Digital Technology Empowerment of the Integration of Cultural Tourism and Health Care Industries in Qingyuan City: Dilemmas and Solutions

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Abstract: This paper uses Qingyuan City as a case study to explore the challenges and solutions of digital technology - driven integration of cultural tourism and health care industries. Research reveals that Qingyuan's cultural tourism and health care industry faces several challenges in digital transformation, including poor adaptability of technology to industry scenarios, lack of data sharing mechanisms, difficult coordination of interests among stakeholders, and a shortage of versatile talents. Through theoretical and empirical analysis, the following solutions are proposed: deeply exploring cultural connotations to create unique integrated brands, strengthening talent support to build a multi - level talent system, promoting data sharing to break down information silos, and encouraging multi - party coordination to form an industrial ecosystem community. The study emphasizes that a multi - stakeholder coordination mechanism involving government leadership, enterprise cooperation, and the linkage of universities and research institutions is needed to solve problems such as the disconnection between technology and resources and inefficient data circulation, so as to achieve high - quality integrated development of the industry under digital technology empowerment. This paper provides theoretical references and practical strategies for the digital transformation of cultural tourism and health care industries in Qingyuan City and similar regions, helping to achieve the sustainable transformation of "green waters and green mountains" into "golden and silver mountains."
Keywords: Digital Technology; Cultural Tourism and Health Care Industry; Industrial Integration; Data Sharing; Qingyuan City

1.Introduction

The rapid development of digital technology is reshaping production and lifestyles and bringing new opportunities and challenges to various industries. In 2023, Qingyuan City welcomed over 50 million tourists, a 62% increase from 2020, with the proportion of health tourism rising from 15% to 28%. The widespread application of digital technology is driving cultural tourism and health care services from "single - scene" to "immersive experiences." Tourist demands are shifting toward personalized health management[1], in - depth cultural experiences[2], and intelligent interactive services[3] .In this context, in 2022, Qingyuan City, in line with the State Council's "Digital Integration Action Plan for Cultural Tourism and Health Care Industries," proposed building a "digital cultural tourism + smart health care" industrial ecosystem using 5G, artiicial intelligence, blockchain, and other technologies, signaling a new phase of high - quality development for the cultural tourism

and health care industry[4].

Digital technology aligns well with the cultural tourism and health care industry in resource integration, service innovation, and value extension. Digital platforms can analyze tourists' health data and cultural preferences to provide scientific and customized health care services[5]. Virtual reality (VR) and augmented reality (AR) technologies can bring cultural heritage sites like Lianzhou Underground River and Thousand - Year Yao Village to life, creating "tourable and tangible" cultural experience scenarios. Promoting the deep integration of digital technology with cultural tourism and health care can unlock the cultural value of Qingyuan's ecological resources, upgrade traditional industries like hot spring therapy[6] and forest health care to "digital + health care" models, and cultivate new economic growth drivers[7]. Additionally, a city - wide smart tourism platform can break down data barriers between scenic spots, hotels, and medical institutions, achieve efficient resource allocation and industrial chain synergy, and enhance value - adding[8]. Therefore, analyzing the bottlenecks and solutions for the digital integration of Qingyuan's cultural tourism and health care industry is not only a theoretical issue for regional economic transformation but also a key practice for achieving the transformation of "green waters and green mountains" into "golden and silver mountains."

2.Dilemmas of Digital Technology Empowerment of the Integration of Cultural Tourism and Health Care Industries in Qingyuan City

While digital technology provides new impetus for the integration of cultural tourism and health care industries, Qingyuan City still faces multiple challenges in practice, mainly in terms of technology - industry adaptability, data sharing mechanisms, and coordination of interests among stakeholders.

