Market Statistics Analysis of the Tourism Industry in the Context of COVID-19

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Abstract. The COVID-19 epidemic has made a great influence on the international overall economic environment, and the tertiary industry represented by tourism has been a hard hit in these three years. This essay uses the Chinese tourism sector as its research subject. In this article, statistics on the tourism business before and after the COVID-19 epidemic are sorted and compared to examine its development features, causes of the phenomena, and current position. In accordance with the data research, it is found that the development of tourism is highly sensitive to the COVID policy and the economic situation, and there is also a large gap between regions and urban-rural areas in tourism development. At present, it still needs more time and measures to promote the industry to recover to pre-epidemic levels. At the end of the paper, the relevant feasibility recommendations will also be given based on the results of the study.

Keywords: COVID-19 crisis, regional and urban-rural differences, tourism industry, statistics analysis.

1. Introduction

In the past two decades, the economy in China has rapidly developed, and Engel's coefficient has declined, the proportion of people's spending on education development and enjoyment has increased a lot. Tourism is an important part of the Chinese tertiary industry, which can meet people's ever-increasing material and cultural needs. The global tourism industry is referred to as tourism. It is primarily engaged in hosting tourists and offering transportation, sightseeing, lodging, catering, shopping, and other services since it has tourism resources and facilities, and at the same time can drive local derivative industries and ever promote economic growth.

From the perspective of the current situation in China, tourism as an important part of the tertiary industry is domestically and internationally affected by time and the overall economy and environment in comparison with the primary and secondary industries. At the 95% significance level, an analysis of data from ASEAN countries in the past revealed a two-way causal relationship between COVID-19 and tourist arrivals. The findings showed that the COVID-19 epidemic could have a significant negative impact on tourism [1].

This paper will analyze the development and changes in tourism from 2016 to 2020 and combine them with the data published at the beginning of 2023 from the perspective of international tourism, domestic tourism, urban and rural differences, regional differences, and destination preference. And eventually, find out the development of tourism is elastic and highly sensitive to the policies and economic environment.

The article is structured as follows: Section 2 is the current situation analysis and data comparison from various aspects, and Section 3 is the conclusion of the paper also included some recommendations based on the research.

2. Current Situation and Analysis of Tourism

2.1. International Tourism

2.1.1. Inbound Foreign Tourists

The tourism industry is highly dependent on and sensitive to the external environment. Cross-border tourism is the most obviously affected by the entry policies and economic situations of various countries [2]. Since the end of 2019, due to the COVID-19 outbreak, many countries had restricted entry, transnational tourism has been hit hard and international tourism has been suspended as well [3]. According to previous data from 2016 to 2019, cross-border tourism shows differences in gender, age, and different reasons. As shown in figures 1 and 2, according to 2019 statistics, the proportion of inbound foreign tourists is about 1.4: 1. The number of males is about 28.8 million, nearly 9 million more than 20 million females. In terms of age distribution, foreign inbound tourists are mainly concentrated in the age range of 25 to 44. And the tourists who are under the age of 14 or over 65 take the lowest proportion.

