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Research on the Distribution Factors of Urban Sports and Leisure Facilities in Suzhou City Based on Points of Interest

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ABSTRACT

Physical activity has been well documented to have substantial health benefits. The Report on the Health Status of the Chinese People 2020 noted that, as a result of the epidemic, there had been some changes in the exercise health status of the population, with the average number of steps taken by the Chinese people decreasing significantly, some people being touched by the epidemic to start exercising, and people becoming more concerned about their own health. Sports and leisure space is an indispensable and important part of the urban public service system, and it is the basic carrier and important engine of fitness activities for Chinese residents. Building a higher level of public service system for national fitness is not only an important foundation for promoting the comprehensive development of mass sports, but also an important guarantee for promoting the health of all people. In this paper, based on the POI data of National Geographic Information Resource Directory Service System, the spatial layout of outdoor recreation facilities in Suzhou City is researched by using Nearest neighbor index, Kernel density estimate, Standard deviational ellipse and other methods to summarize the pattern of the urban recreation space and its characteristics, and Multiple Linear Regression is also used to explore the factors influencing the spatial layout of urban recreation facilities. The spatial layout of outdoor recreation facilities in Suzhou City was studied by the methods of Kernel density estimate, Kernel density index, Standard deviational ellipse and so on, to summarize the pattern of urban recreation space, and to explore the influencing factors of the spatial layout of outdoor recreation facilities in Suzhou City by Multiple Linear Regression. The results show that: (1) the spatial distribution of sports and leisure facilities is characterized by "central aggregation and peripheral dispersion". (2) The directionality of the spatial distribution of sports and leisure facilities is not obvious, and the distribution range is more concentrated. (3) Suzhou's resident population, GDP and leisure industry have a significant impact on the density of sports and leisure facilities.

KEYWORDS

Sports and Recreation Space; Spatial Layout; Influencing Factors; POI.

1. HIGHLIGHTS

Most of the research on urban sports and leisure space focuses on urban parks and green spaces, but the space for urban residents to engage in sports and leisure activities is not limited to this space, there are also many indoor spaces such as yoga studios, martial arts centers, etc. This paper, in the process of data screening, includes them in the urban sports and leisure space, and carries out a more detailed Research.

2. INTRODUCTION

As an indispensable and important part of the urban public service system, sports and leisure space is an important foundation for the comprehensive development of mass sports and an important guarantee for the promotion of national health. With the official issuance of the National Fitness Plan (2021-2025), China has made an important deployment of national fitness, and the National Fitness Plan has been developed in depth. China's mass sports have made remarkable achievements in terms of financial investment, construction of venues and facilities as well as the development of sports activities, and the construction of Healthy China and a Sports Powerful Nation has made a brand-new step forward. However, the problems of "unbalanced regional development of national fitness and insufficient supply of public services" still exist, and the equalization of basic public sports services is a must for the construction of "Sports Power and Healthy China". At present, the uneven and insufficient spatial distribution of sports and leisure facilities and the growing demand for physical exercise have become the main contradiction in sports development (Comber et al., 2011). Research on the spatial distribution of sports and leisure facilities can help to understand whether the residents' demand for sports is satisfied, and can also objectively assess the service capacity and supply quality of sports and leisure facilities, which can promote the development of the sports industry and has certain practical significance for popularizing national fitness.

The concept of sports and leisure space refers to the places and facilities established by the government or social forces or individual investment can meet the needs of residents' sports activities space, is available to the urban residents of the general public for a variety of physical exercise, rest and recreation places, sports and leisure space of the main forms of sports centers, stadiums, gymnasiums, parks, squares, and other indoor and outdoor activities with the function of sports and leisure(Roux et al., 2007).

