

Study on Influence of the COVID-19 Epidemic on Tourism Consumption Structure in Shandong Province

Dongmei ZHANG*, Qinglin DAI

Taishan University, Tai'an 271000, China

Abstract At the end of 2019, the sudden outbreak of the COVID-19 epidemic brought great challenges to the world, and China's tourism industry suffered an unprecedented heavy blow. Exploring the impact of the epidemic on tourism consumption structure has become a research focus in the post-epidemic era. In this study, based on *Shandong Tourism Statistics Handbook* from 2018 to 2020, taking Shandong Province as an example, the changes of total tourism revenue and tourism consumption structure in Shandong Province before and after the COVID-19 epidemic were compared to predict the development of tourism in Shandong Province in the post-epidemic era and find out existing problems, and optimization paths were put forward for the development of tourism in Shandong Province in the post-epidemic era.

Key words COVID-19 epidemic; Shandong Province; Tourism consumption structure; Post-pandemic era

DOI:10.19759/j.cnki.2164-4993.2023.06.014

At the end of 2019, the COVID-19 epidemic broke out in the world and spread rapidly, which had a great impact on human life. As a result, China's tourism industry suffered heavy losses. It was originally in the Golden Week of the Spring Festival, but tourism enterprises had to close down because of the epidemic, which caused heavy losses. In 2020, the number of domestic tourists in China reached 2.879 billion, showing a decrease of 52.1% compared with the same period last year; and domestic tourism revenue reached 2.23 trillion yuan, with a year-on-year decrease of 61.1%^[1]. Now, China has entered the post-epidemic era. However, under the influence of COVID-19, new changes have taken place in people's consumption habits, tourism needs, travel methods, tourism psychology, etc. How the tourism industry accurately grasp people's changing needs in the post-epidemic era and quickly take corresponding measures is a problem that needs reconsideration and attention^[2].

There has also been some research on the impact of COVID-19 on the development of tourism in China. Wang Yucui and Wang Yuhua^[3] comprehensively analyzed the impact of COVID-19 on China's tourism industry, and proposed measures to accelerate the recovery and risk management of the tourism industry from the perspective of the government and tourism enterprises, so as to help revitalize and develop the tourism industry. Ba^[4] analyzed the current situation of tourism under the background of normalization of epidemic prevention and control, and put forward corresponding paths to the healthy development of tourism and related industries. According to the data of the Ministry of Culture and Tourism, Tian and Ma^[5] analyzed the challenges faced by tourism enterprises, tourism market and tourists under the background of

normalized prevention and control, and there were also opportunities for tourism development. In order to realize the recovery and development of tourism in the period of normalized prevention and control, four suggestions were put forward. Yue^[6] analyzed tourists' psychological change trends, the development trend of tourism consumption, the development trend of tourism market and the development trend of tourism marketing in the post-epidemic era, and put forward four countermeasures for the high-quality development of tourism in the post-epidemic era: paying attention to the psychological change of tourism consumption, building smart tourism enterprises, developing "recreation + leisure" products and creating a safe and secure tourism consumption environment. Lu^[7] analyzed the challenges and development paths faced by domestic tourism in the post-epidemic era, starting from the impact of the new crown pneumonia epidemic on the development of domestic tourism. Combining with the post-epidemic background, taking Shandong Province as an example, Ba^[8] analyzed the specific impact of the epidemic on its domestic and international tourism industry, and put forward a series of recovery policies, and some recovery and development suggestions, such as formulating crisis management system, policy assistance, actively helping themselves, and building smart tourism and cultural tourism industry institutions. Taking Tai'an City as an example, Gao^[9] analyzed the impact and formation mechanism of the epidemic on the tourism industry in Tai'an City by a survey questionnaire method and based on the PSR theoretical model, and proposed suggestions for the development of the tourism industry in Tai'an City in the post-epidemic era.

Scholars have studied the influence of the COVID-19 epidemic on the development of the tourism industry and the development trend and countermeasures of tourism in the post-epidemic era, but few scholars have done in-depth research on the impact of the COVID-19 epidemic on tourism consumption structure. In this study, based on the above research situation, the impact of the COVID-19 epidemic on the tourism consumption structure in

Received: August 16, 2023 Accepted: October 17, 2023

Dongmei ZHANG (1975–), female, P. R. China, Associate Professor, Environmental evaluation and management of eco-tourism.