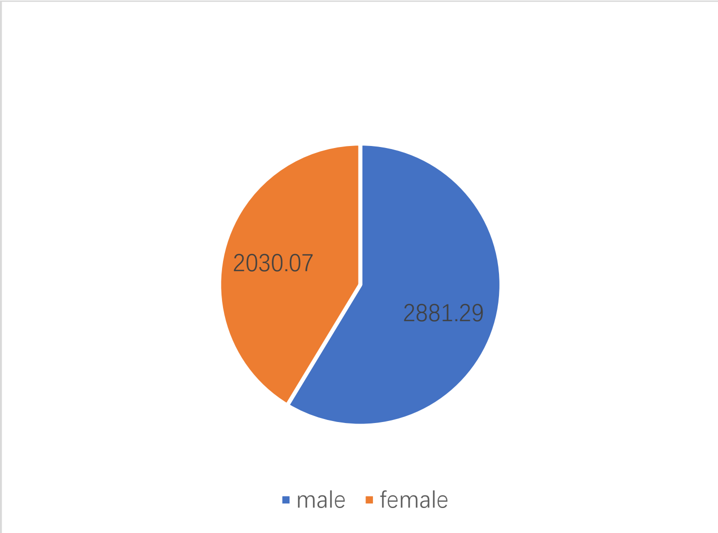

Fig 1. 2019 Number of Inbound Foreign Tourists

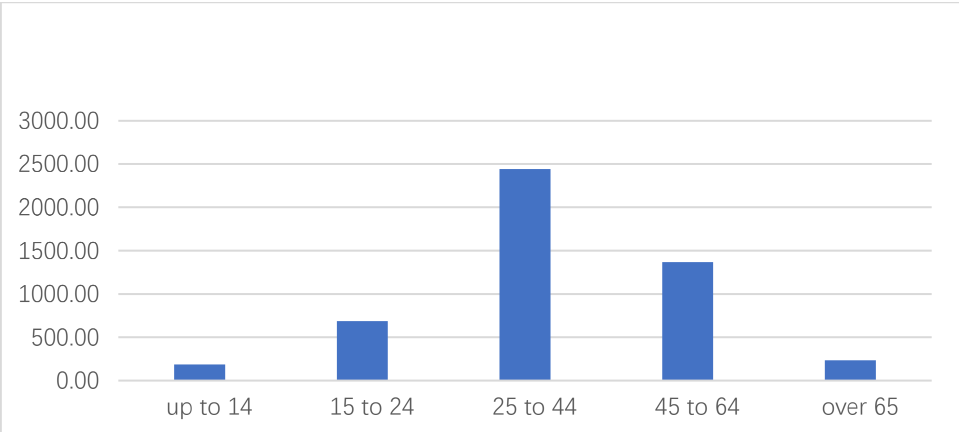

Fig 2. 2019 Age of Inbound Foreign Tourists

2.1.2. China Regional International Tourism

Domestically, the international tourism revenue shows regional differences. The data comes from 31 provinces and cities except for Hong Kong, Macao, and Taiwan (Figure 3). Central and southern China and eastern China have the highest international tourism revenue. Especially, Guangdong contributes more than 20 billion dollars to the international tourism revenue of central and southern China [4].

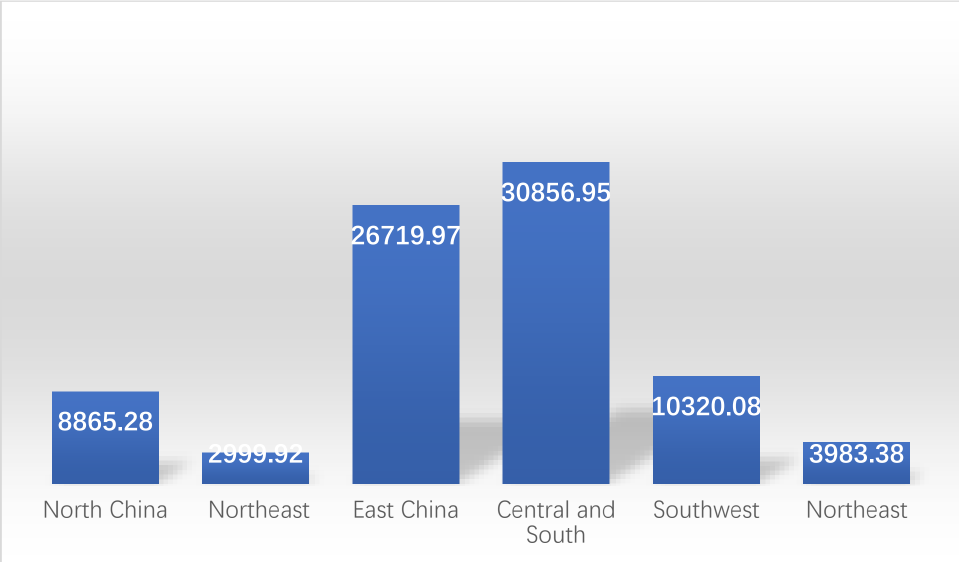

Fig 3. International Tourism Revenue 2019 (million dollars)

Table 1. Stem-and-Leaf Display of Domestic Tourism Revenue by Region In 2019 (million dollars)

Stem unit:	1000
0	0 1 1 3 3 4 5 6 6 7 9 9
1	0 2 3 7
2	0 3 5 7 7
3	4 4 4 4 5
4	7
5	1 2
6	
7	
8	2
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	5

It can be seen in the steam-and-leaf display that the data in Guangdong is much higher than in the other cities, and there is a huge gap between max and min data (Table 1). The northeast and northwest regions have the fewest international tourism income. So in this steam-and-leaf display, the differences between provinces and cities and between regions can be seen, and most of the data is concentrated within a hundred million dollars. It also shows the current situation that Chinese overall international tourism revenue was depressed in 2019.

