

# Crossing the “Digital Divide”: Research on the Current Situation and Improvement Path of Tourism Adaptation Aging under the Background of Silver Hair Economy

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**Abstract:** Under the background of the rapid development of silver-haired economy, when the cultural tourism service is fully digitized, the problem of “not using, not daring to use, not willing to use” for the elderly in booking tickets, scanning code verification, online payment, digital tour, complaint feedback and other aspects has already changed from the initial single technical obstacle to the structural obstacle that restricts the cultural participation, tourism consumption and social integration of the elderly. On the basis of the existing project foundation, the preliminary research results of the project and the public official information, this paper makes a comprehensive study from four aspects: the aging of digital services, the aging of infrastructure, the aging of service processes and the institutional coordination mechanism. The research shows that the consumption demand of cultural tourism for the elderly has not weakened, and it has been expanding in various fields such as recreation, cultural experience, short-distance leisure, etc. However, the existing digital portal is still based on the premise of “young user hypothesis”, and the phenomenon of complex interface, complicated links and repeated functions is common; Secondly, in the first stage, China is a country with a high degree of aging and rich tourism resources, and it has the realistic conditions to develop a bank-issued tourism and carry out an aging pilot, but the service connection between scenic spots, hotels, travel agencies and urban public transport is not smooth enough; Third, the aging transformation can not only be regarded as “enlarging fonts and adding artificial windows”, but should form a systematic transformation path from product design, scene organization, service operation to policy standards. According to the above judgment, the report establishes a five-dimensional collaborative analysis framework of “policy system-smart technology-enterprise kinetic energy-cultural empowerment-service support”, gives a hierarchical promotion strategy, promotes care mode, one-click direct access, voice assistance, risk warning and payment at the product end, improves barrier-free mobile lines, rest spots, emergency calls, old-age signs and manual assistance at the scene end, and promotes evaluation standards, pilot certification and financial incentives at the governance end. The value of this paper lies in transforming the digital divide from an abstract concept into a problem of cultural tourism transformation that can be diagnosed, evaluated and operated, and forming a proposal text that can be adopted by industry associations, cultural tourism authorities and scenic enterprises.

**Keywords:** Silver-Haired Economy; Digital Divide; Cultural Travel Is Suitable for Aging; Smart Tourism; Elderly-Friendly Scenic Spots

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# 1. Introduction

The aging population, together with digital transformation, is profoundly changing the supply and demand structure of the cultural tourism industry in China. According to the statistical bulletin of the National Bureau of Statistics on national economic and social development in 2025, at the end of 2025, the population aged 60 and over in China was 323.38 million, accounting for 23.0% of the total population, and the population aged 65 and over was 223.65 million, accounting for 15.9% of the total population. The scale of the elderly population continues to expand, and the aging trend of cultural tourism consumption is becoming more and more obvious <sup>[2][3]</sup>. In this case, the development of silver-haired economy is not only a problem in the field of old-age care, but also a problem directly related to the supply structure of tourism products, public cultural services and the inclusive reconstruction of digital public services <sup>[1]</sup>.

For the cultural tourism industry, digitalization should have improved efficiency and reduced transaction costs, but if the platform design and service logic ignore the ability boundary of the elderly, then technology will become a new exclusion mechanism. The elderly often encounter operational breakpoints in booking tickets, scanning codes for admission to the park, checking health codes, electronic payment, navigation and online customer service, etc. Breakpoints have problems of insufficient access and skills, as well as unfriendly design and incomplete service. According to the public reply of the National Health and Wellness Commission, the relevant departments have carried out aging adaptation transformation on 858 websites and mobile apps, indicating that the country has been carrying out digital aging adaptation, but there is still a large space for subdivision and optimization in the cultural tourism scenario <sup>[8]</sup>.

Yantai, China is the main observation object of this paper. On the one hand, the degree of aging is high. In 2024, the Civil Affairs Bureau of Yantai clearly pointed out in the policy interpretation that the elderly population of Yantai registered at the end of 2023 reached 1.976 million, accounting for 30.86% of the total registered population, and the pressure of aging coexisted with the consumption potential of silver hair; On the other hand, Yantai is rich in tourism resources. In 2024, the city received 98.0844 million domestic tourists and realized domestic tourism income of 113.972 billion yuan, which has a realistic basis for transforming the silver-haired customer base into a tourist growth pole <sup>[4]</sup>. Therefore, taking Yantai as a sample to study the aging of cultural tourism has both local practical value and strong spillover and replication significance.

On the basis of the existing project foundation, this report connects the research motivation, research content, improvement path, adoption and transformation in series, and strives to form a research report closer to the submitted text of formal results <sup>[5]</sup>. This paper does not make fictional statistics on the original questionnaire details that are not provided with the annex. On the basis of questionnaires, interviews, case visits, literature review, etc <sup>[6][7]</sup>. That have been formed in the early stage of the project, the comprehensive public official data, policy texts and verifiable case materials are summarized and analyzed, so as to ensure that the conclusions are safe and the statements are nuclear.

*Figure 1 Shows the changes in the size of the elderly population in China. The data source is the statistical bulletins of the National Bureau of Statistics on national economic and social development in 2024 and 2025.*