* Corresponding author.

Shandong Province was investigated taking Shandong Province as an example to predict the development trends of tourism in Shandong Province in the post-epidemic era and find out problems, and optimization paths were proposed.

Data Sources and Research Methods

In this study, based on *Shandong Tourism Statistics Handbook* from 2018 to 2020 and other relevant data about tourism in Shandong Province, data summarization and analysis was conducted applying the calculation function of excel software.

Literature research method: Through the literature databases such as CNKI (China National Knowledge Infrastructure) and the official website of Shandong Provincial Department of Culture and Tourism, relevant research literatures were comprehensively sorted out and analyzed with the keywords of "Shandong Province Tourism", "Impact of COVID-19 Epidemic on Tourism" and "Tourism Development in Post-epidemic Era". According to the needs of this study, in-depth analysis was conducted on the sorted literatures related to the impact of COVID-19 epidemic on Shandong tourism to provide overall ideas and data support for this study.

Empirical analysis method: The data of total tourism revenue and tourists' spending composition were processed, integrated and analyzed by statistical methods to find out changes in proportions of tourists' spending composition, so as to predict the development trend of tourism in the post-epidemic era.

Effects of COVID-19 Epidemic on Tourism in Shandong Province

Analysis on the change of total tourism income in Shandong Province

After the outbreak of COVID-19, the tourism industry in Shandong Province was greatly affected, as the total tourism revenue and the total number of tourists decreased greatly, and all the indicators of tourism development showed an overall downward trend. Before the outbreak of COVID-19, the indicators of tourism development showed a steady growth trend. As can be seen from Table 1, in 2020, the total number of tourists in Shandong Province was 577 227 900, showing a decrease of 38.47%, and the total tourism revenue was 601 972 million yuan, exhibiting a decrease of 45.71%. Specifically, the number of inbound tourists received was 527 900, decreasing by 89.87%, and the consumption of inbound tourists was 209 million US dollars, decreasing by 93.88%; and the number of domestic tourists received was 576.7 million, showing a decrease of 38.21%, and the consumption of domestic tourists reached 600.532 billion yuan, with a decrease of 45.04%^[10]. The total number of domestic tourists and total income in Shandong Province in 2020 and the total number of inbound tourists and total income in Shandong Province in 2020 all showed a downward trend. Comparatively speaking, inbound tourism was more affected by the COVID-19 epidemic, with the total number of inbound tourists dropping by 89.87% and the total income of inbound tourism dropping by 93.88%.

Table 1 Indicators of tourism development in Shandong Province from 2018 to 2020

Year	Total tourism revenue 100 million yuan	Consumption of inbound tourists 100 million US dollars	Consumption of domestic tourists 100 million yuan	Total number of tourists (10 000)	Inbound tourists (10 000)	Domestic tourists (10 000)
2018	10 416.20	33.60	9 661.51	86 412.10	513.10	85 899
2019	11 087.32	34.13	10 851.33	93 809.26	521.26	93 288
2020	6 019.72	2.09	6 005.32	57 722.79	52.79	57 670

Analysis on the Structural Changes of Tourists' Consumption in Shandong Province

Affected by the COVID-19 epidemic, the per capita consumption level of domestic tourists in Shandong Province decreased to 1 041.3 yuan in 2020, which was 10.5% lower than that in 2019. From the perspective of various consumption expenditures, it can be seen from Fig. 1 that, except for self-driving expenses and residents' services, all other items declined to varying degrees, with post and telecommunications dropping more, by 33.4%, local transportation and sports and entertainment dropping by 18.5% and 18.1%, respectively, and long-distance transportation, accommodation, catering, scenic spot tourism, culture and art, and shopping all dropping by about 10%, at 13.7%, 12.5%, 10.3%, 14.7%, 9.0% and 9.3%, respectively. Judging from the actual reduction, the per capita hotel expense for domestic tourists decreased the most, by 26.5 yuan; long-distance transportation, catering and shopping decreased by 20.0, 23.5 and 26.3 yuan respectively, all above 20 yuan; tourist attractions decreased

by 17.9 yuan; and culture and art, sports and entertainment, local transportation and post and telecommunications decreased less, respectively, by 1.3, 3.7, 3.8 and 7.0 yuan.

