



Research article

An initial exploration of historical district service experiences and humanistic innovation and development: Taking Zhongshan Road in Quanzhou, Fujian Province as an example

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Abstract: Fujian Province's Quanzhou stands out primarily due to its profound cultural heritage. The city has implemented a suite of measures, including developing diverse business models and strengthening brand marketing, to vigorously advance the preservation and dissemination of its World Heritage culture. These efforts have injected new vitality into the heritage in the contemporary context, propelling the integrated development of culture and tourism. Research findings revealed that introducing the “humanistic innovation” concept carries practical significance and tangible benefits for the revitalization of historic districts. Integrating humanistic innovation into current cultural tourism service experiences is crucial, with key innovations focusing on three dimensions: Utilizing digital platforms, emphasizing interpersonal network construction, and vigorously advancing cultural tourism development; all aimed at realizing sustainable core value propositions. This approach facilitates the continuous enhancement and growth of the local economy. These findings offer practical value to practitioners, managers, and stakeholders engaged in tourism operations, service innovation, and experiential innovation within Quanzhou's historic districts.

Keywords: experience innovation; cultural innovation; cultural tourism design; historic districts

1. Introduction

Cultural heritage has consistently functioned as a significant driver of tourism, drawing large numbers of travelers worldwide each year [1]. Quanzhou, in Fujian Province and historically known as “Citong City”, is renowned for its profound cultural and historical depth. The city has earned numerous honorary titles, such as “The Largest Port of the East in Ancient Times”, “Starting Point of the Maritime Silk Road”, and “East Asian Cultural Capital”. These accolades collectively highlight Quanzhou’s distinctive position in history and its diverse cultural landscape, reinforcing its reputation as an attractive global tourism hub. Following this recognition, the Chinese government launched an array of policies and promotional campaigns to enhance the visibility and protection of the site. Moreover, regularly scheduled cultural festivals and interactive, hands-on experiences enable visitors to immerse themselves in the living heritage of Quanzhou, deepening their appreciation for its unique humanistic value. Taking 2025 tourism data as an example, Quanzhou’s ancient city welcomed 1.38 million visitors, while its 22 World Heritage sites received 1.3145 million visitors. Over 15 locations across the city each welcomed more than 300,000 visitors. Among these, Licheng District hosted the inaugural Fujian Beautiful Life Carnival and Zhongshan South Road Grand Opening event, where the “Zhongshan Road National Trend District” emerged as a trendsetter for new consumption patterns [2].

The Quanzhou municipal government has implemented a “micro-renovation” upgrade of the Zhongshan Road Historic and Cultural District. While preserving the arcade-style architecture, it has introduced new businesses such as creative bookstores and intangible cultural heritage workshops. This initiative yielded impressive results during the 2025 National Day holiday, attracting 823,500 visitors. In this study, we intend to outline the typical processes through which consumers have engaged in Quanzhou’s cultural activities over recent years while examining the core development pathways of cultural initiatives in Quanzhou’s ancient urban area, focusing on humanistic innovation. Our goal is to offer insights and references that can inform the promotional strategies adopted by government cultural authorities.

Our core research questions focus on two aspects:

- (1) The specific manifestations and implementation pathways of humanistic innovation in Quanzhou’s Zhongshan Road Historic District;
- (2) The new models, business formats, and values formed during the district’s humanistic innovation process.

Through this study, we aim to continuously advance the integrated development of Quanzhou’s cultural and tourism sectors, foster collaborative co-creation among tourists, district merchants, and government departments, and enhance the comprehensive benefits and social value of cultural tourism.

1.1. Literature review

1.1.1. Development and innovation of cultural heritage tourism in Quanzhou

Quanzhou is endowed with a profound cultural history, encompassing a spectrum of religious traditions, Maritime Silk Road legacies, and Min Nan cultural components, all of which call for in-depth exploration. The city has leveraged multiple advantages: Its diverse cultural tourism resources, distinctive scenic attractions, and unique culinary offerings, combined with the UNESCO World

Heritage listing of “Quanzhou: Emporium of the World in Song-Yuan China”. These factors have collectively elevated Quanzhou’s cultural allure and competitive strength to an increasingly prominent level [3]. Quanzhou has achieved notable progress in several critical areas, including the consistent attraction of cultural and creative talent, the execution of urban micro-renewal initiatives, the pooling of resources among tourism-related agencies, and the development of cultural and creative tourism brands. Collectively, these measures are propelling the high-quality growth of Quanzhou’s cultural tourism industry.