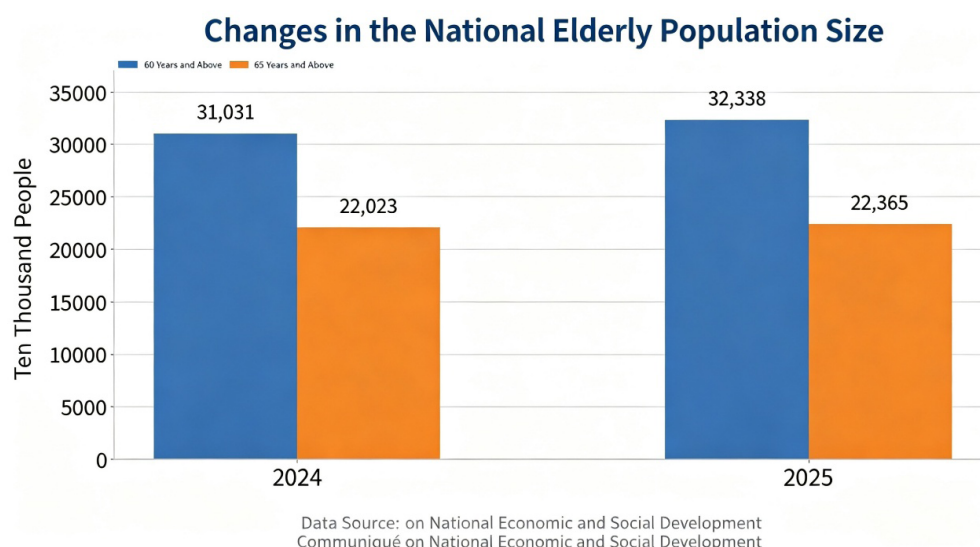
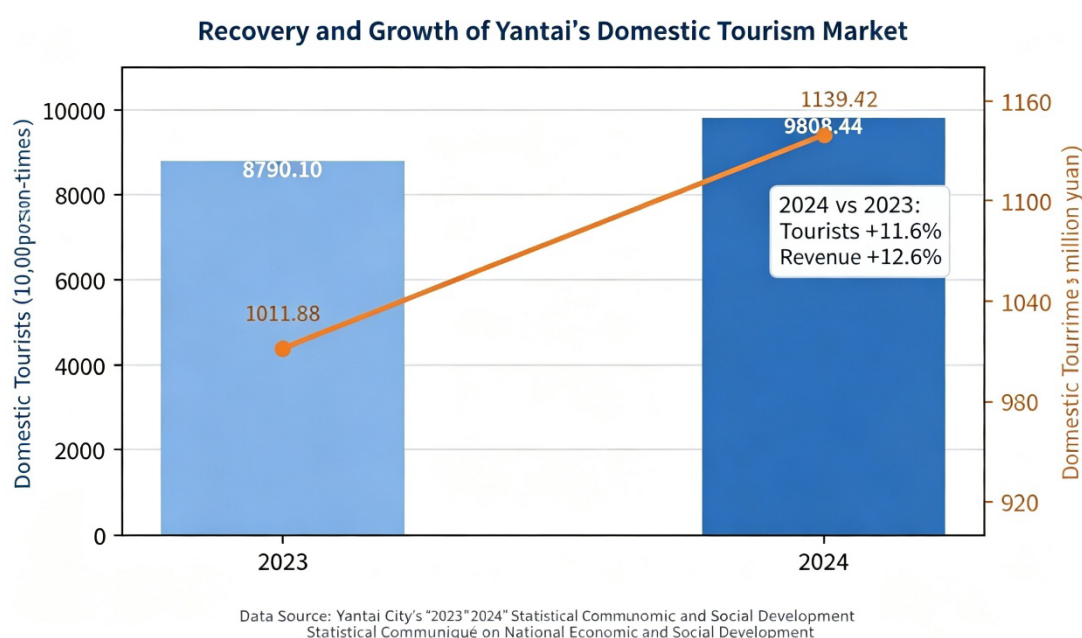


Figure 2 Shows the recovery and growth of Yantai's domestic tourism market. The data comes from the statistical bulletins of Yantai's national economic and social development in 2023 and 2024.



## 2. Study the Present Situation

### 2.1 The Elderly Tourism Behavior and Consumption Decision-Making Research

The systematic research on the tourism behavior of the elderly in the international tourism circle started in the 1990s. Early research focused on the motivation classification, destination choice and consumption characteristics of elderly tourists. Shoemaker(2000) conducted a ten-year follow-up study on the mature tourism market, and found that the consumption motivation of elderly tourists gradually shifted from the sightseeing demand of “visiting here” to the complex demand of cultural experience, health preservation and social interaction. Fleischer, Pizam, Zhang and Wu(2006) and other scholars have made a detailed study on the elderly tourism market successively, and found that there are significant heterogeneity within the elderly tourists group-age, health status, income level, educational background and past travel experience have jointly shaped differentiated tourism preferences. In recent years, the research perspective has gradually shifted from descriptive analysis to mechanism explanation: Kim et al. (2017) used the planned behavior theory (TPB) to investigate the psychological mechanism of the elderly tourism decision-making, and found that the influence of perceived behavior control on the online booking willingness of the elderly group is significantly greater than the subjective norm. Sun Qiong et al. (2024) further explored the promotion and transmission mechanism of tourism information empowerment on the tourism behavior of the elderly<sup>[9][10][11]</sup>. The empirical results show that information accessibility and ease of use indirectly enhance the travel willingness and consumption expenditure of elderly tourists by enhancing their sense of self-efficacy.

### 2.2 Research on the Interaction Between Smart Tourism and Elderly Users

With the rise of the concept of Smart Tourism, the cross-study of digital technology and tourism experience has become the focus of international tourism research in recent ten years. Gretzel et al. (2015) defined smart tourism as a new paradigm that relies on information and communication technology to enhance tourism experience, integrate resources and create value together<sup>[12]</sup>. Qiao Xiangjie (2022) examined the empowerment mechanism of smart tourism from the perspective of high-quality development, emphasizing that technology empowerment should not be at the expense of service fairness<sup>[13]</sup>. However, under the prosperity of smart tourism, the interaction barriers between elderly users and digital tourism platforms have gradually attracted academic attention. Nielsen's (2013) research on the usability of elderly users shows that the success rate of users over 65 when completing online booking tasks is only 53% of that of young users, and the completion time is about 2.3 times that of the latter<sup>[14]</sup>. A survey of elderly tourists in Spain by European scholars found that more than 62% of the respondents had encountered at least one operational dilemma of “unable to complete it by themselves” in the use

of travel apps. Japanese scholars' assessment of the aging adaptability of the "Smart Kyoto" tourism system shows that even though the digital system has undergone initial aging adaptation, about 38% of the elderly users still express "lack of confidence in using it". These empirical data show that the inclusive construction of smart tourism is in the initial stage all over the world, far from reaching the ideal state of "designing for all".

