



# Spatial Distribution Characteristics of Traditional Commercial Economic Center Bar Based on Geographic Big Data: A Case Study of Nanning, Guangxi

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**Abstract.** With the continuous improvement of the economic and social level in our country, the current economic development has shifted from high-speed growth to high-quality development, under the new social and economic conditions, there have been privatized and commercialization of public space in the cities, that is, consumption public space. This paper chooses the consumption public space represented by bar places within the scope of Nanning Chaoyang business circle as the research object, using the methods of big data crawling, GIS spatial analysis and field research, on the bar space distribution characteristics of Nanning Chaoyang business circle comparative analysis and research, the conclusions are as follows: (1) The coffee shop takes Chaoyang business Circle and People's Park as the core, showing multi-point distribution in the periphery; (2) Bars gather in Chaoyang Business Circle, with concentrated distribution; (3) There is a high coupling between the new tea drink and Chaoyang business circle. Based on this, this paper further puts forward some suggestions on promoting the development of consumer public space in arcades historical and cultural blocks.

**Keywords:** coffee shop · bar · new tea drink · spatial characteristics · economic and business district

## 1 Introduction

In recent years, China's economic development has shifted from high-speed growth to high-quality development. People's living standards have been improving day by day, and the ways of production, life and leisure entertainment have become diversified and personalized. Traditional public Spaces in cities such as squares and parks can no longer meet people's needs [1], especially those of new social classes, such as "Generation Z" and other emerging consumer groups. Therefore, many scholars turn their attention to the discussion category of non-traditional urban public space.

This paper takes the new tea drinking bar space which is developing rapidly in the city as the research object. Compared with the traditional public space, this kind of bar space has a remarkable feature, that is, it often requires consumers to enter [2]. However,

for the traditional public space, the emerging bar space can better meet the double needs of current people for material consumption and spiritual enjoyment, and is accompanied by social attributes and consumption behaviors including entertainment, business, etc., so it is defined as the consumption public space [3]. This paper takes the arcade historical and cultural blocks as the research scope, selects the consumer public space represented by the bar as the research object, and adopts the methods of big data crawling [4], GIS spatial analysis, kernel density estimation and field research to carry out comparative analysis and research on the spatial distribution characteristics of the bar in the Chaoyang business circle [5]. Based on the research conclusions, corresponding countermeasures and suggestions are put forward for the development of arcades historical and cultural blocks and consumer public space [6].

## 2 Research Scope and Data Source

### 2.1 Research Scope

Nanning is the capital of Guangxi Zhuang Autonomous Region and the core city of Beibu Gulf City Group [7]. It is approved by The State Council as the central city of China Beibu Gulf Economic Zone and a comprehensive transportation hub [8] connecting to the sea in southwest China. According to the Master Plan of Nanning City (2011–2020), the urban spatial layout of Nanning is “one axis, two belts and three centers”. With “three centers” chaoyang, Lang respectively, east phoenix ridge, and five new district [9]. Chaoyang business circle as nanning traditional commercial center and a typical class distribution of historical and cultural blocks, the overhang will retain and develop in the future. Therefore, this paper chooses the arcade class historical and cultural blocks as the core of the Chaoyang business circle as the research scope [10].

### 2.2 Data Sources

The POI data used in this study came from the open data of Autonavi platform (retrieved on December 24, 2022), Meituan.com and Dianping (retrieved on December 24, 2022). After importing POI data into the ArcGIS10.2, a total of 115 coffee shops, 77 bars and 587 new tea drinks were obtained in Chaoyang Business area (Table 1).