With the advancement of technology, the three key drivers shaping the landscape and models of cultural tourism services are: A focus on the internet, a value centered on information, and a goal centered on experience [4]. Driven by robust national policy support and the considerable market opportunities within the cultural tourism sector, Quanzhou’s municipal government has seized the favorable timing of its pursuit to become a recognized “World Heritage City”. By aligning local initiatives with national strategies and harnessing digital and new media tools, authorities have promoted the integration of culture with technology. The extension of the cultural industry chain, encompassing cultural tourism, creative merchandise, regional cuisine, and cultural intellectual property, has been driven by a service-centered orientation. Ongoing trial and innovation in these domains further reinforce the enduring vitality and sustainable growth of Quanzhou’s World Heritage assets.

1.1.2. The symbiotic relationship of heritage preservation and tourism

To heritage sites, culture acts as the fundamental cornerstone underpinning their survival and sustainable development [5]. Moreover, the conservation of cultural heritage and the advancement of cultural initiatives need to be tightly integrated with cultural experiences [6]. When diverse stakeholders articulate shared value propositions, they can realize mutual benefits through service exchange and interactive collaboration. This strategy not only advances the delivery of cultural services and deepens cultural value but also facilitates effective resource integration and joint value co-creation. In turn, this process strengthens the cultural branding of historic districts and optimizes cultural service systems [7]. Furthermore, cultural institutions seek to tap into local creative cultural resources to boost their own value, thereby building a solid commercial foundation that better highlights their cultural uniqueness [8]. Scholars further stress the importance of adopting a multi-domain perspective on sustainable development, as this is critical to achieving a successful shift toward a value co-creation model [9].

In response to the trends of cultural economy and experience economy, with the tourist experience at the core, through “products”, “services”, “activities”, and “spaces”, we aim to fulfill consumers’ lifestyle aspirations, create a unique lifestyle aesthetic, and establish a lifestyle that resonates with consumers, thereby creating a lifestyle industry characterized by “deep experiences” and “high-quality aesthetics”, establishing a trend toward differentiation and uniqueness in operations. Quanzhou’s cultural tourism sector is experiencing rapid development and can be connected with related elements [10]. In the field of heritage tourism, destination image, perceived authenticity, visitor participation, and overall satisfaction are closely interlinked. Active involvement in local cultural practices has been shown to significantly enhance the quality of the visitor experience, with empirical studies indicating that the aspiration to engage in heritage-related activities is among the major drivers of heritage tourism demand. In addition, aspects such as the accessibility and completeness of tourism information, along

with the perceived value-for-money of the experience, constitute promising areas for further academic investigation [11].

1.1.3. Humanistic innovation in service innovation

Within the service sector, innovation is commonly understood as the creation of unique and diversified consumer experiences through varied service formats. This concept includes product-based and process-oriented forms of innovation [12]. Advances in information technology have significantly expanded the technical and economic feasibility of such innovations for enterprises. However, in the realm of cultural tourism, service innovation exhibits unique characteristics, as it is closely intertwined with local traditions and cultural expressions, such as the blessing ceremonies at Kaiyuan Temple or the Confucius-worship rituals and red egg presentations at Fuzhou Confucian Temple. As a result, cultural tourism service innovation places greater emphasis on enhancing consumer value through the introduction of novel service methods, thereby closely aligning with the concept of process innovation. Buonincontri et al. [13] further argue that destinations and service providers should actively collect and analyze experiential data. Such efforts enable them to identify opportunities for collaboration, better understand visitor expectations, and improve value co-creation mechanisms, thereby enriching the overall tourism experience.

Wu, Se-Hwa [14] introduced the “Humanistic Innovation H-EHA Model”, emphasizing that in a rapidly changing global environment, innovation continually transcends conventional limits. This framework adopts a human-centered and multi-dimensional perspective, encompassing four principal dimensions: Physical, psychological, cultural-historical, and spatial. Central to the model is the establishment of emotional resonance with consumers, viewing goods, and services as vehicles for delivering meaningful experiences. In today’s service-oriented economy, experience has become a defining component of value creation. For example, cultural and tourism agencies design offerings such as creative merchandise and World Heritage–themed activities to evoke emotional engagement and provide visitors with a sense of fulfillment and enjoyment.

The intrinsic attributes of urban spaces, such as their distinctiveness, aesthetic appeal, cultural meaning, and sense of place [15], serve as the foundation shaping how the public perceives and engages with the city. By diversifying and enhancing cultural activities, cities can integrate multiple experiential dimensions through innovative service processes. This evolutionary trajectory transcends the boundaries of traditional “service innovation”, advancing toward “service experience innovation”, and converging with the overarching goal of “humanistic innovation”.