Research on the spatial distribution of sports and leisure is more reflected in Europe, the United States, Japan and other economically developed countries, with the health significance of sports activities deep into the citizen groups, these countries began to commit to do a good job of these countries began to commit to do a good job of the layout of the venues of the sports facilities and the services of the mass sports activities.1985, the United States of America Flynn's "Rules for Sports and Recreational Facilities" from the perspective of urban planning on the sports facility. Erkip (1997) put forward the significant factors affecting the utilization rate of public sports facilities. Research shows that public sports facilities have a driving effect on the utilization rate of urban land (Talen et al., 1998). 2009, Flynn's "Rules for Sports and Recreational Facilities" has been a major research on sports facilities from the perspective of urban planning. In 2009, Brownson (2009) proposed that the accessibility of facilities, the maximum range of action of facilities, the layout of street areas and urban population density are the key influencing factors of layout. In the same year, Research shows that the difference of class has an impact on the balance of the spatial layout of sports facilities (Lamb et al., 2010).

With the growing demand for sports among residents, more scholars have invested in it to carry out more detailed Research on the spatial distribution of sports and leisure, Limstrand study the configuration of sports facilities at different distance ranges of New York citizens' residential places[7]; Limstrand et al. believe that the effect of the Norwegian Sports Service Facilities Distance Scale Research is of great significance(Lamb et al., 2010); Neutens et al. (2010) analyzed the spatial layout of service facilities based on GIS methodology; Higgs et al. (2015) used GIS technology to construct a national database of sports facilities and measure the accessibility of facility supply ; Lynch et al. (2019) researched the regional accessibility and availability of sports venues.

On the other hand, early scholars have explored the many potential uses and benefits of Points Of Interest (POI) data analytics in urban environments, suggesting that the collection and processing of data that people openly share can be used to design our future cities.

Lan et al. (2018) analyzed the spatial distribution characteristics of restaurants within the fifth ring road of Beijing by using Gaode POI data, and comprehensively analyzed the data for many years to complete the characterization of the evolution of the restaurant space, and came to the conclusion that the results obtained from POI data are more accurate and objective, which is a meaningful attempt to analyze the data and information mining in the era of big data (Lan et al., 2018); Shi et al. (2020) proposed a method of identifying poverty areas through multi-source remote sensing and POI data, and took Chongqing as an example to complete the Research, and the results show that POI data is the most important factor in assessing poverty areas, and the effective identification of poverty areas is also conducive to providing more scientific guidance for the government's poverty alleviation and other related work; Zhai et al. (2018) proposed a method of identifying the service radius of urban parks by using the cell phone signaling data, and used one week of cell phone signaling data to identify the service radius of 46 parks, taking Shanghai as an example, and at the same time analyzed the reasons for the difference in the service radius by combining several factors, and finally summarized the limitations and shortcomings of the use of cell phone signaling data, which is a very valuable Research; Some scholars applied POI data to analyze the public recreational space in the existing researches, but there were fewer researches on the spatial distribution of sports venues of different functions and types. There are also some scholars focusing on the research of outdoor space such as urban green parks, such as urban parks and green spaces in terms of fair performance, accessibility, etc., but there is a lack of research on the spatial distribution characteristics of public sports venues, gyms, etc. (van Lenthe & Mackenbach, 2005).

In fact, with the scientific and diversified development of fitness, the majority of young and middle-aged groups tend to give priority to public stadiums and gyms as sports venues. Therefore, Research on the spatial distribution characteristics of such urban sports facilities and their spatial fairness not only conforms to the diversified demand characteristics of the current residents for sports facilities, but also can evaluate the spatial distribution of sports facilities in combination with the local population and the urban distribution status of public facilities, and provide suggestions for the rational distribution of urban sports facilities, and more importantly, it is significant for the sustainable development of the country in all aspects. In this paper, the spatial distribution characteristics of sports and leisure facilities in Suzhou were researched by using ArcGis software, Nearest Neighbor Index, Kernel Density Estimate, Standard Deviational Ellipse and other methods, and rationalization suggestions were made for the planning and development of sports venues in Suzhou. Rationalization suggestions were made for the planning and development of sports venues in Suzhou.