At the same time, from the perspective of the composition of international tourism revenue shown in Figure 4. Long-distance transportation, civil aviation, railway, and other transportation revenue accounted for the largest proportion which was reaching more than 60% of the total revenue, and city transportation, catering, and entertainment accounted for the smallest proportion.

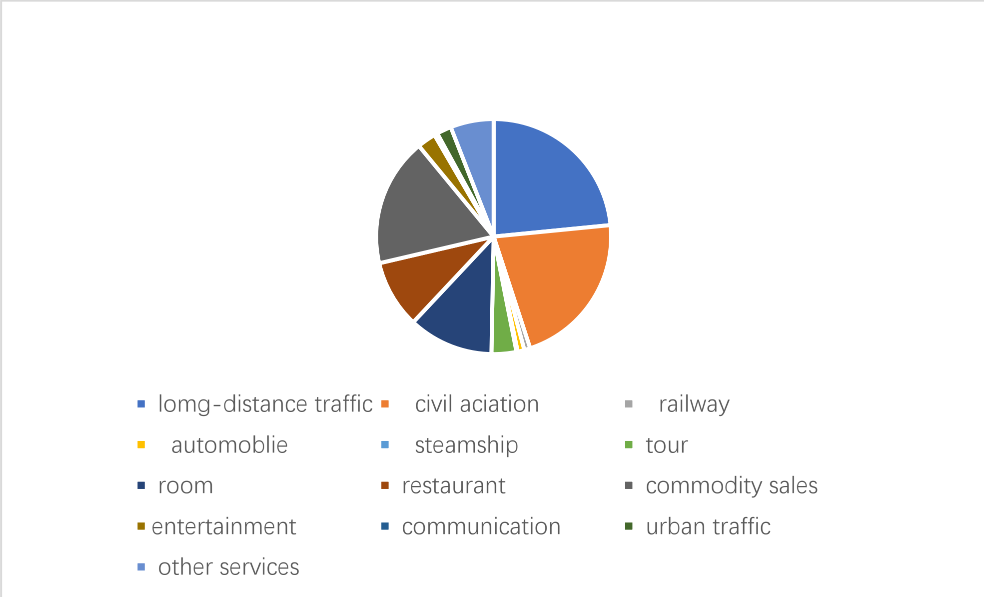

Fig 4. Composition of International Tourism Revenue 2019

2.1.3. The World International Tourism

Earlier studies demonstrated that the COVID-19 epidemic is more likely to generate illnesses and fatalities in nations with significant levels of international travel. Even after adjusting for additional socioeconomic COVID-19 epidemic factors and regional dummies, this connection remains strong. According to the estimates, a 1% increase in inbound and outgoing travel is linked to 1.2% and 1.4% increases in confirmed COVID-19 cases and fatalities, respectively [5]. This led many countries to restrict entry during the epidemic. Looking at the international community, the international tourism expenditure and income statistics are as follows, the data derived from countries that did not ban international tourism in 2019. However, some countries like China, Singapore, New Zealand, Canada, and Great Britain, that have restricted entry during the outbreak are not included in the chart [6]. As can be seen from the published data, the world's overall international tourism expenditure is less than the revenue (Table 2 and 3).

Table 2. Five-Number Summary（Expenditure USD 100mn） 2019

Minimum	12
First Quartile	12
Median	79.5
Third Quartile	286
Maximum	286

Table 3. Five-Number Summary （Revenue USD 100mn）2019

Minimum	53
First Quartile	53
Median	184
Third Quartile	317
Maximum	317

From the perspective of tourism income around the world, 2019 decreased to a certain degree compared with 2018.