### **2.3 Research on the Aging Transformation Path and Evaluation System of Cultural Tourism**

In terms of transformation path, international research has expanded from single interface optimization to full chain service reconstruction. On the interface level, the "ACCESS-IT" project funded by Council of Europe put forward a guide for the design of tourist websites for elderly users, covering four dimensions: visual presentation, information architecture, navigation logic and error recovery. On the service level, Australian scholars Packer and Ballantyne(2016) take museums and cultural heritage sites as cases to discuss the suitability of "slow-paced" cultural experience for elderly visitors, and put forward that the navigation content and moving line design should be reconstructed around the perceptual rhythm of the elderly. In terms of physical space, the World Tourism Organization (UNWTO) put forward comprehensive suggestions on barrier-free facilities, leisure space, medical security and labeling system in the Guide to Elderly Friendly Tourism Destinations (2016). It is worth noting that the international consensus has gradually formed: the real aging adaptation is not to superimpose the old-age model on the product, but to embed the inclusive concept into the whole process of destination planning, product development, service operation and evaluation feedback. Some scholars put forward the concept of "Age-Friendly Maturity", trying to establish a comprehensive evaluation tool covering the dimensions of digital accessibility, physical accessibility, service accessibility and institutional security, so as to promote the aging from qualitative advocacy to quantitative evaluation.

### **2.4 Cross-Border Comparison between the Digital Divide and the Inclusiveness of Cultural Tourism**

The transnational comparative study of digital travel aging is a new research direction in recent years. Data from the European Union's "Digital Economy and Society Index" (DESI) show that Nordic countries (Finland, Sweden and Denmark) are ahead in terms of digital inclusion, and the Internet usage rate and digital skills of their elderly population are significantly higher than those of southern and eastern European countries. This difference is closely related to the systematic investment of countries in digital literacy education, social welfare investment and aging legislation. In the Asia-Pacific region, Singapore's "Smart Country" strategy has incorporated digital inclusion into its core indicators, and systematically narrowed the digital gap between generations through community digital literacy training, multilingual interface support and "digital ambassador" system. Japan's research on "ICT utilization in ultra-old society" points out that the demand of elderly cultural tourists for voice interaction, one-click operation and manual instant transfer far exceeds the expectations of platform designers, and calls for the establishment of a "technology-manual" mixed service model, rather than pure digitalization as the only development direction. These comparative studies reveal an important law: the effectiveness of cultural tourism aging does not depend on the advanced degree of a single technology, but on whether a coordinated and complementary ecosystem can be formed among technology, policy, space and social support.

## **3. A summary of Literary Contributions**

### **3.1 The Theory of Successful Aging and Active Aging**

The theory of "Successful Aging" put forward by Rowe and Kahn in 1987 defines health, cognitive function and social participation as the three core pillars of the quality of life of the elderly. This theory breaks through the traditional paradigm that the elderly are regarded as passive care objects, and emphasizes the positive significance of maintaining autonomy and social connection for the quality of life in later years. Subsequently, in 2002, WHO further put forward the policy framework of "Active Aging", which promoted "participation" to the same important position as "health" and "safety". In the evolution of this theory, cultural tourism activities are regarded as an important carrier to realize active aging-it is not only a way for the elderly to maintain social connection, but also a way for them to realize their self-worth and enrich their spiritual life. Therefore, the starting point of the research on the aging of cultural tourism should not be limited to "providing convenience for the elderly", but should focus on building a complete service system that supports the elderly to participate in cultural tourism activities independently, equally and fully. Han Ye and Shen Tong (2021) combed the logical evolution of the national

strategy from “active aging” to “active response to population aging” from the situation of China, and pointed out that the system design should position the elderly as active subjects of social activities rather than passive welfare recipients.

### 3.2 Technology Acceptance Model and Digital Inclusion Theory

According to the Technology Acceptance Model, TAM) established by Davis in 1989, whether users adopt a new technology mainly depends on two dimensions: Perceived Usefulness and Perceived Ease of Use. When the follow-up study extended TAM to the elderly group, it was found that the technology acceptance decision of the elderly users was also affected by additional factors such as self-efficacy, technical anxiety and social support. The theory of integrated technology acceptance (UTAUT) put forward by Venkatesh et al. in 2003 further takes age as a key regulating variable, pointing out that there are systematic differences between the elderly group and the young group in performance expectation, effort expectation, social influence and convenience conditions. Guo Yiwei et al. (2017) conducted an empirical investigation on the use status of smart travel App in the context of aging in Beijing, and found that a considerable proportion of elderly users have smart phones, but due to complicated interfaces, unclear feedback and fear of misoperation, the actual usage rate is much lower than that of young users. This series of research reveals a key problem: at present, most of the digital platforms for literature and travel are designed by default that users have high digital literacy and quick operational response, and this implicit “young user assumption” leads to systematic use obstacles for the elderly.

### 3.3 Multi-Level Theory of Digital Divide

The study of Digital Divide has gone through a theoretical deepening from single to multi-dimensional. Early research focused on the “first digital divide”, that is, the inequality of access opportunities for information and communication technologies; Then it expanded to the “second digital divide”, focusing on the differences in digital skills and usage. In recent years, the international academic community has paid more and more attention to the “third digital divide”, that is, the structural bias contained in digital technology design itself. Empirical studies by Hargittai (2012), van Deursen and van Dijk (2014) and Robinson et al. (2015) show that digital exclusion is not only due to the lack of equipment or skills of the elderly, but also because the design logic of many digital products and services systematically ignores the cognitive characteristics, operating habits and risk preferences of the elderly. As far as the cultural tourism scene is concerned, the design problems such as too small font size, insufficient color contrast, too deep functional level, vague feedback information, and lack of error recovery path are not technical problems, but structural deviations in design concepts. This theoretical perspective shifts the focus of analysis from “helping the elderly adapt to technology” to “requiring technology to serve the elderly users”, which provides an important paradigm shift basis for the study of the aging of cultural tourism.