2. Methodology

2.1. Research method

We employ a single-case exploratory research design to conduct an in-depth analysis of the causes and processes underlying the phenomenon through multi-source data. Through field participation observation of cultural activities along Quanzhou’s Zhongshan Road, we further dissect the developmental trajectory of the case study neighborhood while achieving triangulation of multi-source data. In complex contexts, we employ exploratory case methods to construct a preliminary theoretical framework, making the case study approach well-suited to its objectives and requirements [16,17].

Data collection methods include document analysis, archival records, in-depth interviews, and participant observation. Given the strong exploratory and rich characteristics of the selected case, it is particularly suitable for examining events and phenomena with complex backgrounds.

2.2. Research subjects

The rationale for choosing this research topic can be summarized as follows:

(1) Zhongshan Road Historic District in Quanzhou possesses a recorded history of more than one hundred years; (2) the area contains a rich concentration of tangible and intangible cultural heritage resources; (3) it is recognized as one of Fujian Province's most representative traditional commercial streets; and (4) during major holidays, daily visitor numbers exceed 100,000, among other influential factors.

Quanzhou's enduring history and distinctive cultural character set it apart from other tourist destinations. Its diverse collection of heritage sites, living traditions, and intangible cultural practices form a robust cultural foundation. Local specialties, ranging from traditional cuisine to historical landmarks and unique handicrafts, serve as carriers of this heritage, reflecting the city's deep-rooted historical significance and highlighting its potential for sustained cultural tourism development. Furthermore, we compile and examine the major events scheduled for the Zhongshan Road Historic District for 2024–2025 (see Table S1).

2.3. Data collection and analysis

2.3.1. Data collection

This study's data collection and analysis comprised three steps: First, through secondary data and literature review (involving at least 30 publications), 15 relevant database folders were organized. These covered aspects such as Quanzhou's cultural tourism development and innovations in recent years, cultural heritage preservation, and the process of cultural tourism experiences. Community comments from WeChat public accounts, official materials, and observation notes and experiences from Quanzhou's Zhongshan Road over the past year enabled the researchers to gain an in-depth understanding of humanistic experiences and promotional methods [17]. The 15 relevant datasets were archived based on the 21 Zhongshan Road experiential activities compiled in Table S1. Data sources were strictly limited to official channels, such as Quanzhou Culture and Tourism and the Voice of Maritime Silk Road Quanzhou Culture and Tourism, ensuring the accuracy of event timelines, locations, and content (Table 1).

Table 1. Data collection and analysis form.

Category	Keywords	Timeframe	Language	Source/Database	Representative Refs
Academic Literature: Heritage Tourism	“Cultural heritage tourism”, “Historic district revitalization”, “Authenticity”, “Community participation”	2003–2022	English	SSCI/SCI Core Journals: <i>Tourism Management</i> , <i>Journal of Heritage Tourism</i> , <i>Journal of Destination Marketing and Management</i>	<i>Cities</i> [3]; <i>Tourism Management</i> [11]; <i>Journal of Heritage Tourism</i> [18]
Academic Literature: Service Innovation	“Service experience innovation”, “Value co-creation”, “Smart tourism”, “Humanistic Innovation”	2002–2022	English/Chinese	Core Journals and Books: <i>Journal of Service Research</i> , <i>Industrial Marketing Management</i> , <i>Frontiers of Architectural Research</i>	<i>Journal of Service Research</i> [4]; <i>H-EHA Model Book</i> [14]; Industrial Marketing Management [19]
Empirical Data: Local Cultural Events	“Quanzhou Ancient City”, “Zhongshan Road”, “Intangible Cultural Heritage”, “Digital Cultural Creativity”, “Immersive Experience”	2023.01–2025.08	Chinese	Official Media and Government Reports: WeChat Official Accounts, Municipal Government Reports	see Table S1

2.3.2. Data analysis

During the data collection stage, relevant literature spanning 2024 to 2025 was collected and systematically collated. The focus was placed on two key types of materials: Promotional documents for the Quanzhou Municipal Government’s “World Heritage City” initiative and records of cultural events held along Zhongshan Road. This process facilitated a holistic grasp of the case context, covering three core dimensions: The scope of cultural activities, the integration of local industries, and the process of visitor experiences.

For the case analysis, we applied the H-EHA model of humanistic innovation, which comprises

four key components, Humanity, Ecosystem, Hub, and Asterism, and spans four analytical domains: Mental, cultural-historical, geographical, and physical. During the data analysis stage, we performed ongoing data collection alongside comparative analyses. For the field experience component, in-depth interviews were conducted with individuals associated with Zhongshan Road (Table 2). A total of 10 professionals connected to Zhongshan Road participated in interviews lasting 30 to 60 minutes each, spanning a period of one month. Finally, the guided itineraries of cultural experience activities held over the past year were meticulously examined for their themes and content, serving as the basis for further data analysis.