2.2. Domestic Tourism in China

During the four years from 2016 to 2019, the number of travel agencies in Figure 5, inbound and outbound tourists, and tourism revenue were continuously growing. However, the number of travel agencies decreased by over 7,000, and domestic tourism revenue dropped by 3 trillion yuan, lower than the level in 2016 due to the COVID-19 outbreak from 2019 to 2020. Chinese domestic tourism industry has suffered a huge blow and heavy losses. Some provinces and cities that rely on the development of tourism and the tertiary industry have faced large financial deficits.

In the post-epidemic period, people's travel destination choices and travel preferences have changed to some extent. During the epidemic, the way of road trips has become the first choice for more people. Self-driving travel, in comparison, interacts with safer individuals, such as family, relatives, and friends, and avoids direct contact with strangers, which is more beneficial for the ailment's control and prevention. The largest percentage of self-driving travel was 41%, followed by high-speed railway, bus, and airplane travel. According to a survey released by the China Tourism Academy on "Chinese people's readiness to travel after the pandemic." Self-driving travel has gradually replaced the conventional public transportation method, which was mostly centered on high-speed rail and airplanes. Some new trend has also been ushered in such as hiking, bicycling, motorcycling, and RV travel. Nowadays, more and more tourists choose to take short trips, and the choice of destinations has also shifted from megacities to uncrowded minority scenic spots. This promotes the control of the epidemic, people's health, and safety as well as having a positive impact on the economic development of small cities and counties [7,8].

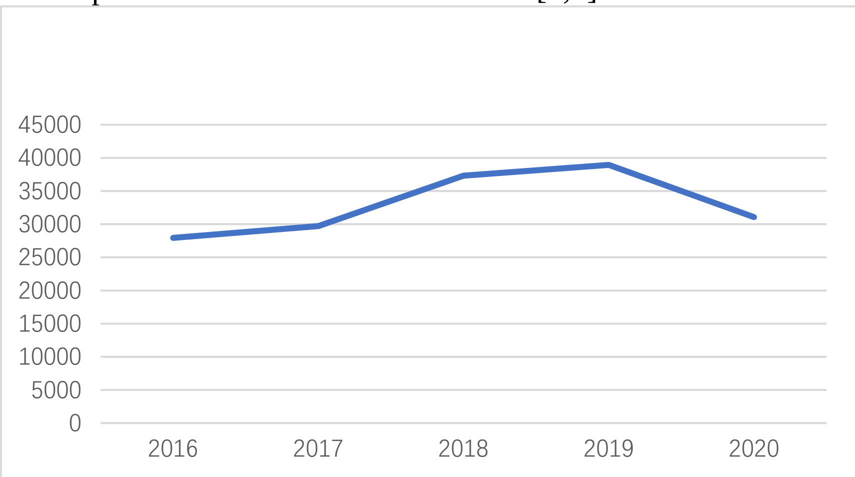

Fig 5. Number of Travel Agencies 2016-2020

As the data shown in Figure 6, the revenue of this industry mainly relies on domestic tourism, which reached a peak in 2019 and sharply went down in 2020. By contrast, international tourism generated lower revenue, and almost shut down in 2020.

