

Study on the Service Design of Ouyue Cultural Tourism based on the Concept of Heritage Interpretation

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Abstract: Heritage interpretation is an important element in enhancing Ouyue cultural tourism services. Based on the perspective of heritage interpretation, this study explores the design ideas and models of Ouyue cultural tourism services, and ultimately realizes design support for its tourism service development. After exploring the tangible nature of cultural heritage and the intangible nature of experience in tourism services, and combining with relevant research on heritage interpretation and service design, this study reviews the process of heritage interpretation experience design in existing Ouyue cultural tourism services. Finally, design model of tourism services is constructed based on the perspective of heritage interpretation. The effectiveness of the design model was verified. The design practice has been practically verified using the example of the miner's village in Fude Bay, Wenzhou. According to the three stages of research and analysis, design planning, as well as verification and evaluation, this study analyzes and reconstructs the interpretation connotation, medium and content in the model, as well as continuously improves the manifestation of Ouyue cultural heritage, which help to not only better present the historical information and humanistic connotation of Ouyue culture but also realize the orderly development of Ouyue cultural heritage interpretation. Therefore, this study concludes design points of the heritage interpretation experience with service as the core.

Keywords: Ouyue culture, Service design, Heritage interpretation, Integrated development of cultural tourism.

1. Introduction

Cultural heritage is a legacy of history that has undergone the screening of social value systems [1] and consists mainly of architecture, art, scenic attractions, cultural relics and contemporary lifestyles that reflect historical heritage. Today, cultural tourism, with cultural heritage at its core, is becoming the preferred form of tourism due to its high historical and cultural, aesthetic and artistic, scientific and social values, which have shown great strengths in appealing tourists. As a result, visiting cultural heritage has become an increasingly popular choice for the general public. However, the popularity of a heritage site does not mean that it corresponds to a good cultural tourism experience. It is important to establish a good interaction between cultural heritage and tourists, and to allow cultural heritage to communicate with tourists, which requires a well-interpreted service experience between cultural heritage and tourists [2]. At present, the heritage interpretation of cultural tourism has problems such as outdated concepts, single approach and rigid application of case experiences [3], and however most of the relevant studies focus on conceptual analysis, interpretation media, case planning and design, evaluation of interpretation systems and interpretation of new tourism methods [4]. The study aims to build a more effective cultural tourism service design model, so that Ouyue cultural tourism can break away from the existing homogenised and commercialised development mode, and thus meet the public's tourism experience needs.

2. An Exploration of Service Design Research

In recent decades, services have permeated almost all industrial activities and areas of contemporary life [5]. Although different topics such as service marketing, service management, service engineering and service economics

have emerged from a multidisciplinary perspective, service design has gradually shown its unique appeal over the past three decades. Service design is not a new, independent academic field, but rather a cross-disciplinary study combining various expertise [6]. As an output result, service design is often oriented towards the improvement of service quality and is therefore considered a key force and prerequisite for ensuring service quality [7]. This has had a huge impact on today's rapidly developing service industry and has injected fresh blood into the innovation of cultural tourism services in the new era.

2.1. The intangibility of service design introduces heritage interpretation experiences

In an era where service is valued, the demand for the product itself has been extended to service and experience, and newer and higher demands are being created as the times go by. Essentially, service is born out of opportunity, and opportunity is when a customer or business need is met [8]. Using service design as a theoretical basis, the intersection of disciplines generates rich and diverse theoretical concepts that can guide designers to integrate innovation from all angles and improve the service design system [9]. Unlike traditional goods that are static, visible and tangible, services are intangible and multifaceted [10]. Intangibility, as a unique property of services, can bring differentiated service experiences and added value to users and service providers. As the value of a service is often in immaterial form, it cannot be quantified. Therefore, service design needs to take the invisible service value as a design concept, shows and delivers it to the service recipient in an visible way, embodying it in the physical environment, cutting into the user's needs, enable user to truly feel the concept and connotation of the service, to agree the value of the service design.

