires were recovered, with a recovery rate of 92%. Among the valid questionnaires, 56.4% were male and 43.6% were female. Respondents aged 18–30 accounted for the largest proportion of 73.8%. The occupation distribution of the interviewees included students, civil servants, teachers, employees in enterprises, retirees and so on. In terms of educational background, 48.6% of the students had a bachelor's degree.



Figure 4. Site map of questionnaire distribution.

4.1.2. Reliability and Validity Analysis

The reliability and validity of the data were analyzed by SPSS 26 software (a software to help users solve data statistics and data analysis problems). The reliability coefficient was 0.866, which was greater than 0.8, indicating that the reliability of the study data was high and could be used for further analysis (Table 3).

Table 3. Cronbach reliability analysis—simplified format.

Number of Items	Sample Size	Cronbach α Coefficient
15	323	0.866

The KMO value was 0.872, and the KMO value was greater than 0.8 (Table 4). The study data were suitable for extracting information, and the validity was good.

Table 4. KMO and Bartlett's test.

	KMO Value	0.872
	Approximately chi-squared	1358.258
Bartlett spherical degree test	df	105
	p-value	0

Through the data analysis, the data of 15 indicators were summed and divided into high and low groups, and a *t*-test was used to compare the differences. Both high and low

groups showed significance for all 15 items ($p < 0.05$), meaning that a total of 15 items were well differentiated and should be retained (Figure 5).

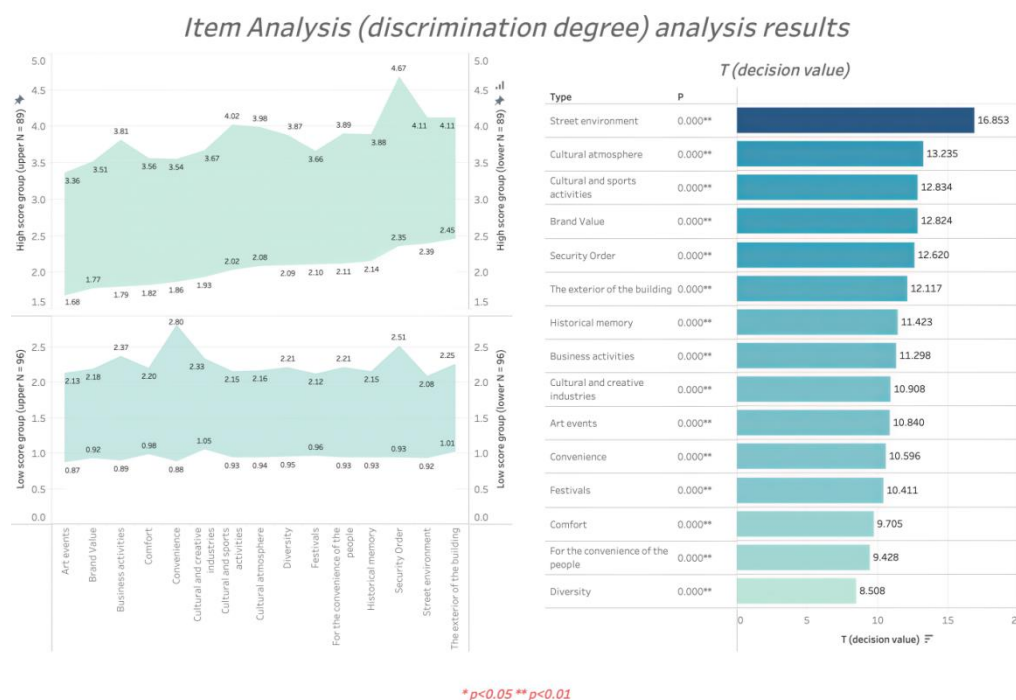


Figure 5. T-test difference analysis plot. (An asterisk corresponds to a significant at the 5% significance level, * $p < 0.05$ means that something is at least 95% certain that it will happen. Two asterisks correspond to a significant 1% level, and ** $p < 0.01$ means that something is at least 99% certain that it will happen).