In terms of domestic tourists' consumption, it can be seen from Table 2 that the main expenditure items of domestic tourists in Shandong Province in 2020 were long-distance transportation, accommodation, catering, scenic spot tourism and shopping, accounting for more than 10%, at 12.09%, 17.74%, 19.56%, 10.02% and 24.53%, respectively; self-driving expenses accounted for 8.02%; and culture and art, sports and entertainment, local transportation, residents' services and post and telecommunications all accounted for less than 3% of domestic tourists' spending in Shandong Province in 2020, and the exact values were 1.23%, 1.62%, 1.63%, 1.24% and 0.32% respectively. Before and after the COVID-19 epidemic, long-distance transportation, accommodation, catering, scenic spot tourism and shopping were the main expenditure items of domestic tourists in Shandong Province. However, after the COVID-19 epidemic, the proportions of various

expenditures in tourists' consumption changed. In the consumption composition of domestic tourists in Shandong Province in 2020, the proportion of self-driving expenses increased the most, with an increase of 1.66%; the proportions of catering, culture and art, shopping and residents' services increased slightly, by 0.03%, 0.02%, 0.31% and 0.14% respectively; the proportions of long-distance transportation, accommodation, scenic spot tourism, sports and entertainment, local transportation and post and telecommunications decreased by 0.45%, 0.42%, 0.49%, 0.15%, 0.16% and 0.11%, respectively.

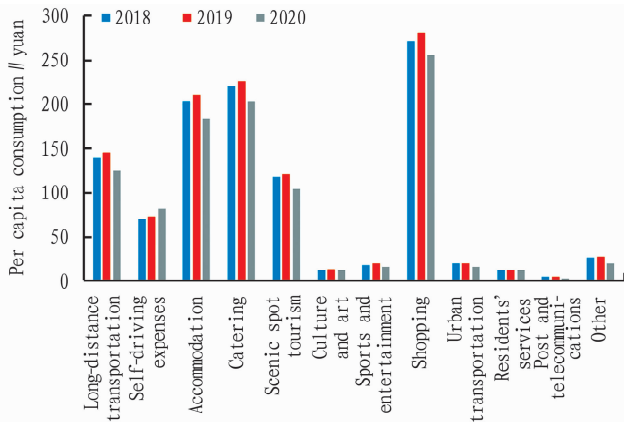


Fig. 1 Statistical chart of various consumption expenditures of domestic tourists in Shandong Province from 2018 to 2020

Table 2 Consumption composition of domestic tourists in Shandong Province from 2018 to 2020 %

Item	2018	2019	2020
Long-distance transportation	12.53	12.54	12.09
Self-driving expenses	6.32	6.36	8.02
Accommodation	18.12	18.16	17.74
Catering	19.62	19.53	19.56
Scenic spot tourism	10.56	10.51	10.02
Culture and art	1.17	1.21	1.23
Sports and entertainment	1.68	1.77	1.62
Shopping	24.19	24.22	24.53
Urban transportation	1.81	1.79	1.63
Residents' service	1.15	1.10	1.24
Post and telecommunications	0.42	0.43	0.32
Other	2.43	2.39	2.00
Total	100	100	100

Prediction of tourism development trends in Shandong Province in the post-epidemic era

Short-distance travel may become the first choice for tourists

The increase of self-driving expenses and the decrease of long-distance transportation consumption in the composition of domestic tourists' consumption in 2020 showed that after the COVID-19 epidemic, long-distance travel was less chosen by tourists. In the post-epidemic era, this situation will continue, and tourists will choose tourist destinations that are close to each other and travel by car. Tours surrounding cities, suburban tours and local tours

within provinces will become the main forms of tourism.

One-day tours have risen rapidly and multi-day tours recover slowly

The increase of self-driving expenses and the decreases of catering and hotel expenses in domestic tourists' consumption composition of in 2020 indicated that the time for tourists to stay in tourist destinations became shorter. Under the background of normalization of epidemic prevention and control, tourists chose to travel by car to reduce contact with others for safety reasons, and the chances of staying in tourist destinations were reduced. Therefore, the number of tourists who choose a one-day tour will increase greatly. However, due to the normalization of epidemic prevention and control, tourists will be more cautious in choosing multi-day tours, and the recovery of multi-day tours will be slower.

