

Opportunities and Challenges of Digital Transformation of China's Cultural Tourism Industry in the Post-Epidemic Era

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Abstract. As the China digital era arrived, the traditional form and mindset of the cultural tourism industry have not been able to satisfy the existing demand of public tourists. In addition, owing to the influence of COVID-19, the culture and tourism industry has been greatly impacted and many enterprises are facing a crisis. The digital process has been accelerated as a result, making digitization a key factor for the cultural tourism industry after the epidemic. Based on Michael E. Porter Diamond Model, this study summarizes the difficulties and opportunities faced by the digital transformation of China's cultural tourism industry in production factors, demand conditions, related and supported industries, corporate progress, government and chances. It also offers suggestions for further digitization in the post-epidemic time. For the development of digital transition of China's cultural tourism, this paper gives the industry a clear vision of future direction. Also, it provides a reference for the long-term developing path of digital cultural tourism.

Keywords: Digital transformation; cultural tourism industry; post-epidemic time.

1. Introduction

The digitization of the culture and tourism industry is a process of all-around transformation, enhancement and optimization, and even disruption, reshaping, and reconstruction of the cultural tourism industry with digital technology [1]. The connotation consists of two levels: the first is the technical logic level, i.e., the application and development of digital technology in the cultural tourism industry; the second is the technical impact level, i.e., digital technology leads to different degrees of changes in the cultural tourism industry [2].

Culture and tourism industry is the integration of the cultural industry and tourism industry [3], including creating humanistic landscapes, building cultural facilities, providing cultural and tourism services and goods, organizing festivals and events, spreading local culture, etc. The types of digital technologies can be classified as acquisition, access, processing, display, dissemination, and use. Today, 5G, the Internet, big data, cloud computing, artificial intelligence, holographic projection, VR, AR, IoT, blockchain, and other high technologies are the result of the integration and development of digital technology with other technologies.

Rui Huang and Xuewei Li et al. constructed a nonlinear dynamic panel model to explore whether the cultural industry can be at a high energy level for a long time in the smart era by analogizing the digital empowerment mechanism of the cultural industry with the quantum leap. They found that the effect of digital empowerment in China's cultural industry does have an inverted "U" impact [4]. Therefore, to better promote the effect of digital empowerment and high-quality development of China's cultural industry, they suggested that China should improve the input system of digital development of the cultural industry, optimize the structure of the industry constantly, and also sound cultural industry science and technology policy.

Research on the effects of tourism economic performance evaluation of cultural tourism indicated that the current level of coordinated development of China's cultural tourism industry has reached a level of quality coordination from being on the verge of dissonance [5]. With the expansion of the digital economy, digital technology has become an important approach to empowering cultural tourism, and the digital reform of the cultural tourism industry continues to deepen. However, with the impact of COVID-19, the cultural tourism industry needs to accelerate the digital process and take measures against the epidemic. This study focusses on finding out the opportunities and difficulties in the digital change of China's cultural tourism industry based on the "diamond model". According

to the analysis, it also gives countermeasures for digital cultural tourism in the coming post-epidemic period.

2. Michael E.Porter Diamond Model

To objectively and comprehensively discuss the opportunities and challenges of digital transformation in the cultural tourism industry, it is necessary to analyze Michael E. Porter's diamond model. Professor Michael E. Porter, Harvard Business School, proposed the "Diamond Model" theory in 1990. It mainly points out that industry competitiveness is formed by the factor conditions, demand conditions, related and supported industries, strategy, structure and rivalry, government, and chances, as shown in Fig.1 [6]. In this paper, first, factor conditions refer to the digital infrastructure construction, digital technologies, cultural tourism products, human resources, capital, etc. in China's culture and tourism industry. Second, demand conditions relate to China's current cultural and tourism market demand. Third, related and supported industries refer to the connection between the culture and tourism industry and related industries like the catering industry. Fourth, strategy, structure, and rivalry are the internal and external environment. Last, government and chances are supporting factors for the digital development of the cultural tourism industry, including supportive national and government policies.