3. DATA AND METHODS

3.1. Research Area and Data Sources

Suzhou, a municipality in Jiangsu Province, is an important constituent of the Shanghai Metropolitan Area and Suzhou, Wuxi and Changzhou Metropolitan Area, and has been approved by the State Council of China as one of the important central cities in the Yangtze River Delta. Suzhou has five districts and four county-level cities under its jurisdiction. Through the newly released "2022 Suzhou City National Economic and Social Development Statistics Bulletin", the total household population at the end of the year was 7.747 million, an increase of 1.6% over the previous year, and the natural population growth rate declined by 0.6 per thousand. The resident population at the end of the year was 12.911 million, an increase of 0.5% from the end of the previous year, and the urbanization rate of the resident population was 82.12%.

The base map data of this Research comes from the National Geographic Information Resources Catalog Service System (www.webmap.cn). The POI data of Suzhou City in 2022 were obtained

through Python programming software, and the keywords of sports and leisure and sports venues were searched, and a total of 4,321 POI data of leisure facilities were obtained.

3.2. Methods

3.2.1. Nearest Neighbor Index

Nearest Neighbor Index (NNI) is a geographic indicator used to describe the degree of mutual proximity of point elements in geographic space, which can reflect the spatial distribution characteristics of point elements. When the nearest neighbor index is close to 1, it shows random distribution; when the nearest neighbor index is less than 1, it shows aggregated distribution; and when the nearest neighbor index is more than 1, it shows uniform distribution.

In ArcGis, its calculation formula is as follows:

$$nni = d_0 \,/\, de \tag{1}$$

In the formula: nni is the nearest-neighbor index, d_0 is the observed value of the average nearest-neighbor distance for the location of point elements, and de is the average distance of the nearest-neighbor points for the same number of point elements under the desired distribution.

3.2.2. Kernel density estimate

Kernel Density Estimate (KDE) is a spatial density analysis method based on the clustering algorithm of the data density function. Kernel density analysis is the most intuitive way to measure the degree of aggregation of point elements, which can be used to show the number of points of interest in a single area and intuitively reflect the results of the analysis, and also be used to compare the densities of different areas. The larger its value, the more concentrated the distribution of senior leisure facilities, and vice versa.

In ArcGis, its calculation formula is as follows:

$$\int_n^{\wedge}(x) = \frac{1}{nh}\sum_{i=1}^{n} K\left(\frac{x_i - x}{h}\right) \tag{2}$$

In the formula: f(x, y) represents the kernel density value; h represents the search radius; xi and yi represent the coordinates of element i within the search radius; n represents the number of points of interest within the search radius; and x and y represent the center coordinates of the raster image elements to be calculated.

3.2.3. Standard deviational ellipse

Standard Deviational Ellipse (SDE), is a common method used to characterize the spatial directional distribution (Lefever, 1926), which can be widely used to analyze the centrality, spreading, and directional characteristics of spatial data. The starting point of this method is the mean center of the spatial elements within the measured area, and then the standard deviation of the x-coordinate and y-coordinate are analyzed separately to find out the axis of the ellipse. The long and short axes of the ellipse, the center of the circle and the angle of rotation, are the main parameters involved in the method. Among them, the direction of the distribution of spatial elements is represented by the long axis, the longer the long axis, the stronger the direction of spatial elements; the distribution range of spatial elements is represented by the short axis, the longer the short axis, the wider the distribution range of spatial elements. The concentration of the distribution of spatial elements is expressed by the area of the ellipse, and the smaller the area, the higher the concentration of the distribution of elements.

3.2.4. Multiple Linear Regression

Multiple Linear Regression (MLR) is a statistical analysis method used to explore the effect of independent variables (two or more) on the dependent variable. The model can accurately predict and

explain changes in the dependent variable, better reflecting the interaction between independent variables as well as the interaction between independent and dependent variables. Meanwhile, multiple linear regression allows causal inference, which is important in many empirical research.

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + ...+ \beta kXk + \varepsilon \quad (3)$$

In the formula: Y represents the dependent variable, X1, X2,... , Xk represents the k independent variables, β0 represents the constant, β1, β2,... , βk represent the regression coefficients of the corresponding independent variables, and ε is the error term.