4.1.3. Satisfaction Analysis of Commercial Space in Nonglin Street

According to the degree of satisfaction of commercial space in Nonglin Street (Figure 6), the data of each index are more concentrated. Convenience (2.65), street environment (2.47), safety and order (2.61) and commercial activities (2.41) are the four aspects of high satisfaction. The satisfaction of comfort (2.06), diversity (1.95), art activities (2.01), festival activities (2.01), convenience service (1.97) and historical memory (2.05) were lower. In terms of median, the median for safety and order was 3, above the standard average of 2.5, and for the remaining 14 indicators the median was 2, below 2.5.

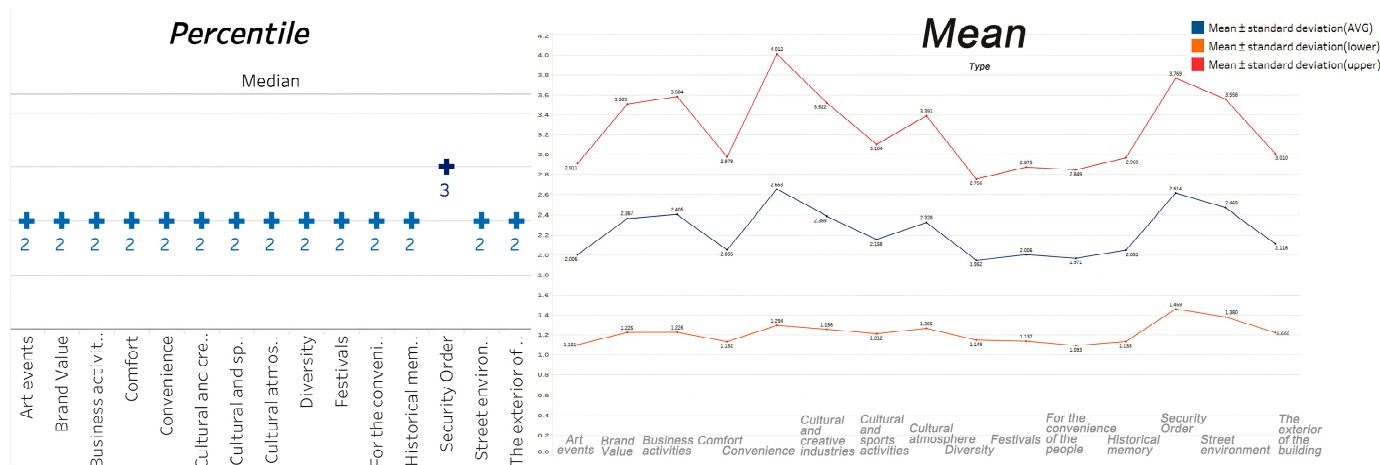


Figure 6. Analysis of average satisfaction degree for commercial space in Nonglin Street.

In terms of the mean \pm standard deviation (Figure 7), the difference between convenience, business activity and safety and order was larger. According to the IQR value, the dispersion of the 15 indicators was lower. According to the CV value, the difference between convenience, business activity and safety and order was larger. Convenience (0.51), business activity (0.49), cultural and creative industries (0.48) and brand value (0.47) were more discrete than the other 11.