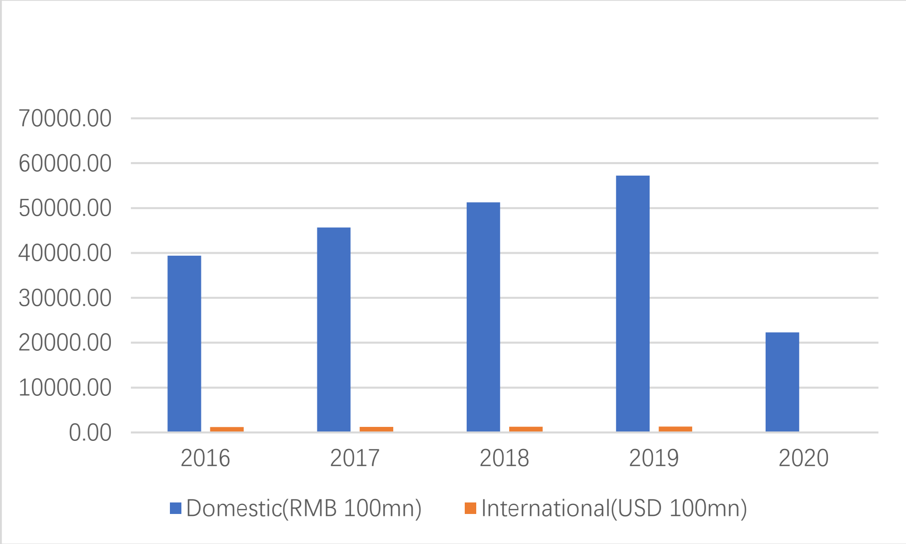

Fig 6. Domestic and International Tourism Revenue 2016-2020

2.3. Urban-rural Differences

2.3.1. Tourism Expenditure

Nowadays, China is faced with problems such as unbalanced economic development and large differences in urban and rural economic income levels. As an enjoyment and development expenditure, tourism is manifested in the differences between urban and rural areas due to the differences in income and economic level.

There is a gap in tourism consumption between urban and rural residents. According to the statistical findings of the domestic tourism sample survey, there were 3.246 billion domestic travel visits overall in 2021, up 367 million or 12.8 percent from the same period in the previous year (Coming back to 54.0 percent in 2019). There were 904 million people in rural areas, an increase of 11.1 percent, and 2.342 billion people living in urban areas, an increase of 13.4 percent. Domestic tourist income (total tourism consumption) increased by 0.69 trillion yuan, or 31%, over the same period the previous year to 2.92 trillion yuan (back to 51 percent of the 2019 level).

Urban inhabitants spent 2.36 trillion yuan on tourism, up 31.6 percent, while rural residents spent 0.55 trillion yuan, up 28.4 percent. The amount consumed per person per tour was 899.28 yuan, up 125.14 yuan or 16.2% from the same time the previous year. The per capita consumption among them increased by 16.0% for urban people to 1009.57 yuan and by 15.7% for rural dwellers to 613.56 yuan.