### 3.4 Universal Design and Inclusive Design Theory

The concept of Universal Design was formally put forward by the American architect Mace in 1988, arguing that the design of products or environments should be used by all people as much as possible without specialized transformation or auxiliary adjustment. The theory establishes seven basic principles: fair use, flexible use, simplicity and intuition, perceptibility of information, fault tolerance, low physical consumption, and appropriate size and space. Inclusive Design, on the basis of universal design, further emphasizes that the design process should actively include diverse user groups to avoid excluding specific groups from mainstream products. The BS 7000-6 standard issued by the British Standards Institute (BSI) in 2005 provides an operable implementation framework for inclusive design. These two theories have established a fundamental methodology for the aging transformation of cultural tourism: the aging design should not be positioned as a subsidiary “caring mode” or an additional option that is difficult to find, but should be embedded in the whole design process of mainstream cultural tourism products and services, so that accessibility becomes the default configuration rather than a remedy.

### 3.5 Relevant Theories of Technological Innovation for the Aged.

Xu Yusen et al. (2017) made a systematic review and prospect on the research of technology innovation for the aged, pointing out that the development of technology for the aged has gone through the evolution path from assistive devices to intelligent systems, and from single function to comprehensive platform, and emphasized that the future technology for the aged should develop in the direction of “seamless integration into daily life” instead of manufacturing specialized “label for the aged” products. Ding Deguang (2024) made a multi-case analysis on the innovation mechanism of smart tourism adaptive aging



based on grounded theory, and extracted three key innovation dimensions, namely, technical adaptation, scene reconstruction and service collaboration, which provided an analytical framework for understanding the internal mechanism of adaptive aging transformation.

## 4. Research Design

### 4.1 .The Oretical Basis

#### 4.1.1 The theory of successful aging

Theoretical source: Rowe and Kahn (1997).

Core content: High-quality life for the elderly needs to take into account three elements-health protection, social participation and autonomy. This theory advocates empowering the elderly through technical, policy and social support, so that they can break through physiological limitations and realize “active aging”.

Application in this study: the elderly are not passive recipients of services, but should become active participants in cultural tourism activities. The goal of cultural tourism to adapt to aging should not only be to take care of it, but to support the normal and quality participation of the elderly. Digital travel should provide accessible, understandable, operable and recoverable service portals. 2. Technology Acceptance Model (TAM)

Theoretical source: proposed by Davis (1989).

Core content: users’ willingness to accept new technologies is determined by “perceived usefulness” and “perceived ease of use”, and perceived ease of use can enhance perceived usefulness.

Application in this study: Many travel applications in the elderly group are fully functional, but they lack the interface and process design that people are willing to use, dare to use and can use continuously. When functions such as reservation, payment, write-off and navigation are embedded in complex pages layer by layer, even if the system is fully functional, it will reduce the user’s willingness to use it because of its difficulty. The aging design should aim at the cognitive characteristics of the elderly, reduce operational complexity (such as voice interaction) and strengthen functional practicability (such as one-click reservation).

#### 4.1.2 The third layer theory of digital divide

Theoretical source: Van Dijk (2020) proposed the three-level stratification of the digital divide.

Core content: the first layer: the inequality of equipment and network access; The second layer: the difference between digital skills and literacy; The third layer: structural exclusion caused by technical design (such as complex interface and information overload)

Application in this study: The elderly are not born unable to use technology, but many technologies are not really designed for the elderly. Font size, spacing, icon cognition, functional hierarchy, language prompts and operation paths will all affect the use efficiency and psychological burden of elderly users. The key point of cultural tourism adaptation is to change from “user adapting technology” to “technology adapting users”. The research needs to analyze the third gap in digital services and put forward targeted optimization strategies to reduce social exclusion in the use of technology.

#### 4.1.3 User experience design theory

Theoretical sources: User-centered design (UCD), Norman’s “three levels of emotional design” (instinct layer, behavior layer and reflection layer).

Core content: Optimize products from user needs, cognitive habits and emotional experience. The instinctive layer pays attention to intuitive feelings (big buttons, high contrast); The behavior layer pays attention to operational efficiency (one-click navigation, voice assistant); The reflective layer pays attention to emotional identity (cultural elements, sense of belonging).

Application in this study: Combining the physiological characteristics of the elderly (visual decline, slow operation) and psychological needs (nostalgic cultural preference, sense of security), designing operational logic that conforms to the physiological instinct of the elderly, optimizing the interaction efficiency of the behavior layer, and enhancing emotional identity and willingness to use through local cultural elements.

## 4.2 Research Methods

### 4.2.1 Text analysis method

Methods: Systematically collect, sort out and analyze policy documents, government bulletins, industry reports and other text materials, and refine the logic of policy evolution and the gap of system supply.

The specific application in this study: sorting out the national, provincial and municipal policy requirements on silver-haired economy, digital aging, old-age tourism, smart tourism, etc., including the Opinions on Developing Silver-haired Economy to Improve the Well-being of the Elderly by the General Office of the State Council, the Action Plan on Increasing Silver-haired Tourism Trains to Promote the Development of Service Consumption by nine units including the Ministry of Commerce, and the Notice on Recommending and Selecting Typical Cases of Old-age Tourism by the Ministry of Culture and Tourism, etc., and sorting out the current situation of policy orientation and system guarantee.

#### 4.2.2 Case induction method

Methods: Typical cases were selected for in-depth analysis, and the common laws and differentiated characteristics were refined through comparison and induction.