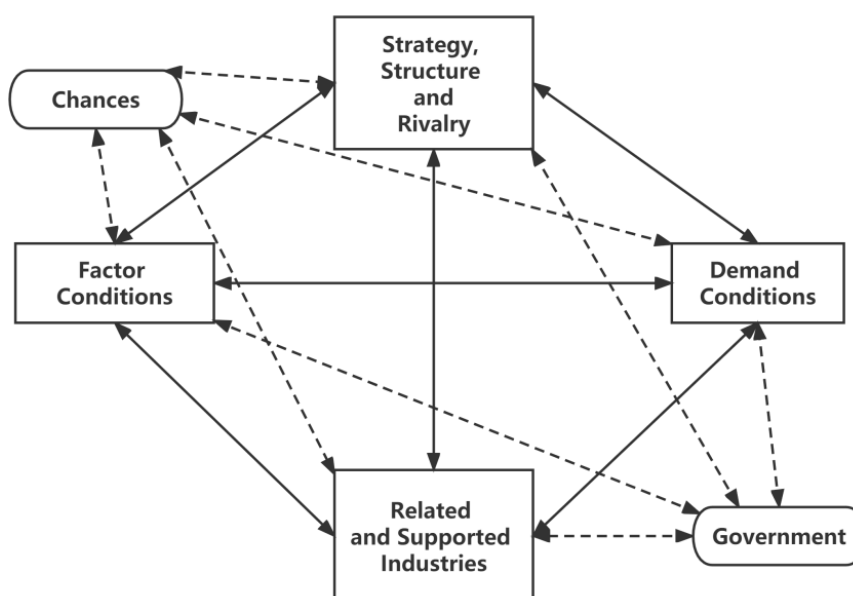


Figure 1. Michael E. Porter Diamond Model [6]

3. Analysis results based on Michael E.Porter Diamond Model

According to the model, this chapter aims at analyzing the opportunities and challenges of China's digital cultural tourism industry from five aspects. From the perspective of factor conditions, the analysis found the rapid development of the digital economy and technology empowering the cultural tourism industry. But there are difficulties in tourism products innovation, talent development, and investment. In demand factors, China's culture and tourism market demand show a change. The new trend of cultural tourism will bring the industry new chances. From the related and supported industries' point of view, digital transformation is unbalanced in cultural tourism. In strategy, structure, and rivalry, cultural tourism enterprises have difficulties in the digital change of strategy and structure, and homogeneous competition. In terms of government and chances, the Chinese government has launched and implemented supportive policies for the advancement of digital cultural tourism in recent years, creating a positive environment for digital development. In summary, results

from the analysis are integrated into opportunities and difficulties based on five sides. This chapter gives a specific explanation of each point and provides the basis for further countermeasures.

3.1 Opportunities

3.1.1 Digital Economy and Technology Empowering Cultural Tourism Industry

China's 14th Five-Year Plan and Long-Range Objectives Through the Year 2035 indicates the need to accelerate digital development and build a digital China. Tourism, clarifies the basic idea of "promoting the integrated development of culture and tourism" and declares the general strategy of "developing mass tourism and intelligent tourism, innovating tourism product system and improving travel consumer experience" [7]. The digital economy is a new formation with digital information as a key production factor and the innovation of digital technology as a core driver. Digital technologies such as 5G, AI, VR, and AR promote the development of new cultural tourism such as VR scenic spots and digital museums. The increasing maturity of digital technology and its widespread application have opened a new era of China's digital cultural tourism. Digital cultural tourism has developed rapidly with the expansion of market scale. In 2021, the market size of China's digital cultural tourism has reached 815.78 billion RMB, which increased by 16.9% compared with last year. It is estimated that the market scale will achieve 969.81 RMB (See Fig.2 and data from www.gonyn.cn).

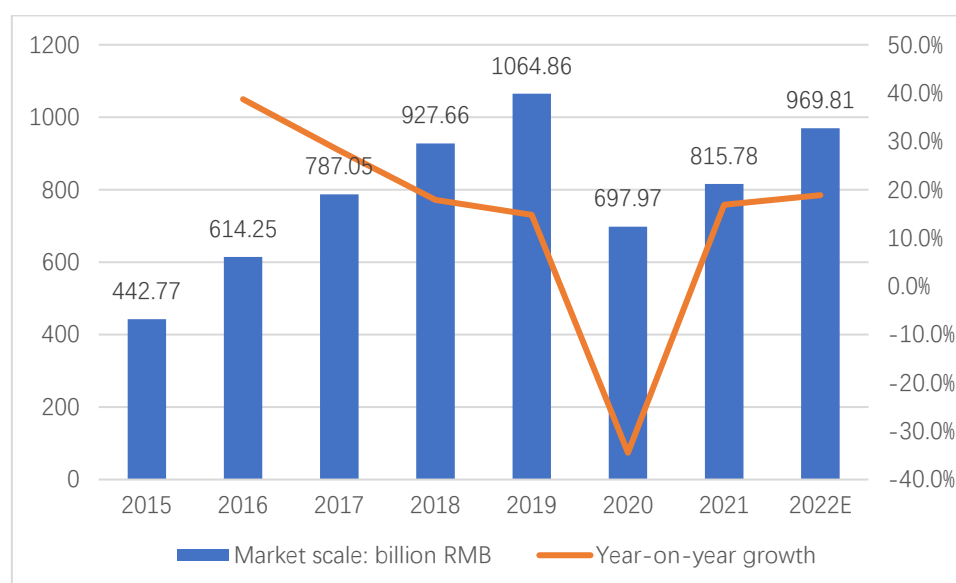


Figure 2. China Digital Culture and Tourism Market Size Statistics and Forecast
(Photo credit: Original)