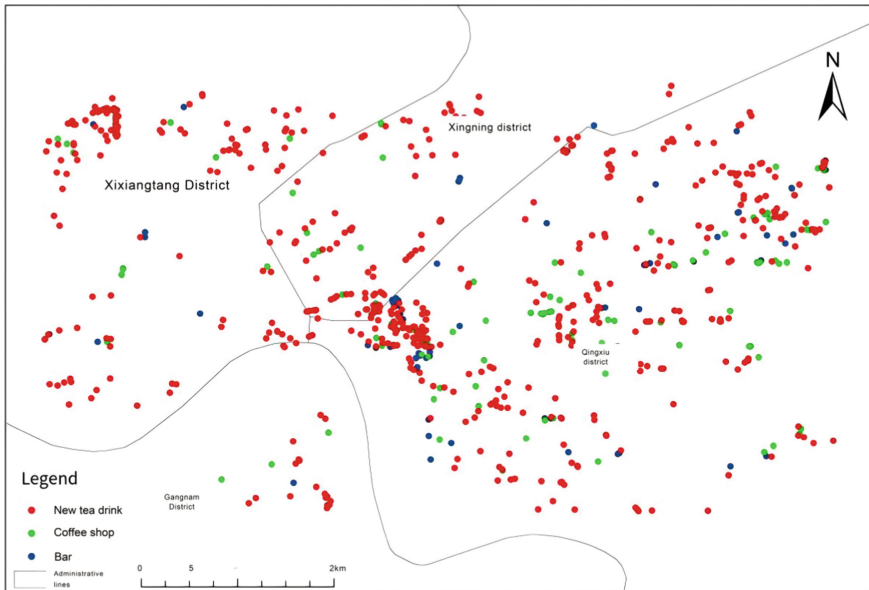
## 3 Spatial Distribution Characteristics

### 3.1 General Distribution Characteristics of Bar Space

As can be seen from the statistical results of the type and quantity of bar space, the number of new tea drinks in Chaoyang business area is the largest, accounting for nearly 80%, while the proportion of bars and coffee shops is relatively low, which are 14.76% and 9.88% respectively. The distribution is shown in Fig. 1:

**Table 1.** Statistical Table of bar space types and quantities in Chaoyang Business District of Nanning (unit: unit)

Bar space type	Coffee shop	Bar	New tea drinks	Total
Quantity	115	77	587	779
Percentage (%)	14.76%	9.88%	75.35%	100.00

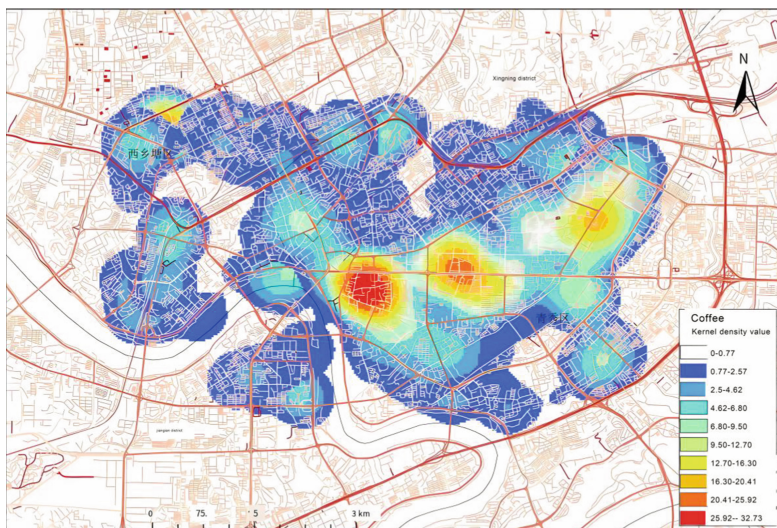


**Fig. 1.** Bar spatial distribution of Chaoyang Business District in Nanning

### 3.2 Spatial Distribution Characteristics of Coffee Shops

The distribution of coffee shops in Chaoyang Business Circle of Nanning shows the characteristics of gathering in Chaoyang Square and Nanning department store, and forming a certain concentration in People’s Park and other areas. Chaoyang Square is one of the traditional core business areas in Nanning City. There are many shopping malls and office buildings in Chaoyang Square. The customers are not only those who work here, but also the citizens who come from other areas for leisure, sightseeing and consumption. The distribution is shown in Fig. 2:

However, if the stores are located in the downtown, it means that the operators will bear higher rent. Due to the high operating cost, many coffee shops will settle in the surrounding areas of Chaoyang Business Circle, such as Guangxi University and People’s Park.