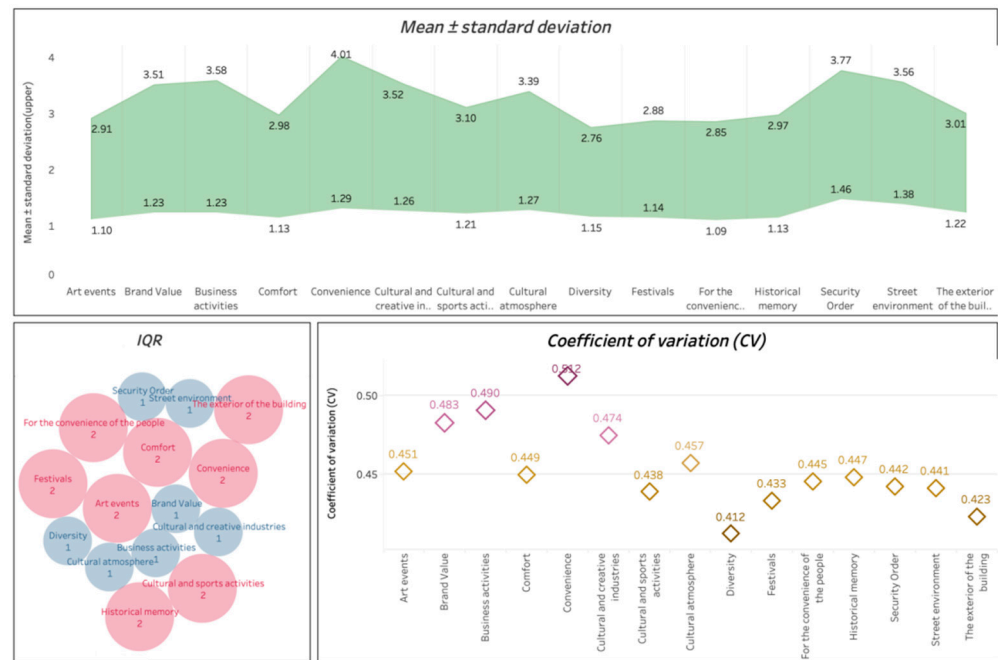


Figure 7. Satisfaction analysis of commercial space in Nonglin Street.

4.1.4. Analysis of the Importance of Commercial Space in Nonglin Street

According to the judgment matrix of AHP analysis (Figure 8).

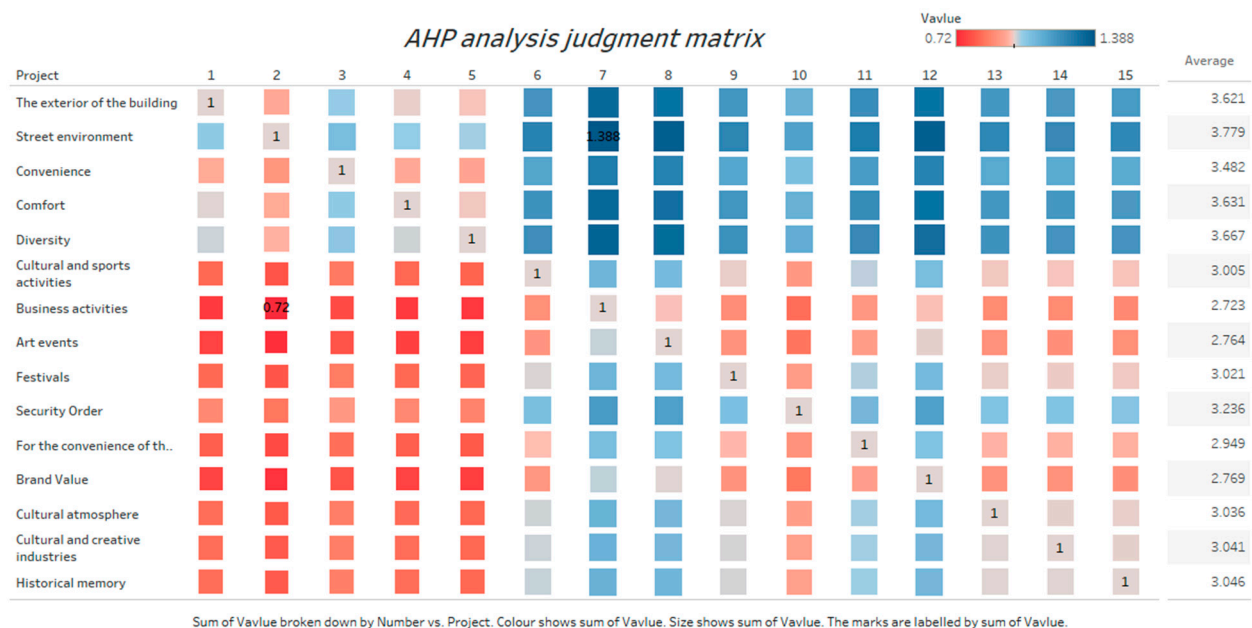


Figure 8. AHP matrix diagram.