2.1 Poor Adaptability of Technology to Industry Scenarios

Despite efforts to promote digital transformation in the cultural tourism and health care industry, the integration of technology with local resources in Qingyuan is still relatively crude. Some scenic spots blindly introduce smart devices like VR experience cabins and unmanned tour guides without considering their adaptability to ecological health care scenarios. For example, Lianzhou Underground River has an intelligent interpretation system, but it lacks in - depth exploration of Yao culture and karst geological features, resulting in superficial tourist experiences. There is an over - emphasis on hardware while neglecting software. Most health care institutions have only established basic data platforms without developing health monitoring algorithms or chronic disease management modules for the elderly, making it hard to meet personalized needs. Digital investment and output are also unbalanced. Small and medium - sized enterprises, due to funding constraints, often opt for "low - end technology grafting," such as developing mini - programs or online booking systems, which cannot support industrial chain innovation. The root causes are the lack of a digital technology evaluation system for the cultural tourism and health care industry and insufficient market research by enterprises on local consumption demands and technology applicability, leading to disconnection between technology application and industry scenarios.

2.2 Data Silos and Lack of Data Sharing Mechanisms

As a core element of digital integration, data circulation efficiency directly affects industrial coordination. There are three major data barriers in Qingyuan's cultural tourism and health care industry:Non - unified data standards between the Cultural Tourism Bureau, Health Commission, scenic spots, and health care institutions prevent the interconnection of health records and tourist behavior data, restricting resource integration efficiency.Enterprises, due to competition, are reluctant to share core data, resulting in low willingness for cross - institutional cooperation.Concerns over information leakage in some health care projects lead to avoidance of data collection, creating a conflict between consumer privacy protection and data openness. The root cause lies in the lack of top - level planning, with no establishment of data ownership, sharing rules, and incentive mechanisms.

2.3 Weak Coordination Mechanisms among Stakeholders

The integration of cultural tourism and health care industries involves multiple stakeholders, including government, enterprises, communities, and consumers, but an effective coordination ecosystem is yet to be formed in Qingyuan City.Policy - wise, digital projects led by the cultural tourism department and health care service systems led by the health department lack linkage. For instance, some smart scenic spot constructions and community medical resource layouts are spatially

mismatched, with no data interconnection between emergency response systems of scenic spots and surrounding medical institutions. In enterprise cooperation, traditional cultural tourism enterprises, limited by technology knowledge and funding, often stay at the surface level of digital transformation, such as electronic ticketing systems. When collaborating with tech companies to develop smart health care products, disagreements over intellectual property ownership and revenue - sharing ratios lead to a "cooperation in name only" dilemma. In terms of consumer participation, the elderly are skeptical about health monitoring devices and have low compliance with smart bands, while the young expect in - depth experiences from new technologies like VR health assessment and AI - customized nutrition. This demand gap makes it hard for technology application to meet both universal and high - value requirements. The deep - seated contradiction lies in the lack of a "value - co - creation" concept in industrial ecosystem building. Government performance assessments focus on single - department task completion[9], leading to formalistic cross - field projects due to unclear responsibility division. Enterprises, driven by short - term operational pressures, lack strategic patience in long - term cooperation like data resource exchange and joint technology R & D. Communities and consumers are excluded from the industrial co - building system, with blocked demand feedback channels causing disconnection between supply - side innovation and actual demand.

2.4 Shortage of Versatile Digital Talents

Digital integration requires talents who understand both the cultural tourism and health care industries and digital technology[10]. However, Qingyuan City faces a "triple - difficulty" situation:Difficulty in attracting technology R & D talents [11]due to significant salary gaps with first - tier cities[12], making it hard to draw in high - end talents in big data analysis and AI algorithms.Difficulty in improving digital literacy among local enterprise employees, as scenic spot managers lack knowledge of blockchain, metaverse, and other new technologies, hindering project implementation.Difficulty in deepening industry - academia - research cooperation, as research results from universities and research institutions don't match industrial demands, failing to form a talent incubation loop.The talent shortage stems from lagging vocational education systems, insufficient enterprise training investment, and weak regional talent - attracting policies.