**Fig. 2.** Analysis results of the nuclear density of coffee shops in Chaoyang Business Circle of Nanning

### 3.3 Distribution Characteristics of New Tea Drinks

There are a total of 587 new tea drinks in Chaoyang business Circle, with a large number and high concentration. The results of nuclear density show that the new tea drinks form a spatial structure feature of “two cores and multiple points” in spatial layout. The two cores are Chaoyang Square and Guangxi University respectively, and the multiple points are mainly distributed in Nanning department store, People’s Park and other places. It can be seen that the site selection of the new tea drinks tends to be near the mature business circle with large flow of people, and there is a high degree of coupling with the business circle. The distribution is shown in Fig. 3:

At the same time, the new tea stores also have the following characteristics: There is a large space in the store, which can meet the needs of consumers such as party, leisure and rest.

### 3.4 Spatial Distribution Characteristics of Bars

In Chaoyang Business Circle of Nanning, the bars mainly gather around Chaoyang Square, in addition to Guangxi University, University East Road, Nanning department store, People’s Park and other places scattered distribution. The distribution is shown in Fig. 4:

The bars in Chaoyang business circle of Nanning are distributed close to the center of the business circle. Based on the characteristics of high unit price and low consumption frequency of bar customers, choose to open the bar in Chaoyang business circle with high population density, which can ensure the relative stability and a certain scale of customers.



**Fig. 3.** Analysis result of kernel density of new tea drink in Chaoyang business Circle of Nanning



**Fig. 4.** Analysis result of nuclear density of bars in Chaoyang Business Circle of Nanning

## 4 Conclusions and Suggestions

### 4.1 Conclusions

By comparing the spatial distribution characteristics of coffee shops, new tea drinks and bars in Chaoyang business circle of Nanning City, this paper studies the spatial distribution characteristics of bar space in Nanning City combined with field research. It is concluded that coffee shop, new tea drink and bar respectively represent three different types of bar space. From the results of their spatial distribution characteristics, there is a certain coupling and convergence.

On the macro scale, the new tea drink, the coffee shop and the bar have a large area of overlap. From a micro point of view, the three types of bar Spaces are highly coupled

with the Chaoyang business Circle with arcade historical and cultural blocks as the core. The new tea drinks and coffee shops belong to daytime consumption places, while the bars belong to night consumption places.

## 5 Suggestions

As an important part of urban consumption public space, the bar space in Chaoyang business District optimizes the urban and road landscape to a certain extent. Based on the analysis of the spatial distribution of the bar space in Chaoyang business district, which is centered on the arcade historical and cultural blocks in Nanning city, this paper discusses the current results and gives some suggestions.

### (1) The old city in a new look, diversified development

The spatial layout of Chaoyang business Circle with arcades as the core of historical and cultural blocks tends to be stable, but the development of bar space can constantly change. The current bar space not only needs to meet the trend of The Times, but also needs to meet the personalized needs of customers, so many new and old shops can upgrade their stores to attract more customers and meet the personalized needs of customers.

### (2) The environment must be created and the image rebuilt

Environment is one of the most important factors affecting consumers' experience in the bar space. In the design, attention should be paid to the taste and style of street and bar space. In the interior decoration design, cultural style and outdoor space, attention should be paid to the arrangement of cultural atmosphere. In addition, we should also take the way of preserving the volume, renovating and transforming to rebuild the image of the arcade class historical and cultural blocks, and carry out moderate adjustment of business forms.

### (3) Diversification of marketing, propaganda efforts

At present, the traditional marketing and advertising industries are showing a declining trend. In order to obtain greater publicity effect and attention, arcade historical and cultural blocks and bar-style Spaces need to pay more attention to online publicity and marketing, and make good use of various social platforms and new media channels mainly featuring short videos.

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