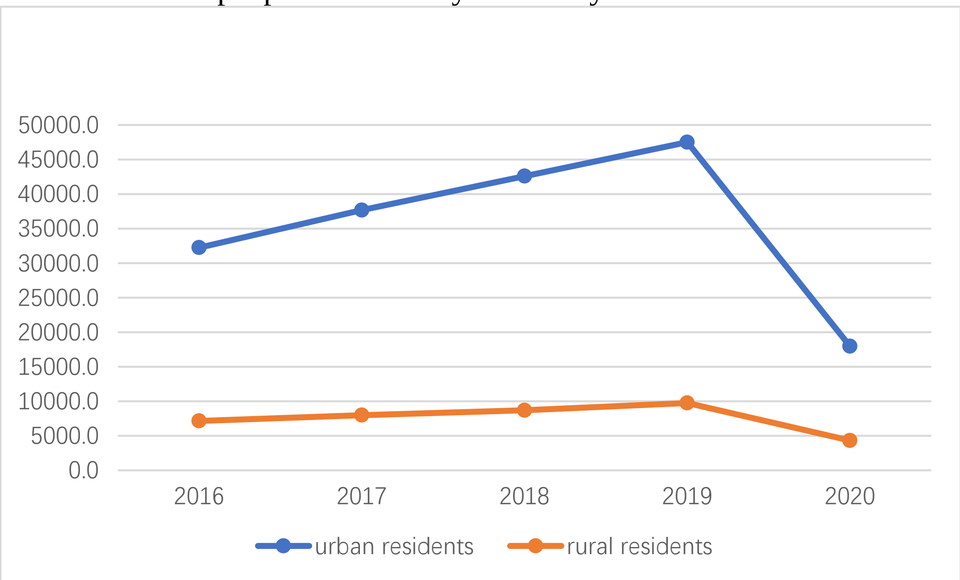

Fig 7. Total Tourism Expenditure of Urban and Rural Residents from 2016-2020

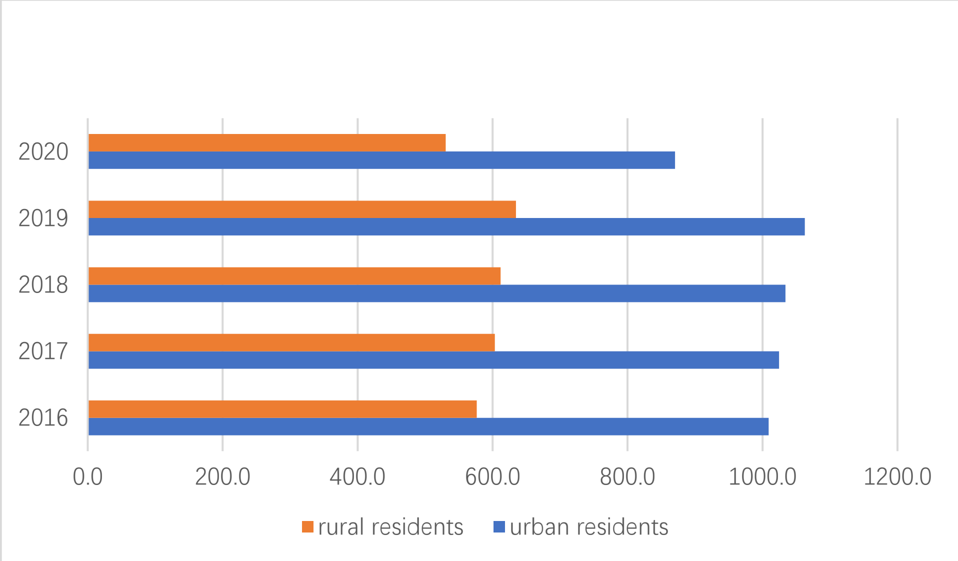

Fig 8. Per Capita Tourism Expenditure 2016-2020

The total and per capita tourism spending of urban people were significantly higher than those of rural residents, as shown in Figures 7 and Figure 8. Meanwhile, between 2016 and 2019, the tourism expenditure of urban residents had a more rapid growth than that of rural residents. But during the COVID-19 period in 2020, the decline in urban was also significantly greater than that of rural residents. On the whole, both urban and rural residents show a growing trend, but the urban-rural differences in tourism consumption are still significant.

2.3.2. Per Capita Disposable Income

The important reason for this is the difference between urban and rural residents ' income, economic foundation determines the superstructure. Income is the basis and premise of consumption, economic development degree, and residents' disposable income, it also determines people's consumption level. Tourism as an important pillar of the tertiary industry is to enjoy and develop consumption and has the characteristics of strong sensitivity to economic conditions.