As a core service in tourism services, heritage interpretation is concerned with how the historical information and humanistic connotations of cultural heritage can be effectively presented to visitors, and emphasises the concrete expression of heritage interpretation content. The service design focuses on the intrinsic integrity of the system and on the correlation and coordination between the various components, emphasising the logic of service relationships. The means and forms of interpretation, as the physical outcome of heritage interpretation, are visualised through elements such as interpretation content, interpretation media and environment creation; services, as non-physical, intangible design concepts integrated into the overall heritage interpretation experience, create a complementary relationship between the tangible and intangible.

2.2. Constructing a tourism service design model based on heritage interpretation

The design of heritage interpretation can be considered as the explicit manifestation of the overall interpretation service, through which the presentation and delivery of heritage interpretation is visualised; the service design is an implicit conceptual approach, which deduces the form of the service in terms of its objectives and user needs. This study refers to the IDEA service design process proposed by Professor Tongzheng Song, and thus deduces a heritage interpretation experience design model based on the idea of service design.

The process is based on two parallel design models, one for heritage interpretation and one for service design, and is divided into three design phases: research and analysis, design planning, and verification and evaluation. In the two parallel processes, the steps in the heritage interpretation level corresponds to the service design level. Additionally, each stage is designed collaboratively by combining the different focuses of these two levels. The heritage interpretation level, as the explicit part of the design process, is divided into four detailed steps: background research and assessment, concept planning, detailed design and implementation and feedback; this corresponds to the implicit level of service design, which can be grouped into five steps: exploration, interpretation, design proposition, prototyping and service evaluation. The proportion of content in the steps is positively related to the importance of that part. By using this model as a guiding framework for the design practice of the Fude Bay Miners' Village, this study applies the theory to the practice and draws inspiration from the approach in practice.

3. Fude Bay Miners' Village Tourism Service Design Practice

3.1. Introduction to Fude Bay Miners' Village

Fude Bay Miners' Village is located in Alum Mountain Town, Cangnan County, Wenzhou City, Zhejiang Province. As the oldest mining town in southern Zhejiang, Alum Mountain has a history of about 640 years of mining and smelting, with 60% of the world's proven reserves of alum ore, and is known as the "Alum Capital of the World". The mining production and living system of each period remains, which is the collection of traditional mining, modern mining heritage and vernacular architecture, as well as the most characteristic and valuable mining cultural resources. The Alum Mountain Alum Mine is a unique testimony of the ancient Chinese mining civilisation that has been transmitted

to the present day, and has important heritage values in terms of traditional production processes, technology transmission and belief in mining gods. In this context, Alum Mountain started to implement a series of heritage restoration projects, exploring a transformation path oriented towards heritage conservation and cultural tourism. As a result, Fude Bay has been awarded the "Chinese Traditional Village" (2013), "Chinese Historical and Cultural Village" (2014), "UNESCO Asia-Pacific Cultural Heritage Preservation Award" (2016), and "UNESCO Asia-Pacific Cultural Heritage Preservation Award" (2016). "(2016) and "National Mine Park" (2017). The implementation of relevant projects and the awarding of honours have unleashed the tourism and commercial value of Fude Bay, which has become a pearl of Ouyue cultural tourism.

Through the long-term architectural restoration and spatial improvement of the core heritage of Fude Bay by the government and local NGOs (Non-Governmental Organisations), the main body of the existing heritage has been better preserved, for example, its 'explicit culture', the architectural appearance and internal space, has been greatly enhanced. However, as Fude Bay is still in the early stages of tourism transformation, the government lacks detailed planning for heritage interpretation, and the 'hidden culture', i.e. the historical and cultural connotations of the heritage of Fude Bay and the local customs and traditions, still lacks systematic sorting and in-depth development, which affects the satisfaction of tourists' tourism experience, resulting in the charm and attractiveness of the tourism resources of Fude Bay not being fully discovered. The charm and attractiveness of the tourism resources of Fude Bay cannot be fully exploited. Therefore, this study extends the service design to the heritage interpretation dimension by introducing the concept of heritage interpretation. Using the design concept of combining heritage interpretation and service and the two-line parallel design process as a starting point, the form of heritage interpretation is used as a visual carrier for service design, focusing on user-centred design and providing quality services and experiences for tourists.