Health and wellness tourism will be favored by more tourists

Domestic tourists' consumption in scenic spot tourism decreased in 2020, indicating that the demand for scenic spot tourism is no longer as concentrated as before the epidemic. In the context of the normalization of epidemic prevention and control, tourists had higher requirements for tourism and travel. They no longer chose popular travel that could provide them with sightseeing and appreciation, but rather preferred multi-functional tourism that could relax their body and mind. Therefore, health and wellness tourism will be chosen by more tourists.

Domestic tourism is gradually recovering and it is difficult for inbound tourism to recover in a short period of time

After entering the post-epidemic era, the epidemic has not been completely eliminated, but it is in a state of normal prevention and control. Now the epidemic still occurs all over the country, but within the controllable range, domestic tourism is now in a state of recovering slowly. The epidemic situation in foreign countries is still in a serious state compared with that in China. Therefore, it is difficult for inbound tourism to return to the state before the epidemic in a short time, and domestic tourists' outbound travel is also affected by foreign epidemics, which will increase the demand for domestic tourism to a certain extent.

Smart tourism and online tourism will also become new development trends in the post pandemic era

The application of smart tourism system not only provides convenience for tourists, but also ensures the safety of tourists as much as possible^[11]. Online travel can satisfy tourists' desire to travel at home, and to some extent make up for the regret that they could not travel outside during the epidemic.

Problems and Path Optimization of Tourism Development in Shandong Province in the Post-epidemic Era

Problems in tourism development of Shandong Province in the post-epidemic era

Basic supporting facilities are not complete and the service consciousness is not high

When tourists travel for a short distance, especially when they choose to travel to suburban or remote villages, they will find that the infrastructure facilities in these places are insufficient, such as lack of tourist signs, fewer garbage cans and poor sanitation of public toilets. Moreover, tourism

professionals' service awareness is not high, and their attitude towards tourists is not enthusiastic enough, which leads to poor experience for tourists^[12].

There are security risks in multi-day tours and tourists lack a sense of security Although we have entered the post-epidemic era, tourists have not paid less attention to safety, and the existing safety problems have also made tourists hesitate to choose multi-day tours, such as inadequate disinfection of hotel accommodation, unsanitary catering and crowd control in scenic spots, which will all reduce tourists' desire for multi-day tours. Outbreaks occur all over the country from time to time, which makes tourists feel more insecure^[13].

There are few kinds of products in health and wellness tourism, which lack characteristics Under the background of normalization of epidemic prevention and control, tourists' demand for recreational tourism increased sharply. The products of recreational tourism in Shandong Province are mainly sightseeing, with single types, and many products are of the same kind, resulting in fierce competition and lack of distinctive tourism products. It is difficult to meet some tourists' travel needs^[14].

The application of smart tourism system is not comprehensive and deep enough In the normalization stage of epidemic prevention and control, various scenic spots implemented measures such as ticket booking and swiping face, which made tourists feel safe psychologically. Due to insufficient funds, incomplete intelligent equipment and immature network and technology in some scenic spots, the application is not deep enough, and how to reasonably and widely use the smart tourism system is also a problem to be solved^[15].

Several optimization paths for above problems

Strengthening the construction of basic supporting facilities and improving service awareness For tourist destinations located in remote areas such as suburbs and rural areas that are not yet fully developed, it is necessary to strengthen the construction of local infrastructure and supporting facilities, including the construction of scenic area signs, public toilets, garbage bins, and other projects, to provide a foundation for subsequent development. Meanwhile, it is necessary to enhance professionals' service awareness, provide them with regular training and improve service levels, so as to bring better tourism experiences to tourists^[16].

Strengthening safety management and eliminating tourists' panic In the post-epidemic era, tourists pay more attention to tourism safety, and tourism enterprises must establish a good safety image by strengthening safety management, so as to truly reassure tourists, eliminate panic and give them a sense of security. Tourism enterprises must ensure tourists' personal safety during travel, strictly implement epidemic prevention and control policies, improve emergency response capabilities, and do their best to ensure tourists' safety^[17].