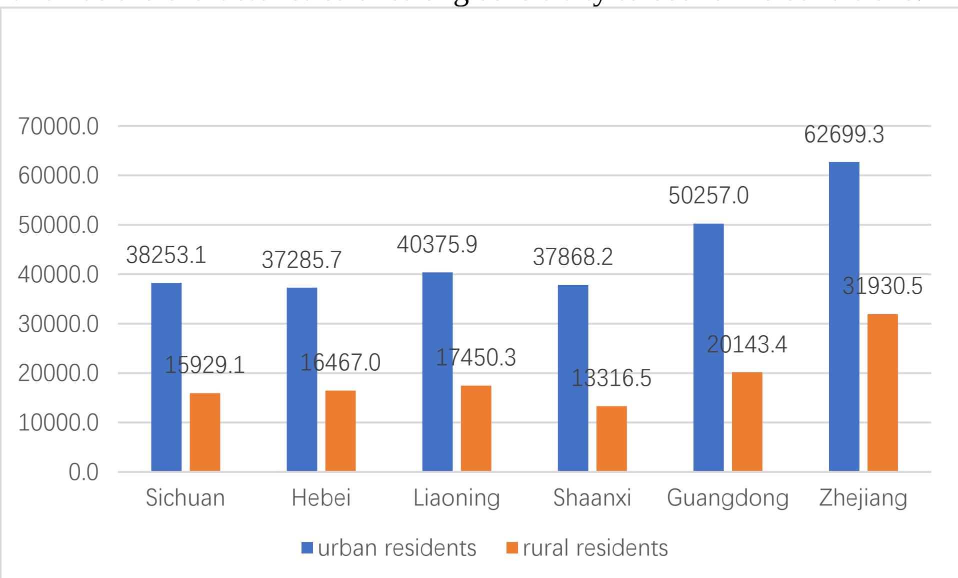

Fig 9. Per Capita Disposable Income 2020

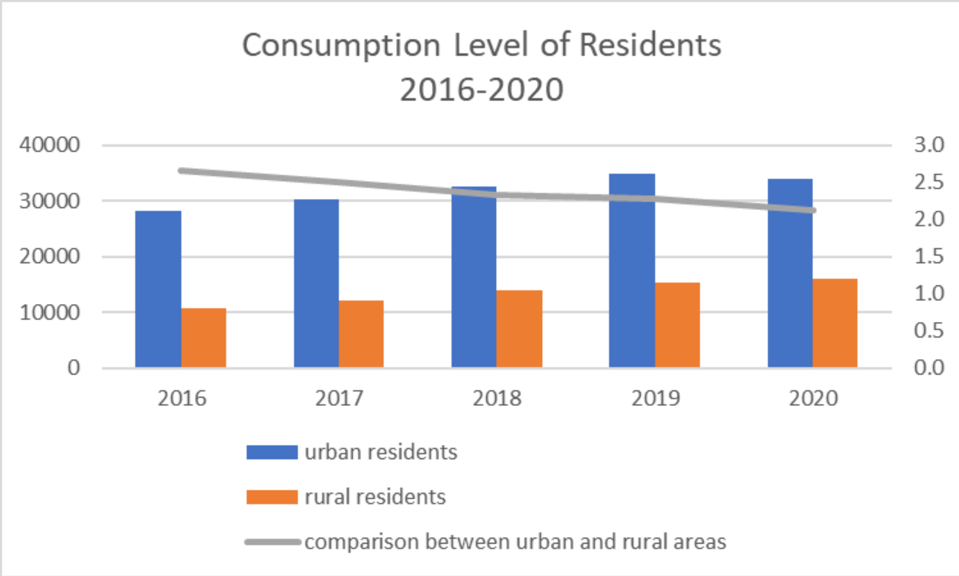

Fig 10. The consumption level of residents 2016-2020

The annual data of per capita disposable income for urban and rural populations are depicted in Figure 9. The data for 2020 are adopted, and five representative provinces are chosen (apart from municipalities immediately under the Central Government). Hebei Province in the north, Liaoning Province in the northeast, Sichuan Province in the southwest Shaanxi Province in northwest China, Guangdong Province in central China and South China, and Zhejiang Province in East China are used as examples to make the column statistical chart.

From the perspective of the consumption level comparison between urban residents and rural residents. A slight downward trend can be seen in Figure 10, however, the consumption level of urban citizens is still more than twice that of the rural residents. The gap that cannot be ignored still exists.