If the matrix $A = (a_{ij})_{n \times n}$ is satisfied (i) $a_{ij} > 0$, (ii) $a_{ji} = \frac{1}{a_{ij}}$ ($i, j = 1, 2, \dots, n$), then the matrix A is a reciprocal matrix. From this, we can get the maximum characteristic root $\lambda_{max} = n$, and the maximum characteristic root is 15. According to $CI = \frac{\lambda_{max} - n}{n - 1}$, the consistency index is 0. According to $RI = \frac{\lambda_{max} - n}{n - 1}$, the random concordance RI results are known (Figure 8). According to $CR = \frac{CI}{RI}$, the consistency ratio is 0. When $CR < 0.10$, the judgment matrix can be unmodified, which is the default judgment that matrix consistency is acceptable (Figure 9).

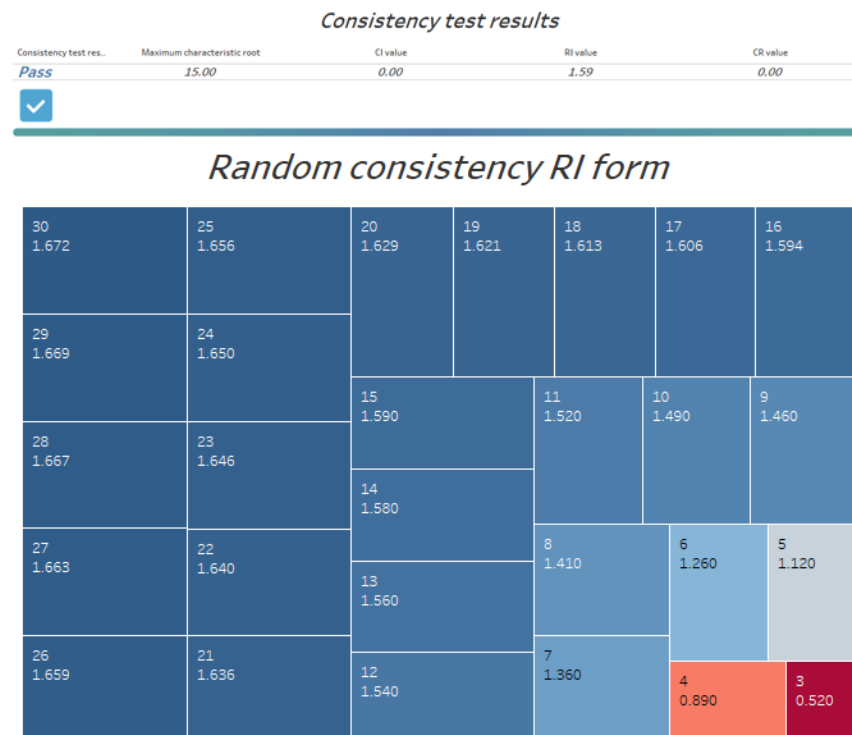


Figure 9. AHP consistency test analysis chart.

According to the result of the AHP analysis (Figure 10), the weight of each index exceeds the median line, which proves that these 15 indexes are more important to the activation of street commerce, and when carrying on the activation design to the street commerce, people may start from these indicators. The weight values of street environment (7.91%), diversity (7.68%), comfort (7.60%), architectural appearance (7.58%) and convenience (7.29%) are high, and all of them belong to authenticity, which shows that consumers are more sensitive to the perception of intuitionistic reality. In the street activation design, we can consider the priority of creating the authenticity of the scene. The low weights of commercial activities (5.70%), artistic activities (5.79%) and brand value (5.80%) indicated that consumers had low expectations of these three items.