4. RESULTS

4.1. Nearest neighbor index analysis

From the average NNI (Figure 1), sports and leisure facilities in Suzhou City as a whole show strong agglomeration distribution characteristics, with a p-value of 0.000 and a confidence level of 99.99%. Outdoor recreation facilities in Suzhou are agglomerated distribution, not random distribution.

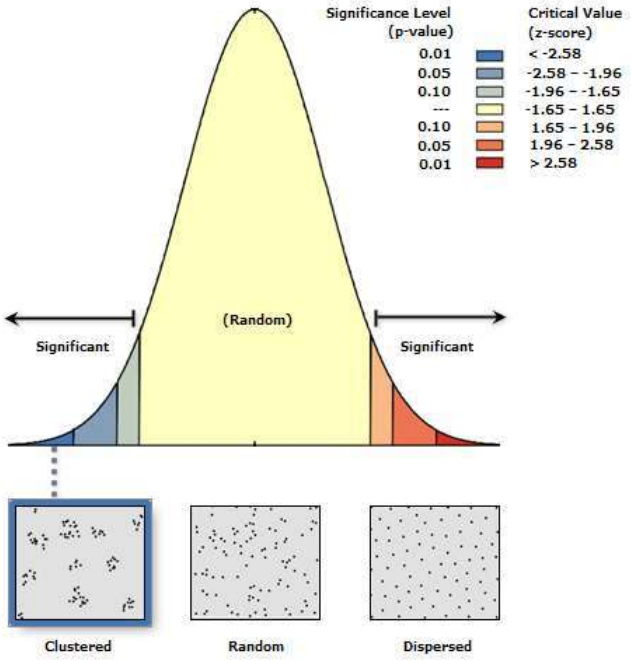

Fig. 1 Average NNI summary for sports and leisure facilities in Suzhou

4.2. Directionality Analysis

The SDE analysis was used to further analyze the direction of the spatial distribution of sports and leisure facilities in Suzhou City (Figure 2).

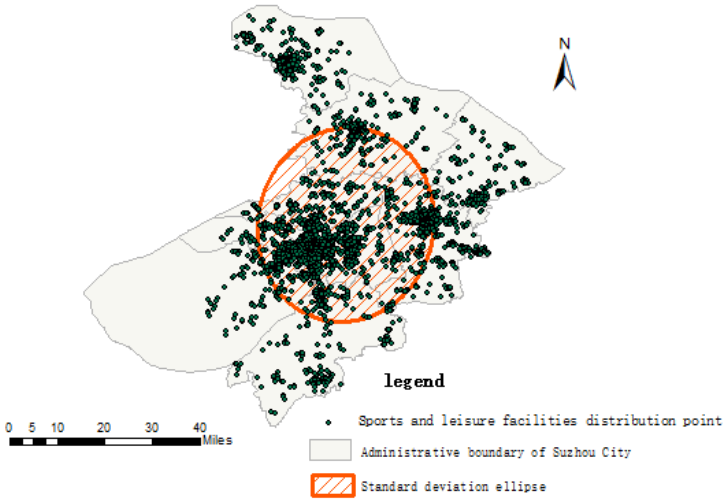

Fig. 2 SDE analysis of sports and leisure facilities in Suzhou

The spatial distribution direction of sports and leisure facilities in Suzhou City is northeast-southwest, and the direction angle of the ellipse is 12°54′. The difference between the long and short semi-axes of the standard deviation ellipse in Suzhou is small, the standard deviation ellipse is similar to a circle, and the direction of the distribution is not obvious, and the whole ellipse is mainly located in the central part of Suzhou, so it can be seen that the spatial distribution of the overall sports and recreation facilities is centered on Gusu District, and becomes a clustered distribution (Table 1).