3.2. Research and Analysis Phase

This phase will be divided into two levels: heritage interpretation and service design. In the heritage interpretation stage, the field survey found that a series of local cultural heritage resources have been protected and restored for the cultural tourism transformation of Fude Bay, including Fude Bay Old Street, Zhu Cheng's former residence, Huang Chuanhui's study house, for Tang Gong's meat swallows, Nanyang 312 Ping Cave, and the old alum road, which laid the foundation for a good heritage interpretation experience in Fude Bay. In addition, when compared with the existing heritage interpretation facilities in Fude Bay, it was found that only some of the heritage sites in Fude Bay currently have a small number of guides, interpretation boards and brochures, and there are problems with the varying specifications of the interpretation boards, the lack of updated interpretation content and the lack of maintenance of interpretation signs. Therefore, the power of heritage interpretation can be used to enhance the experience of cultural tourism services.

The service design dimension served as the key research component of the research and analysis phase. Firstly, this research explores pain points in services to uncover the right service gaps, and secondly integrates existing findings to

reveal design opportunity points through interpretation. Fude Bay is a tourist destination and its tourism and interpretation services involve three main types of stakeholders: local government, heritage management and visitors. Due to the wide range of audiences in Fude Bay and the different values of visitors of different ages and occupations. It is too complex of the analysis of this important role of visitors, thus their user needs are often not fully met. The user research phase is therefore particularly important. Through a user-centred service design concept combined with interpretive audience analysis, a user role model of the typical visitor to Fude Bay is created by exploring the basic characteristics, lifestyles and behaviours of the visitor, so that the visitor is integrated into the whole design process and a quality interpretive service experience can be designed. The study classifies typical visitors to Fude Bay into three types of user roles: efficient, in-depth and fun, and combines the analysis of the user journey map to sort out the behaviour and activities of visitors before, during and after the entire tour process, and by combining and summarising similar interpretive needs, the study concludes that visitors' needs for the tour and interpretive experience of Fude Bay are: (1) to know basic information and information about Fude Bay in advance, so that visitors can have a psychological expectation of (2) to experience the historical information and humanistic connotations of the cultural heritage of Fude Bay through the tour; (3) to participate in local experiences and learn about the local customs and culture of Fude Bay; (4) to learn about the science of alum mines and alum at Fude Bay; (5) to enhance interest and understanding through multi-sensory heritage interpretation experiences.

Based on the research at the service design level, and in accordance with the previous ideas of heritage interpretation, the research found that the opportunity points of Fude Bay heritage interpretation services mainly come from the gap in the interaction experience between the needs of tourists and medium and content of the current heritage interpretation. Therefore, the following five major heritage interpretation experiences are planned as its interpretation opportunity points, including; (1) scenic introduction and evaluation, which allows tourists to check all the attractions of Fude Bay at any time; (2) Guided walking tours of the area, which provide visitors with destination navigation and interpretation services through positioning technology; (3) Personalised itineraries, which provide visitors with a variety of combinations of attractions according to their time and needs; (4) Gamified tour interaction, which provides visitors with a fun tour experience through the inclusion of interactive games; (5) Customised postcards, which help visitors to create beautiful postcards of their visit to create a joint tourism and heritage interpretation service for Fude Bay.

3.3. Design and Planning Phase

As the core part of the cultural tourism service design model, the design planning stage requires further reflection and planning on both heritage interpretation and service design, following the previous stage of research and analysis of heritage interpretation at Fude Bay. This stage is based on the proposed value proposition and service brief, integrating the explored interpretation opportunities into the actual service environment, brainstorming design concepts, and further deepening the concept to improve the design details. Researchers demonstrate the implicit interpretation service through the explicit layout, media and content. In the case of

the heritage of Fude Bay, the interpretation contact points has been designed and the prototype of the service has been visualized to the service prototypes. In this stage, it should be emphasized that the design of the tangible heritage interpretation media and content, because of providing a better cultural tourism experience for visitors.

The touchpoint is the core in the Fude Bay Heritage Interpretation Service. After integrating the basic functions of the existing tourism app in the scheme design, this study improves the detailed design of the scenic area introduction and evaluation, scenic walking guide, personalized route customization, gamified tour interaction and special postcard customization by optimizing the touch point experience of heritage interpretation, so as to realise the construction and development of the heritage interpretation service of Fude Bay. Therefore, the development of a heritage interpretation service for Fude Bay has enabled visitors to gain a more systematic and comprehensive understanding and experience of the cultural heritage and local customs of Fude Bay.