3.Solutions for Digital Technology Empowerment of the Integration of Cultural Tourism and Health Care Industries in Qingyuan City

3.1 In - Depth Exploration of Cultural Connotations to Create Unique Integrated Brands

Culture is the soul of the cultural tourism and health care industry[13]. Qingyuan City boasts abundant local cultural resources[14], such as Yao culture and karst geological culture, which provide a solid cultural foundation for industrial integration. Under digital technology empowerment, these cultural elements can be transformed into attractive products and services. For example, combining local legends with natural landscapes to develop immersive experience projects. Using virtual reality (VR) and augmented reality (AR) technologies, tourists can enjoy natural scenery while experiencing the unique local culture, enhancing emotional resonance between tourists and culture and adding warmth and sentiment to cultural tourism. Additionally, digital means can be used to innovatively interpret traditional culture, making it relevant to the present and attracting more young tourists.

3.2 Strengthening Talent Support to Build a Multi - Level Talent System

Talent is a key driver of industrial integration[15]. To address the shortage of versatile digital talents in Qingyuan City, a diversified talent cultivation and attraction system needs to be established. On the one hand, strengthen cooperation with universities and research institutions to set up intern bases and industry - academia - research projects, providing practice opportunities for students and training professionals to meet local industrial demands. On the other hand, introduce preferential policies to attract high - end technology talents and innovation teams, offering intellectual support for industrial development. Meanwhile, conduct digital skills training for local employees to enhance their digital literacy and professional skills, cultivating a group of versatile talents proficient in both cultural tourism and health care and digital technology, and providing solid talent guarantees for industrial integration

3.3 Promoting Data Sharing to Break Down Information Silos

Data is a crucial asset in the digital era. To solve data sharing problems in Qingyuan's cultural tourism and health care industry, the government should strengthen top - level planning, set unified data standards and sharing rules, and establish

data sharing platforms to promote data circulation between government departments and enterprises. For instance, set up a Qingyuan Cultural Tourism and Health Care Industry Big Data Center to integrate data resources from cultural tourism, health, civil affairs, and other departments, achieving centralized data management and sharing. Data analysis can help understand tourist needs, optimize resource allocation, and improve service quality. Strengthen data security and privacy protection, and establish a comprehensive data security system to ensure legal and compliant data usage, so that tourists and enterprises can participate in data sharing with confidence and provide strong data support for industrial integration.

3.4 Enhancing Multi - Party Coordination to Build an Industrial Ecosystem Community

The integration of Qingyuan's cultural tourism and health care industry involves multiple stakeholders. An effective coordination mechanism needs to be established to form an industrial ecosystem community. The government should enhance policy guidance and planning, promote policy coordination between cultural tourism and health departments, and form a united working force. Encourage enterprises to cooperate and establish industry alliances for resource sharing and complementary advantages[16]. Actively involve communities in industrial integration, making them participants and beneficiaries[17]. Also, value consumer participation and feedback, and adjust product and service supply according to consumer demands. For example, create a Qingyuan Cultural Tourism and Health Care Industry Integration Pilot Zone to attract various market players through policy support and resource integration. Jointly explore new models and paths for industrial integration to achieve win - win outcomes and promote the cultural tourism and health care industry to a higher level.

In summary, the integration of cultural tourism and health care industries is crucial for Qingyuan City's economic transformation and meeting the growing diversified and personalized tourism demands. Qingyuan has achieved some success in digital technology - enabled industrial integration, such as a significant increase in tourist and the initial establishment of digital application scenarios. However, challenges remain in technology adaptability, data sharing, coordination of interests, and talent supply. To overcome these, multi - stakeholder coordination is essential. The government should take the lead in improving top - level planning, building data sharing mechanisms, and attracting and retaining talents through preferential policies. Enterprises need to strengthen cooperation, share resources, enhance technological innovation, and accurately grasp market demands. Universities and research institutions should deepen industry - academia - research cooperation, train professionals to meet local industrial needs, and promote the transformation of research results. Only through the joint efforts of government, enterprises, universities, and research institutions can a comprehensive industrial ecosystem community be formed to achieve high - quality integration of Qingyuan's cultural tourism and health care industry, fully demonstrate the value of digital technology empowerment, and promote Qingyuan's transition from a resource - rich city with "green waters and green mountains" to an economically strong city with "golden and silver mountains."

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Conflict of Interests

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