Tab. 1 Parameter results of SDE analysis of Sports and leisure facilities in Suzhou

Element	Center coordinates	Long half-axis (km)	Short half-axis (km)	Azimuths
Sports and leisure facilities	120°42′36″, 31°22′12″	0.26	0.29	12°54′

4.3. Moran's I index and kernel density analysis

The global autocorrelation Moran's I index is an indispensable step in the empirical analysis of spatial measures. It can be used to analyze whether the POI point data exhibit a spatially correlated distribution, and therefore determine whether a more in-depth spatial statistical analysis of the POI data obtained in this Research is necessary. Based on the principle of Moran's I index, it was calculated using the GeoDa software and the results were obtained as shown in Fig. 3. The global spatial autocorrelation Moran's I index was 0.395 with a p-value of 0 and a z-value of 26.286. The results indicate that the POI point data exhibit a very significant positive spatial autocorrelation in space rather than a random distribution (Fig. 3).

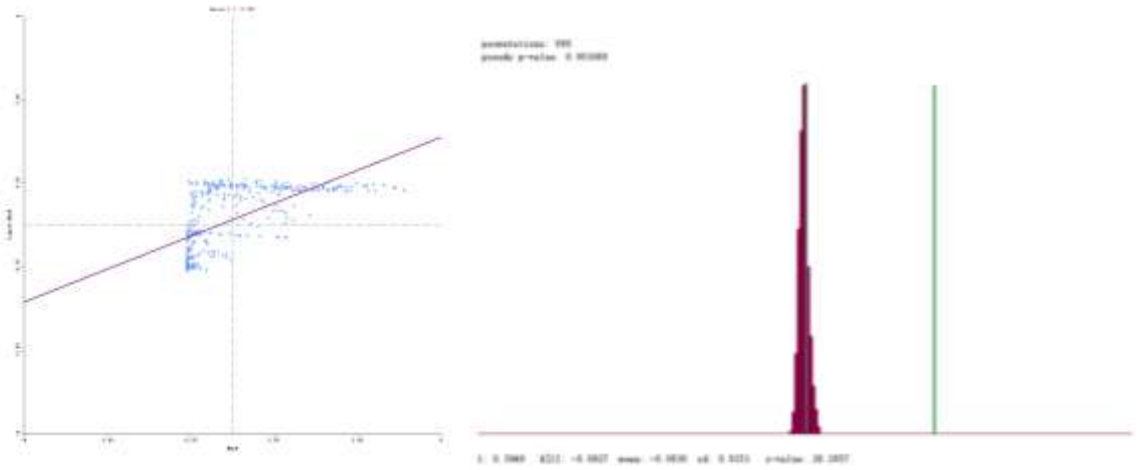

Fig. 3 Moran's I index of global spatial autocorrelation for sports and leisure facilities in Suzhou

Based on this result, KDE was performed using ArcGIS software. In the KDE, the choice of search radius has a great influence on the results. The spatial distribution of sports and leisure facilities places in Suzhou City shows the trend of center aggregation and partial diffusion. In the process of utilizing the KDE, through different attempts, the comprehensive estimation of the bandwidth of the reasonable interval of 5-8km, so the search radius is set to 6km, according to the natural breakpoints method is divided into 9 levels, to get the KDE distribution of the sports and recreation facilities places in Suzhou City (Figure 4). It can be found that:

(1) In Suzhou City, the distribution of sports and leisure facilities shows obvious spatial differentiation, in which the core area with a higher degree of agglomeration is located in the old city. Spreading outward from this area as the center, the density of sports and leisure facilities gradually decreases until Jinji Lake, Huqiu Wetland Park, Wangshan Scenic Area, Shihu Scenic Area, Yangcheng Lake Scenic Area and other areas. In these areas, the phenomenon of small-scale aggregation has also gradually emerged, manifesting itself in the emergence of sub-high values of density.