4.1.5. IPA of Commercial Space in Nonglin Street

In evaluating the degree of satisfaction with the commercial space in Nonglin Street, the basic principle of IPA is to make a four-quadrant matrix according to the importance and degree of satisfaction of the evaluation index. The IPA quadrant analysis chart was constructed by taking the importance weight score and the overall mean of the degree of satisfaction with the commercial space of Nonglin Street as the horizontal axis and the vertical axis respectively (Figure 11), and the importance and satisfaction scores of 15 variables that affect consumer satisfaction were evaluated. According to the results of IPA, we can clearly determine the advantages and disadvantages of the commercial space in Nonglin Street.

AHP results

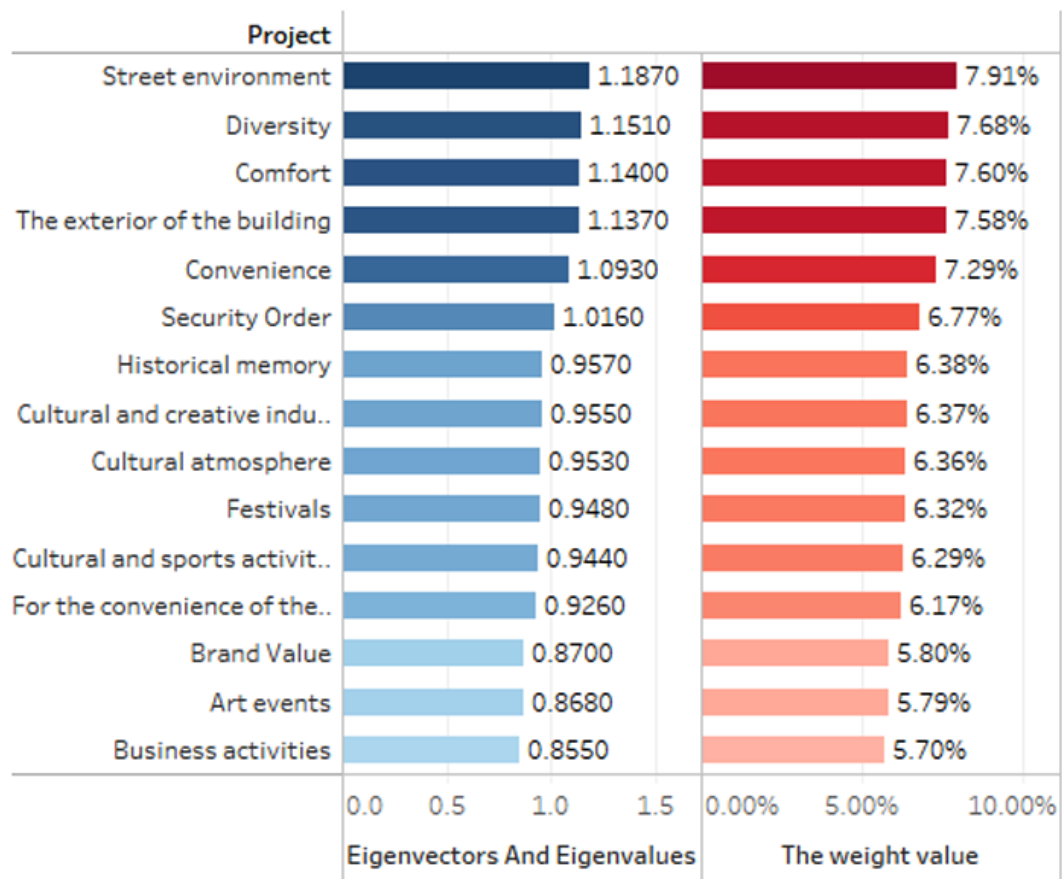


Figure 10. The result of AHP.