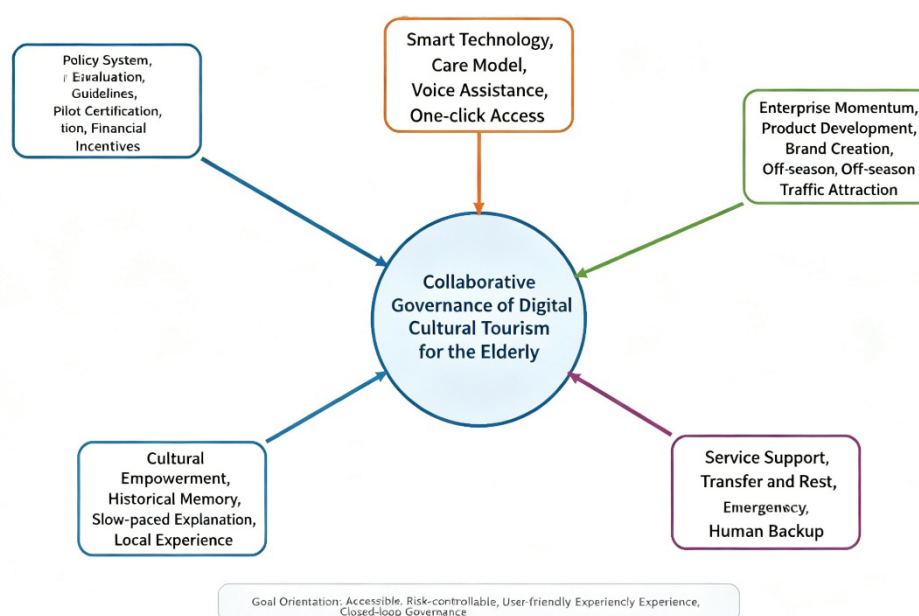
Specific application in this study: the typical obstacles in scenic spots, platforms, transportation, accommodation and other links are analyzed. Specifically, it includes: establishing 36 domestic and foreign case databases, completing observation logs of 12 cultural tourism scenic spots, and completing diagnosis reports of service pain points in 5 scenic spots. By comparing and analyzing the successful experience and failure lessons of aging-adaptive transformation, a reproducible transformation model is refined.

#### 4.2.3 Frame construction method

Methods: On the basis of theoretical analysis and empirical investigation, a systematic analysis framework and evaluation index system are constructed, and scattered problems are brought into a unified analysis model.

The specific application in this study: to build a five-dimensional collaborative framework of “policy system-smart technology-enterprise kinetic energy-cultural empowerment-service support”, and to upgrade the aging-adaptive transformation from single-point optimization to system reconstruction. At the same time, a suitable aging evaluation system including five first-level indicators and multiple second-level indicators is constructed to form a diagnosable, evaluable and operable analysis tool.

Figure 3 Schematic diagram of the improvement path of “five-dimensional collaboration” for digital travel adaptation and aging



#### 4.2.4 Normative research method

Methods: Based on value judgment and logical reasoning, the problem diagnosis is transformed into countermeasures and suggestions at the level of necessity, and the application orientation of research is emphasized.

The specific application in this study: the digital divide problem is transformed from an abstract concept to a problem of cultural tourism transformation that can be diagnosed, evaluated and operated. Turn the problem diagnosis into standardized, listed and acceptable countermeasures and suggestions, so that the research results can directly serve policy formulation, standard formulation and enterprise transformation, and form a proposal text that can be adopted by industry associations, cultural and tourism authorities and scenic enterprises.

### 4.3 Description of Technical Route

The research follows the logic of “problem identification-current situation diagnosis-cause analysis-path construction-evaluation design-achievement transformation”;

4.3.1 Problem identification: Through literature review and policy analysis, the research gaps and practical pain points of cultural tourism adaptation aging are clarified.

4.3.2 Current situation diagnosis: Through case induction and field investigation, the system identifies obstacles at four levels: interface, service, scenario and governance.

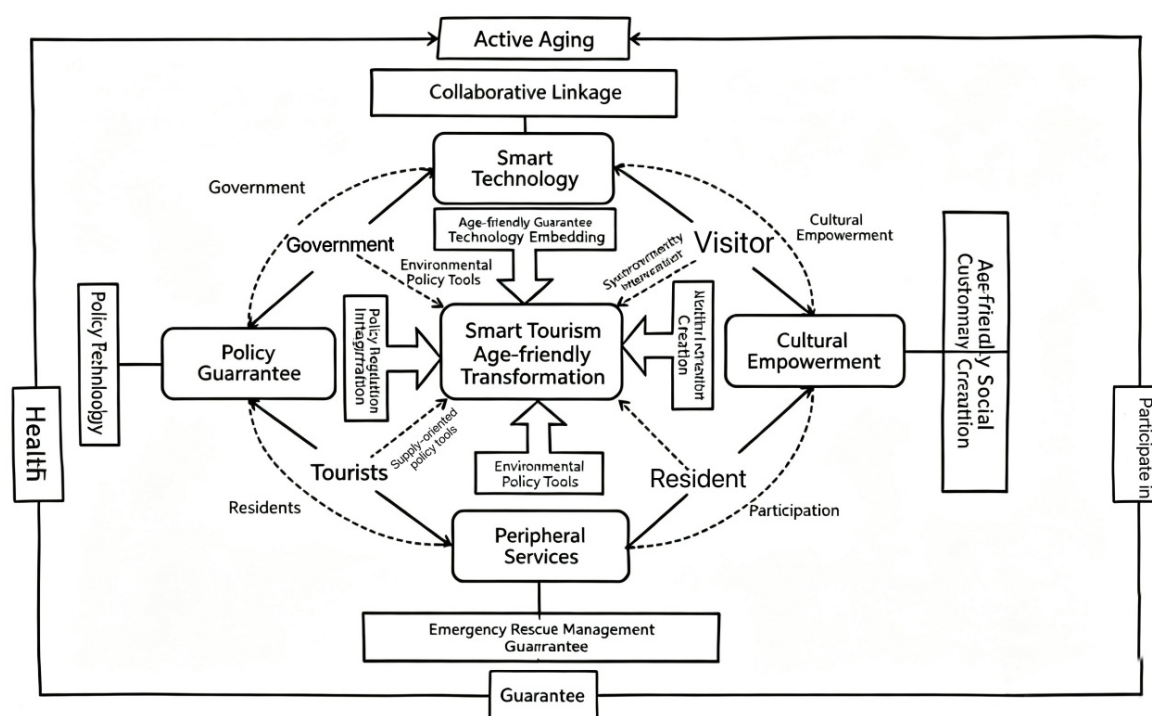
4.3.3 Cause analysis: Using four theoretical foundations, explain the causes of the digital divide from four dimensions: product design logic, service organization mode, system standard soundness and business value cognition.