(1) Introduction and evaluation of scenic spots. The web platform is a form of media for heritage interpretation, mainly manifesting itself as a combination of audio, visual, graphic and textual integrated functions, rich in information and easily accessible. Fude Bay's web platform is obviously lagging behind, and its information is basically blank on the internet which is a central pain point of visitors who lack of information about the village and its attractions. Therefore, the Scenic Area Introduction and Evaluation module will be integrated into the Fude Bay Tourism App, so that visitors can check the introduction of all attractions at any time and quickly know which attractions are most worth visiting through video commentary. In addition, the introduction and evaluation module offers a visitor message wall where users can not only upload videos of popular attractions, but also leave a message and take a selfie of a particular attraction. For the background of photos, the sights can be selected, which enable visitors to take preferable visitor photos. The photos can then be uploaded to the message wall through the APP, which, on the one hand, enhances the traveling experience in Fude Bay, on the other hand, collects visitor photos of various activities in Fude Bay as promotional material for Fude Bay tourism. Therefore, visitors can check the level of visitor preference for each attraction at any time and select the most popular attraction, which makes it easy for visitors to visit popular attraction and leave comments, as well as provide a basis for visitors to choose their own tour route.

(2) Guided walking tours. Walking is also a convenient and reasonable way to experience the Bay's heritage and local customs. However, due to unclear directions and inaccurate GPS positioning after entering the village, it is difficult for visitors to find their way around Fude Bay, additionally, they often get lost in the charming alleys and miss some of the heritage sites, which affects the tourist experience and evaluation of the heritage of Fude Bay. Therefore, as part of the measures to optimise the heritage interpretation experience, the scenic walking guide system was redesigned (Figure 6) to provide visitors with a clear map of heritage distribution, dining and shopping spots, and to give image AR assistance and voice instant navigation services to facilitate visitors to experience the heritage and culture of Fude Bay. The service uses iBeacon positioning technology to avoid the problem of inaccurate GPS and can accurately locate visitors within a 3m range, successfully guiding them to the vicinity of the heritage landscape. In addition, most of the visitors to

the site are travelling in groups, so in order to allow children and elderly visitors who are not comfortable with smartphones to have a better experience, the accompanied guiding app has been designed and can be rented at the entrance to the site.

(3) Customised itineraries. Before they travel, many visitors do not know about Fude Bay and the route is not clear enough when they arrive, so they used to visit a few attractions. The Fude Bay Tourism Service has developed a 'personalised tour itinerary' module that provides an overview of the attractions and traveling notes, allowing visitors to learn more about each attraction and intelligently plan the most suitable route based on the attractions they have chosen. The Fude Bay tour service can also provide personalised themed tours, including the Humanities Experience Tour, the Alum Mine Experience Tour and the Leisure Tour. These three-theme itineraries offer visitors detailed route and time information to choose based on their touring needs and touring times.

(4) Gamification of the tour experience. In order to allow the cultural heritage and tourism experience at Fude Bay more to appeal to a younger generation, several interactive games have been designed into the tour route. Visitors can hold a mobile phone device and experience the fun of touring between the mobile phone and the virtual reality. Visitors need to complete the game tasks by experience an interactive combination of real-life heritage and virtual game play. This game are controlled in a ladder of difficulty and combine with engaging story scenes and a beautiful game interface to provide young visitors an interesting touring experience which deepens their understanding of the heritage of Fude Bay. After completing the game, visitors can earn wallpapers, postcards, medals or points, which can be redeemed for special Fude Bay souvenirs or used as discount vouchers. The game tasks designed with development input include Old Street Stories, Book Hunt, Alum Collection and Alum Refining.