Vigorously developing health and wellness tourism and innovating characteristic tourism products Under the background of normalization of epidemic prevention and control, tourists' demand for health and wellness tourism has greatly increased, and the development of health and wellness tourism has entered a critical stage. In order to meet different needs, targeted health and

wellness tourism products can be developed, such as pastoral health care, rural vacation and other health and wellness tourism projects, to meet the tourism needs of health care. Medical resources, modern medical care and other health-care tourism projects should be developed to meet the tourism needs of treating diseases, enrich the types of health-care tourism products and meet diversified tourism needs of tourists, which will help further development of health and wellness tourism^[18].

Rational using smart tourism system In the post-epidemic era, the smart tourism system plays a very important role. Tourism enterprises should make rational use of smart tourism, manage and operate their own enterprises well, improve their service level and tourists' satisfaction, and enhance their competitiveness. For tourism enterprises that have not yet used the smart tourism system, we should actively guide them to build it as soon as possible. Smart tourism will help tourism enterprises realize intelligent construction and improve their own popularity, and will make tourism enterprises get better development. It also play a significant role in the recovery of tourism in Shandong Province^[19].

Actively developing online tourism Tourism enterprises should seize the opportunity to develop online tourism products by means of science and technology. In the post-epidemic background, tourism enterprises can actively explore more forms of online travel to make up for the losses caused by the previous epidemic. Tourism enterprises can cooperate with e-commerce to create characteristic tourism products and carry out live broadcast with goods, so that tourists can learn about products and buy products online. Such form can also transform and upgrade the tourism industry to a certain extent^[20].

Conclusions

In this study, taking Shandong Province as an example, data were collected from *Shandong Tourism Statistics Handbook* from 2018 to 2020, and processed and analyzed by statistical methods. Through analysis on the influence of COVID-19 epidemic on the overall income and consumption structure of tourism in Shandong Province, an in-depth study was conducted on the development of tourism in Shandong Province in the post-epidemic era, and the conclusions are given below.

(1) The total tourism revenue of Shandong Province decreased by 45.71% and the total number of tourists decreased by 38.47% in 2020 due to the COVID-19 epidemic. The main items of tourists' consumption were still long-distance transportation, accommodation, catering, scenic spot tourism and shopping. The proportions of various expenditures in tourists' consumption changed, with the self-driving expenses increasing by 1.66%, long-distance transportation decreasing by 0.45%, accommodation decreasing by 0.42% and scenic spot tourism decreasing by 0.49%.

(2) Through the analysis on the tourism consumption structure in Shandong Province caused by the COVID-19 epidemic, following predictions were made for the tourism development of Shandong Province in the post-epidemic era: short-distance travel may become the first choice for tourists; one-day tours have risen

rapidly, and multi-day tours slowly recover; health and wellness tourism will be favored by more tourists; and domestic tourism is gradually recovering, and it is difficult for inbound tourism to recover in a short period of time.

(3) Based on the development prediction and existing problems of the tourism industry in Shandong Province in the post-epidemic era, following optimization paths were proposed: strengthening the construction of supporting infrastructure and enhancing service awareness, strengthening safety management and eliminating tourists' panic, vigorously developing health tourism and innovating characteristic tourism products, reasonably using the smart tourism system, and actively developing online tourism.

References

- [1] TANG CC, ZHANG HL, ZHAO L, *et al.* The impact of COVID-19 on China's tourism industry and its countermeasures[J]. *Journal of Chinese Ecotourism*, 2022, 12(1): 169–183. (in Chinese).
- [2] CHEN YY. Reflections on the development of tourism industry under the normalization of epidemic prevention and control[J]. *CO-Oerativeconomy & Science*, 2021(22): 13–15. (in Chinese).
- [3] WANG YC, WANG YH. Tourism industry recovery and risk management countermeasures against the background of COVID-19 epidemic[J]. *Tourism Today*, 2021, 19(8): 62–63. (in Chinese).
- [4] BA JJ. Research on the impact of normalization of epidemic prevention and control on tourism industry[J]. *Management & Technology of SME*, 2021(6): 52–53. (in Chinese).
- [5] TIAN L, MA Y. Challenges and opportunities for the development of tourism under normalized prevention and control[J]. *Social Scientist*, 2021(12): 60–64, 75. (in Chinese).
- [6] YUE J. Research on the development trends and countermeasures of tourism industry in the post-epidemic era[J]. *Tourism and Photography*, 2021(15): 14–15. (in Chinese).
- [7] LU Z. China's tourism development strategy in the post-epidemic era[J]. *Tourism Today*, 2021, 19(36): 34–36. (in Chinese).
- [8] BA MZ. Study on the recovery and development of Shandong tourism in post-epidemic era[J]. *Tourism and Photography*, 2021(16): 6–7. (in Chinese).