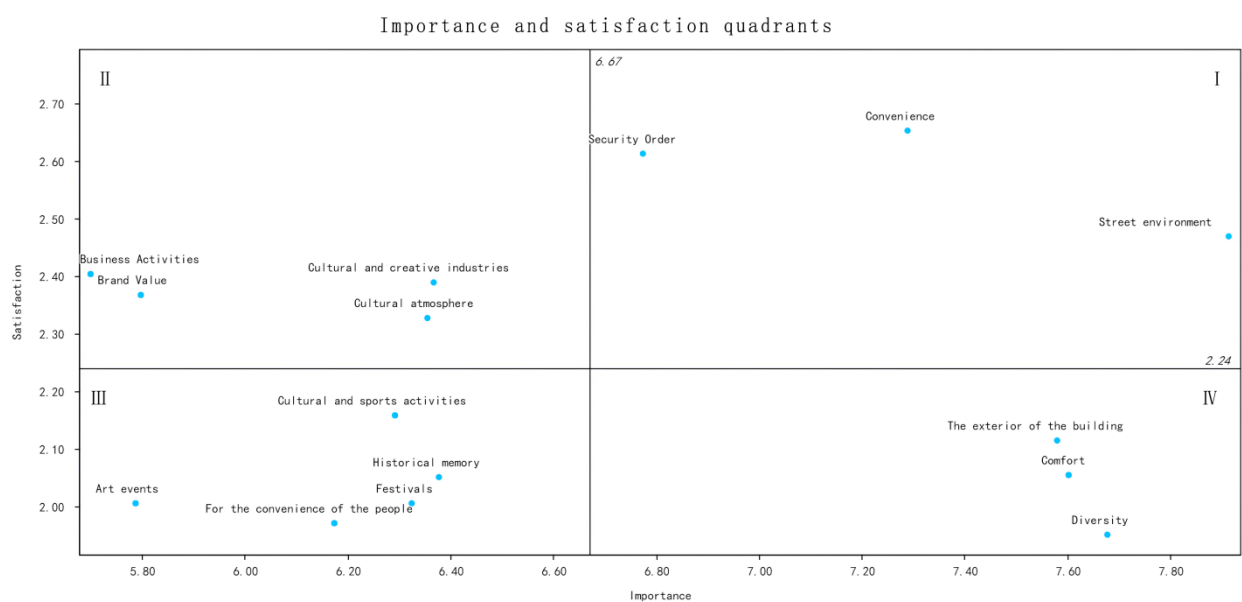


Figure 11. The IPA quadrant of commercial space in Nonglin Street. (I, II, III, IV stands for quadrant I, II, III, IV).

The results of IPA of commercial space in Nonglin Street (Figure 11):

1. First item:

The preponderance of commercial space (quadrant I) in Nonglin street shows the distribution of 15 variables in the matrix. It can be seen that the three variables of safety and order, convenience, and street environment are located in the first quadrant, and the importance and satisfaction scores of these variables are very high. Safety and order and convenience especially are the most obvious; this reflects the advantages of commercial space in Nonglin Street. In view of these factors, the commercial space of Nonglin Street should continue to maintain the safety and order in the management of the commercial space, and ensure a good level of convenience in relation to the geographical location.

2. Second item:

The maintenance area of the commercial space (quadrant II) in Nonglin Street. Cultural and creative industry, cultural atmosphere, business activities and brand value are four variables located in the second quadrant, with higher satisfaction but lower importance. In the process of experiencing the commercial space of Nonglin Street, the consumers' actual experience is rated higher than their original expectation, which is the secondary advantage of Nonglin Street.

3. Third item:

The opportunity area of the commercial space in Nonglin street (quadrant III). In the third quadrant, there are five variables in the third quadrant, namely, literary and sports activities, historical memory, festival activities, civil service, and artistic activities. These indicators will change due to the change of external factors such as consumer propensity to consume, and corresponding countermeasures should be made according to its future development.