3.1.2 Cultural and Tourism Market Demand

In the age of the digital economy, digital tourism caters to the changes in people's demands. During COVID-19, new travel forms like "cloud" exhibitions are emerging. In addition, all countries are committed to increasing the growth of the domestic tourism market. Italy's government has led "slow" tourism [8] and "zero-kilometer" countryside camping [9] to become a new travel trend in domestic by guiding public opinion. Singapore Tourism Board has made a capital contribution to encourage residents to go on vacation locally. In China, tourism also shows the characteristics of the close distance, short duration, and high frequency. And, local or peripheral travel has become Chinese people a new travel habit [10]. According to the survey by Xiaohua Feng, since the effective prevention and control of COVID-19 in China, Chinese tourists' willingness to travel has remained strong though their travel plans had been curbed in phases by the impact of the epidemic. It mainly performs local and peripheral travel and other short-range tourism is a continuous upward trend while the foreign and cross-province travel there is still a lot of demand space [11]. With the epidemic

prevention policy adjustment in China, cross-border travel demand is increasing. In 2021, the tourism consumption of international tourists around the world increased by 3.8%. Data from the World Travel & Tourism Council shows that international tourism gradually recovered.

3.1.3 Government Policies Support

The development of the digital economy and the growing demand for cultural tourism, as well as the impact of COVID-19, push forward the digital transformation of cultural tourism. The government provides opportunities for digital cultural tourism through the development and implementation of relevant policies. In 2019, the State Council of the People's Republic of China issued "Opinions on further stimulating the potential of cultural and tourism consumption", which suggested "creating immersive and experiential cultural and tourism consumer content based on 5G, Ultra HD, AR, VR, and AI, etc. " and other measures. In November 2020, the Department of Culture and Tourism and the other ten departments issued "On deepening the "Internet + tourism" to promote high-quality development of tourism views", which clarified the strategic orientation of tourism digitization and scenario-based consumption in a new period. In June 2021, the Department of Culture and Tourism issued "the 14th Five-Year Plan of Culture and Tourism". It showed the importance of promoting the integration of culture and tourism. Also, it indicated that the government should follow the trend of digitization and construct several national culture and tourism development demonstration areas [12]. To conclude, China enhances cultural and tourism integration with digital technology empowerment and rich digital cultural and travel consumption types.

3.2 Difficulties

3.2.1 Digital cultural tourism product innovation dilemma

Sizhe Guo and other authors noted that China's cultural tourism lacks specialty and high-quality digital cultural products. It cannot also commercialize digital cultural creation, and the awareness of asset digitization and digital capitalization [13]. Cultural tourism needs to enrich the innovation of cultural tourism-related products and actively expand the digital asset scene and improve the ecological closed loop [14]. China is still in the exploration stage from traditional tourism products to digital culture tourism-related products. Governments and companies usually only invest an amount of money into product innovation, which has problems such as a long development cycle, high cost of trial and error, difficulty in accurately estimating the return on investment, and low transparency of the pricing system [13]. The creation of digital culture and tourism products also needs the support of technology, human resources, and digital infrastructure development. Therefore, balancing product innovation demand and costs for cultural tourism's digital transformation is challenging.

3.2.2 Difficulties in investment and financing of the tourism industry

The high proportion of real estate and operating costs in the asset structure is the core reason why the cultural tourism industry has been hit hard during the epidemic [13]. Due to the nature of the asset structure of cultural tourism and the impact of COVID-19, the digital transformation of tourism companies needs more capital and human resources. Since 2018, the number of investments in tourism information technology in China is decreasing year by year, as shown in Fig. 3 [15]. 11 investment events occurred in 2021 and the amount of financing is 1.38 billion RMB. Compared to 2020, the number of investments is 21 less. Also, China's total domestic tourism revenue in the first three quarters of 2022 was 1.72 trillion RMB, which decreased by 27.2% [16]. It is evident that the current development of the tourism industry is unstable, and digital transformation is even more difficult. So, investors are prudent in tourism enterprises, who have to assess the prospect of cultural tourism after the epidemic and consider the long-term profit.