- [9] GAO N. the Impact mechanism of COVID-19 on tourism in Tai'an City[J]. *Technology and Industry Across the Straits*, 2021, 34(10): 26–28. (in Chinese).
- [10] DAI JC. Study on the predicament and countermeasures of Guangxi tourism during the COVID-19 epidemic period[J]. *Market Modernization*, 2021(9): 147–149. (in Chinese).
- [11] BAI MG. An empirical study on the changes of domestic tourism consumption structure in Hebei Province[J]. *China Collective Economy*, 2021(5): 25–26. (in Chinese).
- [12] YE YQ. Innovation and upgrading of tourism products in tours around cities in the post-epidemic era; A case study of tours surrounding Guiyang City[J]. *Management & Technology of SME*, 2020(9): 38–40. (in Chinese).
- [13] ZHENG YX, HU WW. Analysis on the development countermeasures of domestic peripheral tourism under normal epidemic prevention and control; A case study of Zhejiang Province[J]. *Jiangsu Commercial Forum*, 2020(11): 59–61. (in Chinese).
- [14] YANG R. Research on the innovation and development of health and wellness tourism industry under the background of the transformation of old and new kinetic energy; A case study of Shandong Province[J]. *Journal of Yanbian Party School*, 2020, 36(2): 73–78. (in Chinese).
- [15] ZHOU Z, LIU SL. Research on the cultural and tourism industries' responses to COVID-19 and its follow-up effects of China[J]. *China Ancient City*, 2021, 35(3): 20–26. (in Chinese).
- [16] MING QZ, ZHAO JP. The impact of the Novel Coronavirus Epidemic on China's tourism industry and its countermeasures[J]. *Academic Research*, 2020(3): 124–131. (in Chinese).
- [17] CHEN YX. The influence of COVID-19 epidemic on domestic tourism[J]. *CO-Oerativeconomy & Science*, 2021(18): 48–50. (in Chinese).
- [18] WU Y, WANG ZX. Development path of tourism in the post-epidemic period[J]. *China finance*, 2021(10): 102. (in Chinese).
- [19] LYU F, LI Z. Study on the countermeasures of tourism development under the normalization of epidemic prevention and control[J]. *Modern Business*, 2021(1): 17–19. (in Chinese).
- [20] WANG SH, WANG L, WANG MY, *et al.* Study on impact characterization and influence mechanism of Novel Coronavirus Pneumonia on tourism industry in Henan Province[J]. *Areal Research and Development*, 2020, 39(2): 1–7. (in Chinese).

Editor: Yingzhi GUANG

Proofreader: Xinxiu ZHU

(Continued from page 34)

- [27] MAI TY, CHEN SN, LIN XY, *et al.* 20-hydroxyecdysone positively regulates the transcription of the antimicrobial peptide, lebecin, via BmEts and BmBR-C Z4 in the midgut of *Bombyx mori* during metamorphosis[J]. *Developmental & Comparative Immunology*, 2017(74): 10–18.
- [28] ZHANG X, ZHENG S. 20-hydroxyecdysone enhances the expression of

the chitinase 5 via broad-complex zinc-finger 4 during metamorphosis in silkworm, *Bombyx mori*[J]. *Insect Molecular Biology*, 2017, 26(2): 243–253.

- [29] HONG F, SONG H, AN CJ. Introduction to insect metamorphosis[J]. *Chinese Journal of Applied Entomology*, 2016, 53(1): 1–8. (in Chinese).

Editor: Yingzhi GUANG

Proofreader: Xinxiu ZHU