4. Fourth item:

Improvement of commercial space in Nonglin Street (quadrant IV). The three variables of building appearance, comfort and diversity are in the fourth quadrant, that is, the importance is high and the satisfaction is low. This shows that the commercial space of Nonglin Street does not pay enough attention to these factors, falling considerably short of consumer expectations, which is the key to the development of the commercial space of Nonglin Street. Therefore, for these factors, the management of commercial space in Nonglin Street should pay great attention to the urgent need for improvement, as the improvement of these indicators will drive the sustainable development of commercial space in Nonglin Street.

4.2. *The Initial Renewal Strategy of Commercial Space in the Street*

Through the investigation and analysis of commercial satisfaction, we can see that the consumer's satisfaction with the commercial space in the Nonglin street is not very good, and they are generally more inclined to be dissatisfied. It is important to enhance the relevant experience for consumers. According to the evaluation data on consumers' satisfaction with the authenticity, theatricality and legitimacy of the commerce in Nonglin Street, combined with the evaluation of the importance to consumers of the construction of the commercial scene, the necessity of each index in the activation design was analyzed. The following initial renewal strategy for the commercial street activation is proposed.

4.2.1. *Street Commerce Should Increase a Variety of Forms of Business, Enhance the Demand for Diversified Experience*

The main element of commerce is people, and people have a variety of needs. Needs produce markets, and markets lead to the further possibility of commerce. Irene Gil-Saura points out the importance of commercial formats in enriching the customer's shopping experience [42]. When the consumer demand continues to improve, with a good sense of experience and a variety of consumer areas the diversification of commercial space will

have great advantages. Today the commercial space of Nonglin Street takes the form of clothing and department stores, which are unable to meet the needs of the surrounding people. In the era of the epidemic, street commerce should develop in the direction of intelligence, thermal comfort, sharing and new fashion, to complete the transformation from street commerce to street consumption, and reshape the service system of street commerce. The development of the commercial space of Nonglin Street can start from the emotional experience of consumers, to create a fusion of culture, entertainment, and leisure in an interactive and comprehensively diverse commercial streets space. Expanding the commercial format of the street could include businesses such as a high-tech feature studio, teahouse, cafe, bar, sauna room, bowling alley, gym, beauty salon and so on, to meet the consumer leisure, health, social, entertainment, shopping and other personalized, diversified, characterized consumption needs. to provide consumers with food and beverage, fashion shopping, leisure and entertainment, education and training and other quality of life consumer services.

4.2.2. Open Street Function, Improve Comfort and Convenience

Street commerce needs to meet the needs of users where different social groups, different activities, and different functions intertwine and overlap. Through the various complementary commercial facilities and public facilities, the multi-service function of street commerce can bring good social benefits. Providing a convenient and diverse choice of activities to meet the needs of the physical and spiritual life of consumers is the key to enhancing the commercial attractiveness of the street.

Consumers have a strong expectation for the commercial space of Nonglin Street, but the satisfaction is not high, and the comfort needs to be improved. The scholar José Luis Machado-León quantifies the use of roadside space in the most densely populated urban areas of central Seattle, proving that proper infrastructure and well-located parking are decisive for urban neighborhoods [43]. To actively improve the street conditions of Nonglin Street, building three-dimensional and underground parking would solve the parking problems. Vikas Mehta found that the increase in business seating, public seating, block diversity, independent businesses, and community gathering places significantly affected the intensity of the street [44]. To intensify the renovation of the buildings and landscapes along the streets, the elaborate design and construction of green spaces, flower beds, walking paths, lighting facilities, art corridors, sculpture sketches, road signs, advertising light boxes, leisure facilities, toilets, etc., is recommended to enrich the visual appeal, increase interest, and attract consumers. At the same time, adding node micro-landscapes, planning for small green spaces, rest spots, etc., the use of space behind buildings and the treatment of spaces such as road corners, to provide more places to stay in the exchange, allows the consumer to not only embody the “beauty” of the environment but also realize the “joy” of life. Closely related to people’s needs for activities and feelings of security, happiness and other emotions, is the coordinated play of traffic, urban planning, landscape, and the advantages of the wisdom of other multi-professionals. By means of traffic design to promote the functional optimization of streets, urban design to co-ordinate the characteristics of style, landscape design to enhance environmental quality, intelligent design to create an accompanying experience, through mutual nesting and integration of the “four designs”, the complete reconstruction of the commercial space in the street is promoted.