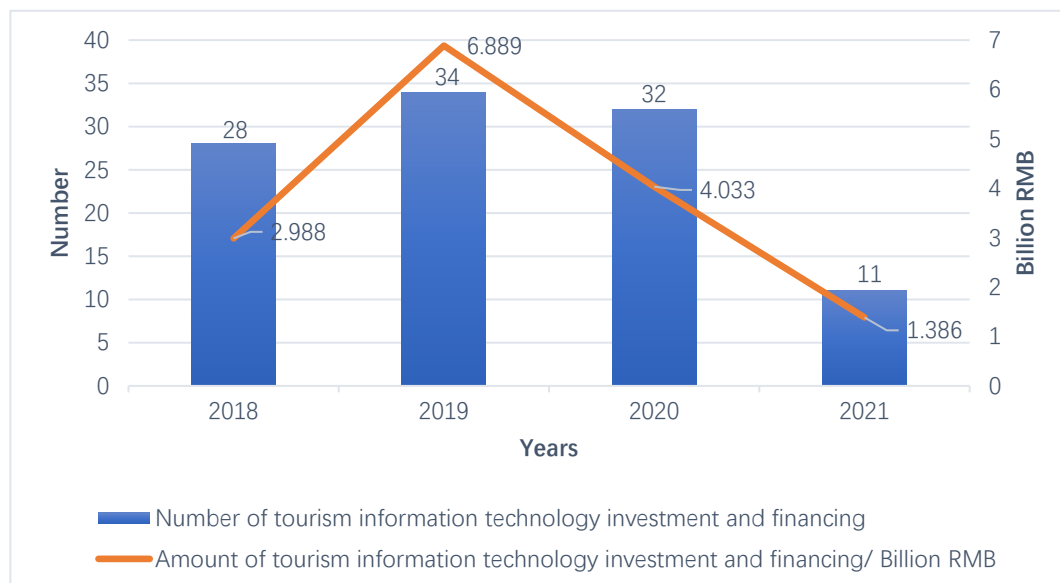


Figure 3. 2018-2021 Investment and financing of tourism information technology in China
(Photo credit: Original)

3.2.3 Lack of complex digital talent

Based on digital transformation, companies need cross-border talents with new technology concepts [17]. The cultural and tourism industry is dominated by grassroots staff which lacks high-end tourism talents with digital innovation and application capabilities [18]. According to the report jointly released by Tsinghua University and LinkedIn, about 50% of digital talents are distributed in ICT industries such as the Internet and information and communication, followed by manufacturing, finance, and consumer goods industries. Less than 5% of them in total are distributed across functions such as deep analytics and digital marketing [19]. The China Academy of Information and Communication Research released the "Digital Economy Employment Impact Study Report", pointing out that China's digital talent shortage of nearly 11 million [20]. In a digital talent shortage scenario, large companies are more capable of developing talent, and ICT and traditional industries are more attractive to digital talent. Thus, how can cultural tourism attract and develop complex digital talents is a difficult problem.

3.2.4 Unbalanced Digital Transformation of Cultural and Tourism-Related Industries

Tourism, restaurant, hotel, transportation, entertainment, and other industries are complementary. So, the digitization of cultural tourism is also closely related to the digital development of related industries. In China, the level of informatization in the eastern coastal region is higher, while lower in the mid-western and northeastern regions. There is an uneven digital development in e-commerce, transportation, healthcare, logistics, and other industries between regions. The restaurant and hotel industries have suddenly accelerated their digitization process in the wake of the epidemic. In this case, the digital transformation of cultural tourism will perform fragmented and passive digital behavior [6]. Enterprise upstream and downstream partners may not have achieved the corresponding digital transformation, which brings business process and communication "misalignment" to the leading companies among them, making their business [21] and digital transformation less efficient.

3.2.5 Corporate Strategy and Structural Change Challenges

According to the "SME Digital Transformation Analysis Report (2021)" in China, there were 79% of SMEs in the exploration phase of digital transformation, 12% in the practice period, and 9% at the deep application stage [22]. As can be seen, most companies are at the beginning of digital transformation (as shown in Fig. 4). The digital transformation of some cultural tourism enterprises carries a big data platform on the original operating system. They wrongly consider digital transformation as the conversion of offline parts to online, while the establishment of online channels

is equivalent to e-commerce [23]. Companies' unclear cognition about digital strategy and structure, the insufficient preparation for organizational change, and the lack of awareness of digital transformation result in that new values and operating models based on digitization not being established.