4.3.4 Path construction: Based on the five-dimensional collaborative framework, an improved path of hierarchical advancement is proposed.

4.3.5 Evaluation and design: Build a two-level index system of basic standard items and promotion demonstration items.

4.3.6 Transformation of achievements: adopting standardized research methods to form acceptable proposal texts for different subjects.

Figure 4 Schematic diagram of smart tourism aging transformation



## 5. The Problem of Development

From a macro point of view, the international cultural tourism market has already had the dual foundations for the transformation of the banking tourism system. First, the global elderly population has a large base and a high proportion, and the actual demand is constantly released. Second, most countries have a complete cultural tourism resource system, high-quality scenic spots and huge tourism revenue. In recent years, the number of domestic tourists in many countries has continued to rise, the scale of the tourism market has increased year by year, and the recovery of the cultural tourism industry is obvious. From this, we can see that the international cultural tourism market is recovering quickly and has great vitality.



Once the elderly group gets better service support, it will have a strong consumption transformation effect.

However, from the real experience of the elderly, the digitalization of cultural tourism has not completed the “aging translation” simultaneously. At the front end of travel, most travel information and ticketing portals are bound to applets, WeChat official account and comprehensive platforms. Older people need to go through real-name registration, verification code verification, face recognition, payment binding and other links. Any problem in any link will cause the interruption of the whole consumption chain. For the elderly with basic digital ability, the biggest problem is not that they can’t click, but that the system feedback is unclear, the return path is complex, and the error recovery is difficult; For the elderly with weak digital ability, they rely more on relatives and friends to make orders or offline windows. Therefore, the consumption of cultural tourism has objectively become divided into “people who know numbers are more convenient, and those who don’t know numbers are marginalized”.

In the middle of the scenic spot, the problem of aging adaptation is more manifested in the integration of space and service. Theoretically speaking, digital tour guide, online map, electronic interpreter and code scanning explanation can improve efficiency, but for the elderly, if the on-site guide system is unclear, there are too few manual consultation points, there are insufficient leisure facilities on the road, and it is difficult to identify toilets and barrier-free facilities, it is difficult to form a good experience with digital tools. Especially in some scenic spots with coastal, mountainous and historical blocks, elderly tourists pay more attention to the needs of moving line safety, seating facilities, weather conditions, emergency response and health protection, and need digital services to be transformed together with space services.

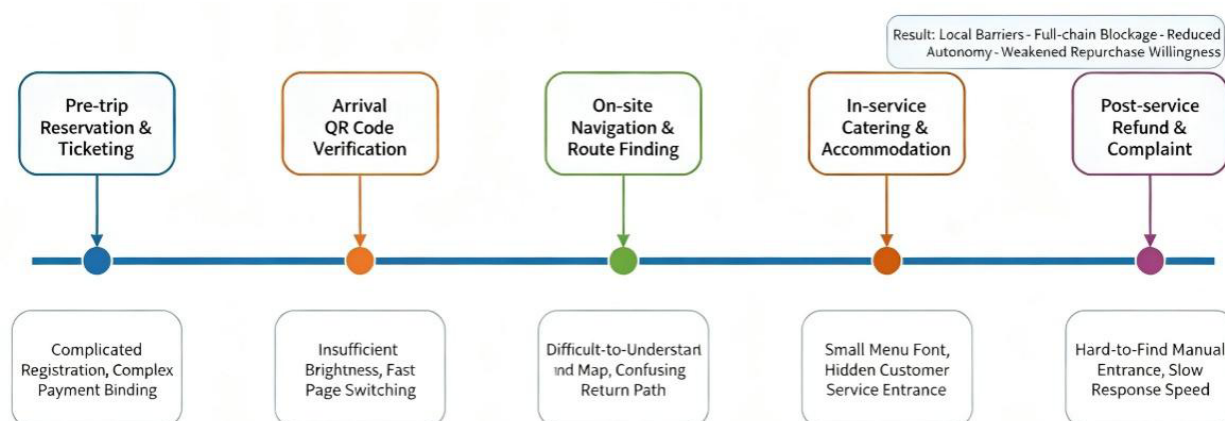
Difficulties will also be encountered in complaints, evaluation, refund, change of visa and re-purchase after travel. Many platforms embed after-sales service into intelligent customer service and multi-level menus, which makes it impossible for the elderly to quickly find the manual consultation entrance. The membership system of some hotels, scenic spots and travel agencies relies on APP, which cannot promote the long-term consumption association of elderly consumers. Therefore, at present, the main contradiction of the aging of cultural tourism is not whether it is digitized, but whether digitalization can really be transformed into services that the elderly can perceive, understand and use.

From the perspective of elderly tourists, the most typical thing at present is continuous frustration. You can purchase tickets online, but you can’t complete the navigation to the station; You can find the entrance to the scenic spot, but you can’t use digital tour in the scenic spot; You can scan the code to pay, but you can’t find the direction when you refund, change or complain. Continuous frustration will seriously weaken the sense of self-efficacy of the elderly, thus turning an ordinary travel experience into a psychological expectation of trying not to operate by yourself in the future. In the long run, it will aggravate the elderly’s dependence on children’s agency, acquaintances’ agency and passive travel in tour groups, which is not conducive to the elderly to form a more independent, equal and calm cultural consumption mode.