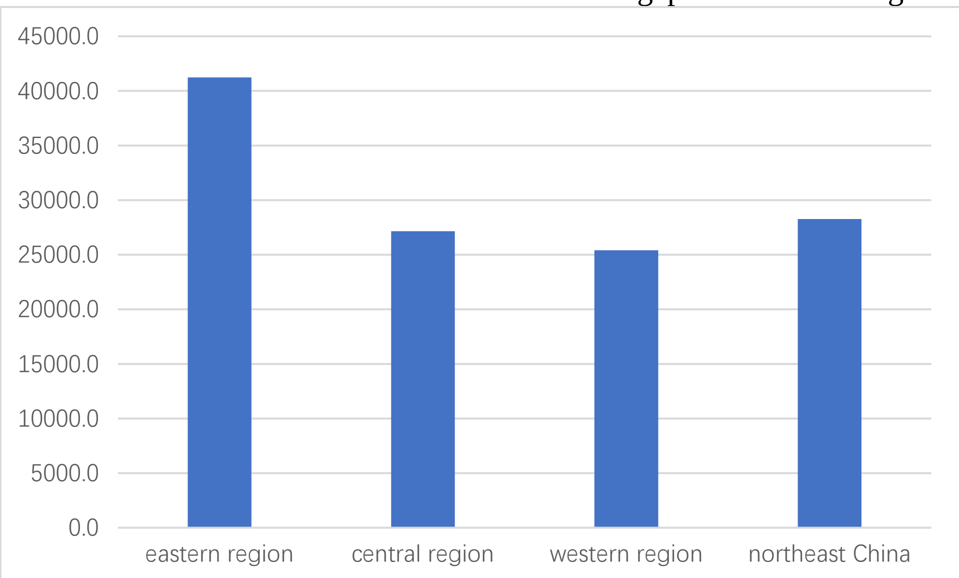

Fig 11. Per Capita Disposable Income by Region 2020

As can be seen in Figure 11, East China represented by Zhejiang Province has a developed economy with, a high per capita disposable income of residents. While the economic development of northwest China is relatively backward and per capita disposable income was lower than average. However, the income gap in Zhejiang and Guangdong provinces, which have higher per capita disposable income, is also higher than that of other provinces and regions, reaching more than 30,000 yuan. In the context of the overall well-off society in China, the average annual disposable income of urban and rural citizens, there is still a gap that cannot be ignored. The statistic also shows that the southeast coastal regions typically have greater per capita disposable income levels than the western and northern regions, which also reflects the situation of unbalanced development of the Chinese economy [9].

2.4. Current Situation in 2023

Starting from the end of 2022, the government announced the relaxation of COVID control and the lifting of cross-border travel restrictions. In accordance with the statistics, the number of domestic tourists nationwide exceeded 300 million during the Spring Festival, this data recovered to 88.6% in 2019. From the perspective of cross-border travel, since February 2023, travel agencies have resumed outbound group tourism and the number of cross-border tourists has recovered to 36.6% in 2019. It is noticeable that both cross-border and domestic tourists have flooded into several popular destinations, such as Changsha, Dali, Xi'an, and Nanjing during the Spring Festival, as well as Southeast Asian countries such as Thailand, Singapore, and Malaysia. After the outbreak, people prefer short trips in the choice of tourist destinations, and long-distance travel in Europe and the United States has not yet shown a significant recovery. In terms of future growth expectations, the search volume of Qingming and May Day holiday tourism products in related software has exploded, especially the May Day holiday, with a month-on-month increase of 187%. According to these data, the tourism industry is expected to return to the pre-epidemic level between May Day and summer vacation. Previous foreign scholars through the augmented SARIMA model estimated that the domestic tourism sector will be restored in a short time, while international tourism needs external intervention to speed up the recovery process [10].

3. Conclusion

The tourism industry has made great development in all aspects in recent years, but it shows the characteristics of great fluctuations due to the influence of the external economic environment.

This article analyzes international and domestic tourism as well as the urban-rural difference. The results show that the response trend of domestic and international tourism to COVID is the same, however, there are some differences in the response degree and recovery speed. The regional differences are still significant, domestic and international tourism expenditure and income in the southeast area and some central provinces account for the majority of the country. In addition, a noticeable gap between an urban area and a rural area can be seen in this paper. The gap in disposable income, expenditure on travel, and consumption level are narrowing down, however, it still cannot be ignored. In general, the Chinese tourism industry shows the characteristic of unbalanced regional and urban-rural development.

Aim at the above-mentioned problems, this article will give practical recommendations to solve them. In view of the current situation of sluggish development and the slow recovery of tourism under the influence of COVID, various regions conducted a detailed demographic analysis of tourists, mainly based on gender and age to provide the corresponding characteristic tourism services, so as to promote the recovery of the tourism business. At the same time, appropriately relax the difficulty of handling international tourism, shorten the application time, and increase the flight frequency. Finally, scenic spots can fully make use of social media to carry out online live-streaming to improve local visibility and attract tourists. In view of the problem of unbalanced development of the tourism industry, it is the pillar of the tertiary industry which belongs to the development and enjoyment consumption. The consumption used for tourism is often positively correlated with the local economic development level. Therefore, the national urban-rural coordinated development strategy and regional balanced development strategy should be implemented unswervingly. In addition, regulating the phenomenon of arbitrary charges in scenic spots and controlling the unlimited price increase of holidays is essential. The government could put into great play the macro-control role, reduce the required cost within a reasonable range, and enhance people's willingness and confidence in tourism consumption.

The data collected in this paper are mainly chosen from the 5 year time period from 2016 to 2020, as well as some official data published by the Ministry of Culture and Tourism and National Civil Affairs Administration at the beginning of 2023. The chosen time period maybe not be enough to predict future development trends accurately and this article lacks a more effective analysis model. Due to the limited time for the relaxation of COVID-19 epidemic control, follow-up research is lacking. Continuous observation and a more accurate calculated model are needed in the future.

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