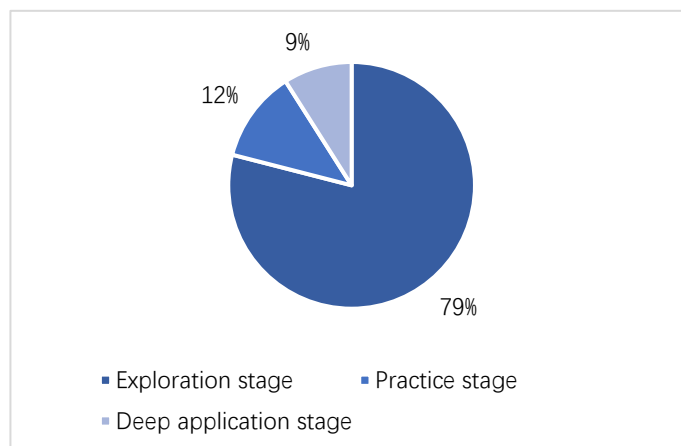


Figure 4. Diagram of the degree of digital transformation of SMEs in China
(Photo credit: Original)

4. Countermeasures in the Post-Epidemic Age

With the development of the digital economy and the recovery from the epidemic situation, the digital transformation of China's cultural tourism will enter a new period. At present, China's digital cultural tourism is still in initial exploration. Based on the analysis above, it is known that China's growing digital economy and digital infrastructure, the increasing demand for culture and tourism, and the strong support of digital cultural tourism policies provide opportunities for cultural tourism's digital transformation. However, it also faces challenges such as difficulties in product innovation and investment in digital cultural tourism, lack of digital talents, unbalanced digitization of related industries and regions, and problem in digital change within the enterprise. Accordingly, this paper proposes the following countermeasures to cope with the digital transformation of cultural tourism in the post-epidemic era.

1) Cultural tourism should insist on digital and Internet technology innovation and optimize the structure of production factors. Firstly, cultural tourism needs to strengthen the innovative application of digital technologies such as 5G, VR, AR, etc., and carry out new forms such as "meta-universe experience" and "VR experience". Tourism industries must also make the most of outstanding Chinese cultural and tourism resources. They can create Chinese digital products that integrate animation, film, and other cultural IPs with tourism. Secondly, it is urgent to promote cultural tourism financial innovation and increase the investment in digital culture and tourism resources. The government can fund subsidies to encourage the cultural tourism industry. Thirdly, to improve the attractiveness of the cultural tourism industry to talents, and train professional digital talents with tourism management for the industry, culture and tourism industries ought to optimize the training mechanism of tourism digital talents.

2) Cultural tourism industry should focus on the market demand and enhance the consumer experience. China's provinces and cities ought to improve the construction of tourism and leisure areas and create special tourism communities. Making full use of digital marketing and other digital measures to promote the further digital transformation of the local culture and tourism industry. For cross-border tourism, the domestic industry should do thorough market research to grasp the needs of domestic tourists and international tourists and promote the digital transformation of cultural tourism.

3) China has to accelerate the improvement of regional digital infrastructure construction and promote the integration of digital technology and management of cultural tourism-related industries. The construction of cultural and tourism digital facilities should be based on the regional development's reality. Each region can establish a cultural tourism data platform to realize data sharing between cultural tourism enterprises and catering, hotel, entertainment, and other industries, and thence, further improve digital management.

4) Cultural and tourism companies are required to change their thinking and improve and implement transformation strategies. Travel enterprises must correctly recognize the necessity and urgency of digital transformation. They need to make a digital transformation strategy that matches new market expectations and innovates cultural tourism products and services, thus driving the reform of the company's structure.

5. Conclusion

Overall, based on Michael E. Porter's diamond model, this study analyzed the potential and difficulties that the digital transformation of China's cultural tourism industry will face after COVID-19 time, and it then offered recommendations for digitization. The study found that there are prospects for digital change in the post-epidemic era due to the expanding digital economy and technology, the new cultural and tourism market needs to be influenced by the pandemic, and the guidance of China's digital cultural tourism policies. According to the theoretical model and the development status of China's cultural tourism, this paper also analyzes problems of digital transformation from the aspects of production factors, digitization of related industries, and enterprise strategy and structure. For each issue, suggestions for the future of digital transition are delivered. This research employed an objective methodology to analyze the opportunities and challenges of digital transformation in China's culture and tourism industry in the context of China's macro development and industry realities. It could help the cultural tourism industry develop a road map for digitization after the age of the epidemic.

This study discusses the chances and problems of digital transformation in China's culture and tourism industry at a macro level, which is general in nature. In the future, specific cases of cultural tourism enterprises can be more concentrated on to explore the digital developing pattern in the post-pandemic era.

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