(5) Personalized Postcard. Tourism souvenirs not only are delicate and portable handicraft gifts with regional and ethnic characteristics purchased by tourists, but also represent the local cultural characteristics. At present, Fude Bay tourism souvenirs are similar, especially postcards, which lack their own cultural characteristics and have an obvious tendency of homogenisation and low-end. Therefore, a special postcard customisation module is built into the Fude Bay Tourism App to allow visitors customise photos taken in various tourist scenes in Fude Bay into beautiful postcards. After choosing a postcard template, inserting a contact person, leaving a message with a QR code and writing a blessing, visitors can customise their postcards online with the characteristics of Fude Bay. At the same time, visitors can choose to print and mail a physical postcard at the Fude Bay themed post office. Upon receipt of the postcard, the recipient can scan the QR code on the postcard through their mobile phone and receive a video of heritage promotion and blessings from Fude Bay while listening to the sender's voice or video wishes.

3.4. Calibration and Evaluation Phase

Following the design phase, the design will be calibrated and assessed at two levels: service design and heritage interpretation. The focus of the two levels of validation and assessment will be different and sequential: The implementation of the heritage interpretation level will come first, followed by validation and user assessment. The

calibration and evaluation phase put the spotlight on the feasibility of the design of the heritage interpretation experience, comprising the planning and interpretation of the tour route, the design of the heritage interpretation, and the interpretation facilities. The implementation will be given to a qualified company once the implementation plan has been approved. The design team supervises the crucial design details unless all of the components of the heritage interpretation system has been in place. The design will also be assessed in terms of the satisfaction of the visitor experience at the service design level to ensure that the overall effect of the interpretation is as anticipated. The design team arranges a workshop with specialists to reassess the issues with heritage interpretation and make improvements in light of visitor comments.

4. A Summary of The Key Elements of Cultural Tourism Service Design with Heritage Interpretation at Its Core

4.1. Understanding Users

The design of tourism services with heritage interpretation at their core needs to prioritize the service users and take their needs as the main design direction. By working together and innovating to ensure that the user-centered design concept is implemented into the design solution, this will increase the service users' satisfaction with their travel experiences.

4.2. Controlling key touch points

A comprehensive heritage interpretation is a sizable and intricate system made up of various interpretative components, such as the structure, shape, and content of the interpretation. Designers must narrow down the main touch points, that are pertinent to visitors, from a complex heritage interpretation service. The important touch points must be carefully planned and managed because they serve as the highlight of the entire cultural interpreting experience. The primary touchpoints in the interpretation service for heritage must be "interactive" and "situational," with an emphasis on the visitor's emotional response and experience.

4.3. Creating an immersive atmosphere

The goal of heritage interpretation-focused cultural tourist services is to optimize the visitor's interpretative experience while they are there. Unquestionably, one of the best visitor experiences is the sensation of being completely absorbed out of interest in the object itself. According to the findings of this study, offering tourists an immersive experience as part of the design of historical interpretation tourism services can significantly boost their appreciation of and satisfaction with cultural tourism services. Designing an immersive environment depends on the development of a heritage environment and the design of interactive elements within heritage interpretation activities.

4.4. Enhancing sensory stimulation

In order to excite tourists' interest and improve their experience, heritage interpretation services can use the theory of multi-sensory design to build and provide multi-sensory stimulation. This improves the quality of the cultural tourism service. In terms of design, we should prioritize regulating the fluidity and usability of the heritage interpretation service system rather than ignoring the fundamental concepts and

user needs of heritage interpretation to increase sensory stimulation.

4.5. Expanding value-added services

In order to deepen the user needs, heritage interpretation services should satisfy visitors' basic sensory, interactive, and emotional needs while also expanding value-added services from the perspective of social and self-fulfillment needs. This will differentiate the service's content for each visitor and improve the level of service as a whole. Visitors can experience the social value and significance of heritage interpretation activities, increase their sense of participation, and receive personalized interpretation material and services through the creation and development of value-added services.

5. Conclusion

This study discussed the problem of cultural tourist services from the perspective of heritage interpretation and used it to jointly create a design model for Ouyue cultural tourism services. It also cross-fertilized the disciplinary knowledge of heritage interpretation and service design. This is both an exploratory effort and a shift in the study's perspective. This model's strength comes in its comprehensive and methodical approach to identifying the ideal match between heritage interpretation and visitor experience through the complementarity between tangible heritage and intangible interpretation services. The outcomes of this study and its application have improved Fude Bay's historical interpretive efforts and raised visitor satisfaction levels. On the other hand, the research has also examined the viability and accuracy of the design model, offering fresh suggestions and backing for the creation of future services for cultural tourism.

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