(2) At the district level, sports and leisure facilities have significant spatial aggregation. The junction zone of Gusu District, Wuzhong District and Huqiu District is a high-density aggregation center, and its spatial structure shows the characteristics of interconnection and continuous distribution. In some areas, such as Wujiang District, Changshu City, Kunshan City, Zhangjiaxiang City, and Taicang City, there are also a few "isolated islands" point-like distribution. Among them, the old city and its surrounding areas are the main ones, and this phenomenon is consistent with the fact that the old city and its surrounding areas were developed earlier, and the urban construction has become saturated, densely populated, and the service facilities are more complete.

(3) Overall, the distribution of sports and leisure facilities in Suzhou is characterized by "central aggregation - peripheral dispersion". Specifically, sports and leisure facilities in the city center show a high density of agglomeration, with the gradual increase in the distance from the center, the density of the circle type decreasing trend, and a small number of point-like distribution of agglomeration in the periphery of the city. In recent years, as the scale of the city continues to expand, ancillary service facilities, including sports and leisure facilities, have also expanded, showing an "outward-looking" development trend.

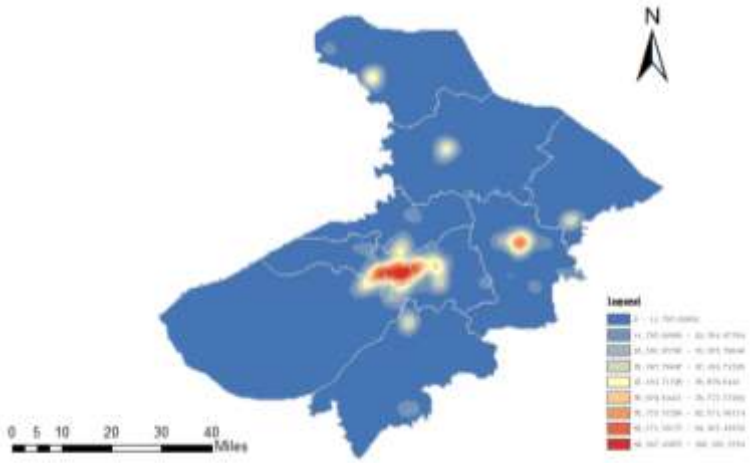

Fig. 4 KDE of sports and leisure facilities in Suzhou

4.4. Distribution Factor Analysis

Understanding the influencing factors of the spatial distribution of urban sports and leisure facilities helps to analyze the spatial distribution characteristics, according to the relevant Research, most of the urban area sports and leisure facilities distribution design will consider the urban economy, leisure industry development conditions and other practical factors (Li et al., 2022); some scholars have also emphasized that the space of the sports and leisure facilities are affected by the subway, public transportation stations and other public transportation factors (Xiao et al., 2022); the layout of public facilities The layout of public facilities needs to be adjusted according to the population to ensure equal opportunities; therefore, demographic characteristics should also be included in the accessibility analysis (Carlson & Owen, 2021). In summary, combining the characteristics of sports and leisure facilities and the available data, we have sorted out the factor variables that may affect the spatial distribution of sports and leisure facilities and the corresponding specific indicators.

Table. 2 Variables design of the regression model of spatial distribution of sports and leisure facilities in Suzhou

Variables board		Variable Settings	Indicator design
implicit variable	POI density	Density of outdoor recreational facilities	Number of outdoor recreation facilities (units)
independent variable	Demographic factors	Size of population	Resident population (persons)
	socio-economic base	Level of urban and rural development	Urbanization rate (%)
		economic vitality	Total GDP (million yuan)
		social consumption level	Total value of social consumer goods (million yuan)
		Leisure industry level	Total leisure industry (million yuan)
	transportation factor	Bus station	Number of bus stops (pcs)
		MRT station	Number of subway stations (pcs)

In analyzing the spatial distribution of sports and leisure facilities, the resident population as the target population served by sports and leisure facilities can provide a strong basis. In addition, the urbanization rate can also be used as a reference factor, as it can reflect the degree of urbanization and the distribution trend of sports and leisure facilities. Meanwhile, the economic condition is also one of the important factors. The total GDP and total social consumer goods are the key elements to

guide the construction and operation of sports and leisure facilities. In addition, the total amount of leisure industry also reflects the size of local leisure demand and the importance of the leisure industry, which also has an impact on the distribution of sports and leisure facilities. Finally, the number of bus stops and subway stations is an important reflection of the density and convenience of the transportation network, which also affects the ease with which residents can access leisure facilities. Considering these factors can analyze the distribution of sports and leisure facilities more accurately.