*Table 1 Typical digital obstacles of elderly tourists in the consumption chain of cultural tourism*

| link             | Typical scene                        | Main obstacle                                                                                                                  | Direct consequence                                                                     |
|------------------|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Before going out | Online booking of tickets            | There are many steps in real-name registration, difficult identification of verification code and complicated payment binding. | Give up travel or turn to rely on others to do it.                                     |
| Upon arrival     | Scan code to enter the park/check    | Insufficient brightness of QR code, unstable network and fast page switching.                                                  | Longer queue time and higher on-site anxiety.                                          |
| On tour          | Digital Tour and Route Search        | The cost of map understanding is high, the voice entrance is hidden and the return path is chaotic.                            | The efficiency of the tour decreased and key points were missed.                       |
| In service       | Accommodation and catering options   | Small menu font size, complicated room information and unclear online customer service.                                        | Passive consumption decision-making and declining satisfaction.                        |
| After-sales      | Return and change/complaint feedback | The manual entrance is difficult to find, the problem classification is complex and the response is slow.                      | The cost of rights protection is high, and the willingness to repurchase is declining. |

Figure 5 Closed-loop diagram of the obstacles of elderly tourists' cultural tourism consumption.



## 6. The Global Cultural Tourism Aging Optimization Suggestions (Five-Dimensional Collaborative Improvement Path)

Based on the global industry status, theoretical basis and advanced experience at home and abroad, this paper constructs a five-dimensional collaborative improvement system of policy system, smart technology, enterprise kinetic energy, cultural empowerment and service support, and at the same time distinguishes basic compliance items from promotion demonstration items, formulates a layered landing strategy, and supports the complete implementation of the guarantee scheme.

### 6.1 Policy System: Improve the Standard System and Strengthen Top-Level Guidance

#### 6.1.1 Formulate uniform service standards suitable for aging

Led by the competent departments of cultural tourism in various countries, in conjunction with the relevant departments of civil affairs, housing construction, transportation, market supervision, health and health, the evaluation guidelines and industry standards for cultural tourism aging services were issued, and the basic requirements and promotion requirements of digital services, barrier-free facilities, service processes, emergency mechanisms, privacy protection and other contents were clarified, and the aging adaptation requirements were changed from advocacy requirements to hard assessment indicators.

#### 6.1.2 Establish certification and incentive mechanism.

Carry out the certification selection of "old-age-friendly scenic spots, hotels and travel agencies", and give resources to the evaluated subjects in terms of policy support, publicity and promotion, and project declaration; Set up special financial incentive funds to subsidize enterprises that carry out aging-resistant software and hardware transformation and personnel training.

#### 6.1.3 Build a cross-departmental collaboration and data sharing mechanism.

Open up multi-departmental data and service ports such as cultural tourism, transportation, medical care and community to realize information exchange; Establish a closed loop of normalized supervision and evaluation, and promote continuous optimization of services based on tourist experience, complaint data and repurchase rate.

### 6.2 Smart Technology: Simplify the Functional Design and Lower the Operating Threshold.

All travel platforms, small programs, and apps are forced to go online to care for the elderly, realizing one-click direct access to high-frequency functions such as ticket booking, route navigation, customer service consultation, and complaint feedback; Using large characters and high contrast interface, with full voice broadcast, the content of the form is simplified and the error prompt and cancellation functions are optimized. For high-risk and difficult links such as face recognition, real-name verification and online payment, alternative channels such as manual verification, offline payment, and payment by relatives and friends are set up to avoid the restriction of elderly tourists by a single digital path. Simplify the operation logic of electronic map and audio navigation, and enlarge the logo icon; Set the manual customer service entrance in an eye-catching position on the page to shorten the operation path of after-sales and consultation.

### 6.3 Enterprise Kinetic Energy Level: Tap the Market Value, and Create Products Suitable for Aging

Combined with the travel preferences of the elderly, we will develop special products such as slow travel, in-depth tour of

history and culture, low-intensity non-legacy experience, and short-distance residence with medical care to match the travel needs of the elderly with slow pace, emphasis on experience and health. Incorporate the aging service into the business assessment, change the business philosophy, and face up to the consumption potential of silver-haired customers; Relying on the online and offline membership system, we will maintain the elderly customer base and improve the repurchase rate and reputation. Absorb the excellent practices of aging adaptation from all over the world, adhere to the concept of “universal design”, and integrate the aging adaptation function into the main product process, rather than as an additional function, so as to realize the normalization and aging adaptation of services.

#### 6.4 Cultural Empowerment: Meet the Needs of the Elderly and Upgrade the Connotation of Experience

Relying on local historical culture, folk customs, intangible skills, red culture and other resources, we will create cultural experience content suitable for the elderly. Design and explain the cultural tourism products with slow speech speed, sufficient stay time and low interaction intensity, focusing on historical memory, homesickness culture, collective experience and other directions of interest to the elderly, and putting an end to simply “down-matching” younger products to the elderly.

#### 6.5 Service Supporting Level: Improve the Physical Scene and Fill the Short Board under the Line

Improve the barrier-free moving lines along scenic spots, hotels and transportation, and add old-age signs, night lighting and anti-skid facilities throughout the region; Encrypt rest points along the way, shade and shelter facilities, and rationally arrange toilets and barrier-free toilets. Set up emergency call devices and medical service points in the whole region, and establish an emergency linkage mechanism between scenic spots and surrounding medical institutions; Increase risk warnings in payment, operation and other links to protect the property and information security of elderly tourists. The whole scene retains artificial windows, special windows for the elderly, and offline paper bills and vouchers; Set up a volunteer service team to provide on-site guidance, operational assistance and other convenience services for elderly tourists.

#### 6.6 Establishment of Grading Evaluation Indicators

Distinguish between basic standards and upgrading demonstration items, take into account the difficulty of landing and innovation and development, and form a hierarchical evaluation system.