4.2.3. Integration of Regional Cultural Symbols, Optimize the Landscape of the Street

It is important to strengthen cultural consensus in the construction of the commercial street space, the identification of the main local cultural elements of the street, and involvement in environmental management and planning and design, with a view to building a common understanding of the street culture and enhance the landscape in the local construction. Wan Norisma of Malaysia has said that streets and buildings must be appropriate to the particular city in which they are located and must be unique to the city in which they are located [45]. Nonglin Street, which is part of the Dongshan District, is

connected to Dongshankou and carries the traditional culture of Guangzhou with profound cultural significance. Korean scholar Son Kayoung has said that the external street space can directly influence the indoor built environment to attract pedestrians into the interior, fully demonstrating the importance of the building's appearance [46]. The street landscape is dealt with through the building group organization, the building shape, the plane arrangement, the three-dimensional form, the structure modelling, the color, the texture and so on, forming comprehensive, practical, artistic space relations. As can be seen from the results of the above analysis, the street landscape is very important to the commercial space experience of Nonglin Street, and the degree of satisfaction is low. These factors must be solved in the optimization design. In order to realize the sustainable development of Nonglin Street, we should give full play to the regional cultural advantages, optimize the street architecture and landscape, integrate the local cultural symbols, enhance the street landscape, and integrate into the surrounding environment.

4.2.4. Perfect the Management Mode of Street Commerce

According to Fayth A Ruffin's qualitative research data from the Newark Downtown District in New Jersey and the Central City Improvement District in Cape Town, (Western Cape, South Africa), good management practices can lead to the expected performance of the downtown district [47]. City street commerce is a regional economic form at the grass-roots level. It is usually established by means of street offices, individual investment or investment promotion. Economic activity involves many fields such as industry and commerce, the construction industry, service industries and so on. To perfect the management mode of street commerce, we should strengthen the leading mechanism, the autonomous mechanism, the supervising mechanism, the service mechanism and the coordination mechanism. Establishing the linkage mechanism of "self-care and self-government", strengthens the risk prevention and control work, ensuring an effective emergency plan and the demonstration of street economy, services and security work. In order to alleviate the employment pressure caused by the epidemic, it is necessary to encourage young people to start their own businesses, expand employment opportunities and resettle unemployed young people. We should perfect the management mode of street commerce, strengthen the construction of regional economic development systems, and form a complete management system.

In the next step of the study, our team will work with the commercial management of the Nonglin street to discuss the results of the study with them, and we will also verify the validity of the results from more dimensions, and put forward some design plans for the later activation design of the Nonglin streets. We hope that through our team's research, the Nonglin street commercial space update will be successful in achieving sustainable development.

5. Conclusions

In the rapid development of the internet and the COVID-19 epidemic and other multiple blows, the development of street commerce is entering into the cold winter period. Based on the scene theory, this paper analyzes the advantages and disadvantages of the commerce in Nonglin Street, and puts forward some activation strategies, such as increasing the variety of business forms, improving the degree of comfort, optimizing the appearance of the street's buildings and perfecting the management mode of the street commerce, etc., to promote sustainable development. The activation of street commerce can improve the quality of life in the street, solve the problem of employment for residents, improve the economic benefits of the street, and help the development of the city. Based on the scene theory, this paper analyzes the sustainable design of street commerce; the research content is only one part of it, and did not achieve absolute comprehensiveness. The main limitations of this study are that the relevant elements affecting the street business were identified through a review of the literature and a theoretical analysis, and only one field study of the Nonglin street was conducted, which can only be used as a preliminary test.

I hope that more researchers will pay attention to street business in the future, and provide ideas and methods for the sustainable design of street business from different perspectives.

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