The influencing factors of the spatial distribution of sports and leisure facilities in Suzhou are analyzed based on the multiple linear regression model. After testing, the indicators of urbanization rate, total social consumer goods, and the number of metro stations, the variance inflation factor (VIF) are all greater than 30, and the model has serious covariance problems. After removing the above three interfering indicators, the mean value of variance inflation factor (VIF) is 2.57 and the maximum value is 4.12, and there is no significant covariance problem in the model. The R-square after data processing is 0.987, and the explanation degree of the model results is 98%.

Table. 3 multiple linear regression model

	Standardized coefficient	t	significance	covariance statistics	
	Beta			Tolerance	VIF
Urbanization rate (%)	0.386	3.757	0.033*	0.404	2.473
Total GDP (million yuan)	0.432	4.776	0.017*	0.522	1.915
Total leisure industry (million yuan)	0.933	7.036	0.006**	0.243	4.12
Number of bus stops (pcs)	-0.208	-1.748	0.179	0.301	3.318

*p<0.05 **p<0.01

In this multiple linear regression model, the density of sports and leisure facilities is influenced by the resident population, total GDP, total leisure industry and the number of bus stops. The analysis results of this model show that the effects of resident population, total GDP and total leisure industry on the dependent variable are significant, while the effect of the number of bus stops on the density of sports and leisure facilities does not reach the level of significance.

5. DISCUSSION

This Research takes Suzhou City as a case study and selects sports and leisure facilities as the research object. Based on POI data using various methods such as nearest neighbor index method, kernel density estimation method, standard deviation ellipse method, the spatial distribution pattern of recreational facilities in Suzhou City was analyzed from different angles. On this basis, a model was constructed to investigate the factors influencing the formation of the spatial distribution pattern of this element, and the results are as follows: (1) Through the analysis of the spatial pattern of the sports and leisure facilities in Suzhou, it was concluded that their spatial distribution is generally characterized by "central aggregation - peripheral dispersion". Sports and leisure facilities in the central urban area have formed a large-scale piecemeal distribution of medium- and high-value agglomerations centered on the old urban area; there are a small number of "isolated islands" in the area outside the central urban area with a small range of point-like agglomerations. (2) From the viewpoint of factors influencing the spatial distribution of sports and leisure facilities, the influence of resident population, total GDP and total amount of leisure industry on the dependent variable is significant, among which total amount of leisure industry has the most significant influence.

The results of the research correspond to the findings of previous research, as shown below. Some Researchers have explored the issue of social justice in cities from the perspective of urban sociology and tried to justify the inequality mechanism from the perspective of the physical structure of the city (Tabrizi & Ghasemi, 2013). They recognize the natural and socio-economic disparities, which have an impact on urban land use. The political economy of spatial theory analyzes how public service

land use is allocated according to the policies of city managers. Within the city of Suzhou, the distribution of sports and leisure facilities shows obvious spatial differentiation, in which the core area with a high degree of agglomeration is located in the old city, and the area with a high level of economic and cultural development. In the Research on the spatial layout of urban sports facilities in Jinan City, Yuan et al (2019). proposed that the layout planning of public sports facilities should follow the corresponding patterns and principles. The layout of sports and leisure facilities should fully consider factors such as urban public transportation and reasonable service radius of sports facilities. However, the Research is still in the theoretical stage, there is no micro research through the data, this paper analyzes the distribution of sports and leisure facilities in combination with the number of public transportation stops through poi data, which provides a research basis for the theory provided.

At the same time this paper has some shortcomings. The point of interest data itself has the advantages of precision and easy access, which makes the analysis of the spatial pattern of the stadium more intuitive, but because it is not easy to obtain the specific area of each sports and leisure, passenger flow, and expansion, demolition and other real-time information, so it is difficult to target in-depth analysis.