*Table 2 Suggestion on Evaluation Index of Cultural Tourism Aging*

| First-order dimension      | Key indicators                                                                                     | Suggested explanation                                                                                                                                     |
|----------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Digital product            | High contrast of Chinese characters, voice assistance, one-click direct access and error recovery. | Focus on evaluating whether high-frequency functions such as ticket purchase, reservation, navigation, consultation and complaint can really be achieved. |
| Space facilities           | Barrier-free moving line, rest point, toilet, emergency call, lighting and anti-skid               | Pay attention to the continuity and identifiability of scenic spots, hotels, traffic connections and other scenes.                                        |
| service process/ procedure | Manual bottoming, paper substitution, special window for the elderly, escort and agency mechanism  | Avoid locking elderly tourists in a single online path.                                                                                                   |
| safety protection          | Payment prompt, privacy protection, medical point, emergency linkage                               | It should not only be convenient, but also reduce the burden of misoperation and risk perception                                                          |
| Operational governance     | Training mechanism, closed-loop evaluation, pilot certification, financial incentives              | Let aging adaptation change from single point to continuous iteration and scale replication.                                                              |

#### 6.7 The Implementation of the Promotion Plan in Stages.

According to the three stages of diagnosis-pilot demonstration-comprehensive promotion, the transformation work will be steadily promoted: the first stage: diagnosis. Comprehensively investigate all kinds of service obstacles in online platforms and offline scenarios, and prepare a list of problems, responsibilities and transformation; The second stage: pilot demonstration. Select the main body of cultural tourism with large passenger flow and standardized management to carry out pilot projects, and summarize the replicable service norms and operational procedures; The third stage: standard promotion. Solidify the pilot experience and promote the service standard, training system and evaluation rules to the whole industry.

## 6.8 Comprehensive Implementation of Safeguards

Organizational guarantee: build a multi-party cooperative mechanism of government, industry associations, cultural tourism enterprises, communities and volunteers; Financial guarantee: set up special support funds to subsidize software and hardware transformation, personnel training, pilot evaluation and other work; Talent guarantee: special training for the elderly friendly service for front-line personnel such as tour guides, receptionists, customer service and security guards; Data guarantee: establish the experience feedback mechanism for elderly tourists, and form a continuous improvement closed loop with work orders, satisfaction and repurchase rate.

Figure 6 Schematic diagram of the improvement path of “five-dimensional collaboration” for digital travel adaptation and aging

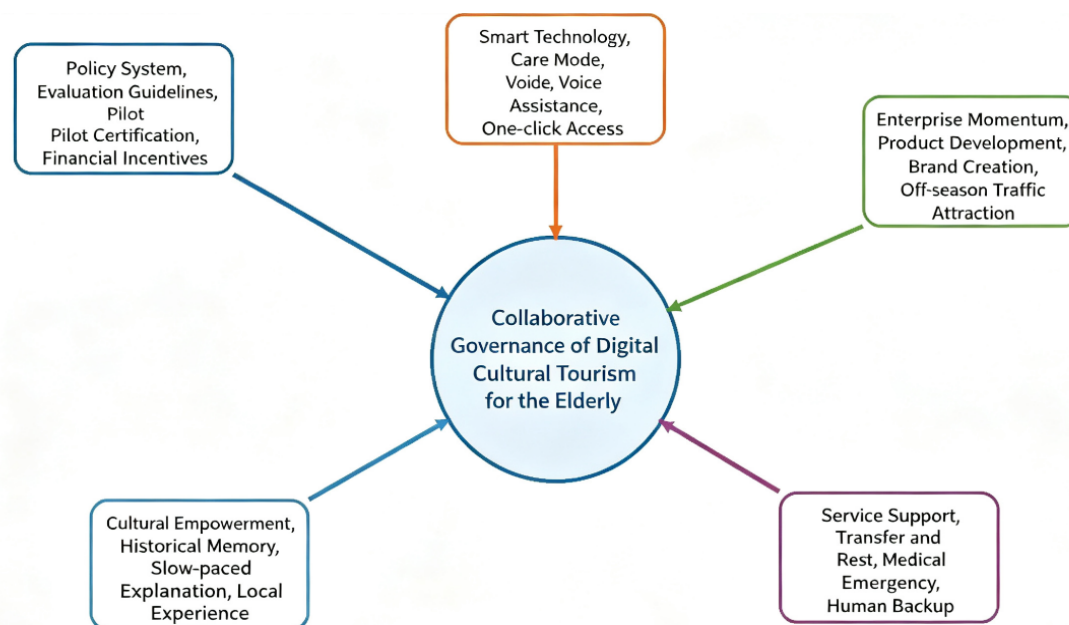
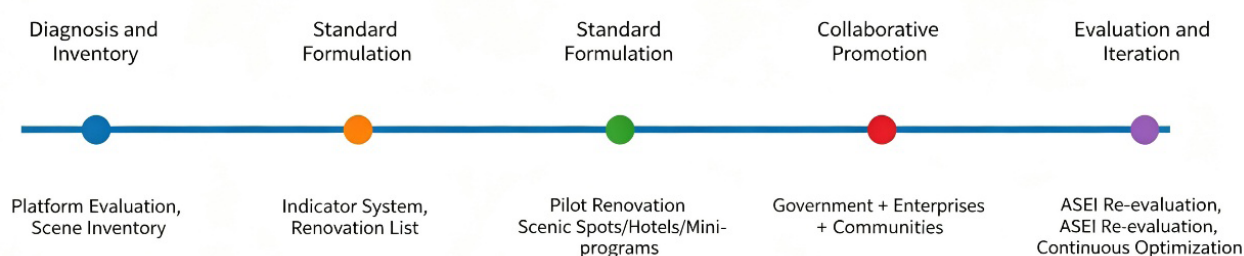


Figure 7 Roadmap for the Implementation of Cultural Travel Adaptation Aging

### Implementation Roadmap for Senior-Friendly Cultural and Tourism



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