6. CONCLUSION AND RECOMMENDATIONS

6.1. Conclusion

Through the basic situation of sports and leisure facilities in Suzhou City, including the number, category, distribution and other basic information for statistical analysis, comprehensive reasoning, the use of spatial analysis methods and ArcGIS technology to visualize the spatial layout of sports and leisure facilities in Suzhou City, the Research can draw the following conclusions:

(1) Suzhou City has a long history, different space construction history and development degree is different, will inevitably result in significant regional differences in sports and leisure facilities, the level of configuration of public sports facilities between urban areas is not balanced, Wuzhong District, Gusu District, for example, the overall density of leisure and sports facilities are more than the relatively backward areas such as Wujiang District, Xiangcheng District, Zhangjiaxiang City, and the further the distance from the old urban areas of Suzhou, the key areas of economic development. The farther away from the old city of Suzhou and the key areas of economic development, the more scarce the allocation of sports and leisure facilities is as the main feature.

(2) The overall spatial distribution of public sports facilities in Suzhou is a cohesive distribution type, while the overall distribution gap of public sports facilities in Beijing is very large, and there is a serious unfair phenomenon. Suzhou City sports and leisure facilities "core an edge" structure is obvious, the core density gradually reduced to the outside, the distribution of hot and cold spots presenting the center of the city presents a cohesive distribution, the center of the transition zone to the remote urban areas is not a significant feature of the transition zone, remote urban areas present a discrete distribution.

(3) Population factors, economic factors, transportation environment and other factors have obvious influence on the spatial layout development of public sports facilities in Suzhou. The distribution of public sports facilities shows obvious policy-oriented agglomeration, dependence on natural conditions, concentration of population-rich areas, and high economic level areas with high number of characteristics.

The distribution of sports and leisure facilities accessibility in Huchu District, Changshu City and Zhangjiaxiang City of Suzhou City is not balanced and cannot meet the daily needs of residents.

6.2. Recommendations

Research on the spatial layout of sports and leisure facilities helps its distribution to shift from the scale and uneven distribution characteristics to a standardized and equitable distribution pattern, which helps to promote spatial equity and justice. In view of the current distribution of sports and leisure facilities in Suzhou, the following suggestions are put forward:

(1) The distribution of sports and leisure facilities should match the distribution of the resident population: in addition to further increasing the number of sports and leisure facilities, special attention should be paid to improving the equality level of accessibility. Considering only the economy without taking into account the matching of population and sports facilities has resulted in community sports facilities not being able to serve all residents in a fair and reasonable manner. In fact, when increasing the number of community sports facilities, full consideration should be given to the correlation between population distribution and facility supply, so as to improve the equality level of access to public resources, effectively increase the frequency and duration of residents' physical exercise, and promote the vigorous development of mass sports.

(2) Enhancing the accessibility level of sports and leisure facilities through urban renewal: Suzhou's urban construction is in a dual-track parallel development stage of urban renewal and new town expansion, coinciding with the weak links of sports distribution in the post-development areas of Suzhou. Regional characterization shows that urban renewal has a positive effect on improving the accessibility of sports and leisure facilities. Planning various public service facilities, including sports and leisure facilities according to geospatial, facility characteristics and population distribution in the urban renewal process, can effectively improve the current problems in accessibility. The focus of urban renewal is to combine the renewal of old communities and revitalization of existing land to place sports and leisure venues.

In summary, if Suzhou City wants to effectively implement the social sharing of sports and leisure resources, it needs to introduce a series of incentives and effective management mechanisms, establish a perfect handling mechanism for possible risks, and for institutions, enterprises, shopping malls and other places, to motivate them to open gyms, indoor courts, and other public sports facilities venues in the open space of the building, platforms, or indoor space, so that they can effectively consider the residents, and to provide a solid foundation for the national fitness, and the The construction of a healthy China has laid a solid foundation.

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