Table 2. Number and selection criteria for experts interviewed in the study.

Respondent background	Number	Selection criteria
Government Officials	2	Participated in the micro-renovation and cultural tourism development of Zhongshan Road Historic District
Tourism Expert	1	Extensive knowledge of Quanzhou's tourism industry and familiarity with its ecosystem
Travel Blogger	1	Consistently publishes videos about Quanzhou tourism with over 10,000 followers
In-Depth Experience Group	6	Visited Zhongshan Road for cultural experiences over three times and possesses relevant background

2.4. Case introduction

Quanzhou's Zhongshan Road Historical and Cultural District is endowed with abundant cultural assets and prominent landmarks. At the core of Quanzhou's ancient urban area (Licheng District), the district covers an area of roughly 6.41 square kilometers and boasts distinct architectural features. The arcaded storefronts along the street are representative of South Seas-style architecture, which combines traditional Quanzhou residential designs with structural elements shaped by historical maritime cultural interactions.

This architectural fusion has established the district as a striking example of commercial street design that seamlessly integrates Chinese and Western influences, cementing its status as one of China's rare, well-preserved continuous arcaded thoroughfares. As a living testament to Quanzhou's past commercial prosperity, the area has also exerted a substantial impact on the evolution of the local commodity economy.

For this study, Zhongshan Road, a nationally recognized historical and cultural district, was selected as the case site. Located at the center of the ancient city, the district is encircled by eight UNESCO World Heritage sites, numerous Min Nan and Maritime Silk Road cultural experience venues, and a multitude of traditional shops that preserve the collective memories of long-term residents. Together, these elements create a unique historical and cultural landscape that attracts substantial numbers of domestic and international visitors, offering them opportunities to engage with and appreciate Quanzhou's rich heritage (see Figure 1).



Figure 1. A scene from Zhongshan Road in Quanzhou.

3. Results and discussions

3.1. Research findings

3.1.1. Analysis of cultural innovation in historic districts

People-centered humanistic innovation can be seen in all areas. Therefore, the innovative aspects of daily life include four areas: Mindfulness, Culture and History, Geography, and Body. Furthermore, humanistic innovation in historic districts involves all four areas:

(1) In the field of mindfulness (Figure 2), due to the new generation’s enthusiasm for sharing new knowledge or new things in their social lives, the development of technology and the widespread use of smartphones have led to an increasing number of visitors sharing their experiences and insights from exploring historic districts. This has enhanced the experiential value and professional attributes of this field. The mini-program “One Phone Takes You on a Tour of Quanzhou” serves as a compelling example of how digital empowerment has elevated the tourism experience in Quanzhou to a new dimension. As noted in relevant sources, this mini-program utilizes advanced technologies, including big data and artificial intelligence, to deeply integrate all components of the city’s “catering, accommodation, transportation, shopping, and entertainment” resources, thereby innovatively building a one-stop smart tourism service system. This enables tourists to easily experience World Heritage culture, savor Min Nan cuisine, and feel the charm of intangible cultural heritage. Moreover, this makes it more convenient for government departments to understand the needs of users.



Figure 2. The process of humanistic innovation in the field of mindfulness.

(2) In the field of culture and history (Figure 3), cultural heritage serves as the bedrock of its development, and leveraging new media, such as social platforms and digital technologies, enables broader and deeper dissemination. World Heritage culture has been seamlessly integrated into daily life, with regular festivals and folk traditions acting as core channels for this fusion. In the realm of cultural communication, social platforms, including WeChat, Douyin, and Bilibili, continuously spread Quanzhou's cultural content to wider audiences. When it comes to cultural creativity, the World Heritage Exhibition Hall adjacent to the Zhongshan Road Historical District systematically presents the area's historical context and cultural value through themed exhibitions and other diverse formats. Moreover, the festival sector, as events become more numerous, also leverages social media to promote Quanzhou to younger audiences and encourage them to share their experiences. Under the trend where intangible cultural heritage becomes a focal point for tourism and experiences, Quanzhou, which had made extensive preparations in advance, luckily caught the wave of attention in early 2023. The eye-catching and easily replicable folk decoration of "Zan Hua Wei" quickly spread across the city and the country. In the subsequent days, under the continuous promotion of celebrity experiences, authoritative organization certifications, luxury brand endorsements, and collective social media buzz from influencers, it has become, in an objective sense, Quanzhou's most memorable calling card.



Figure 3. The process of humanistic innovation in the field of culture and history.

(3) In the geographic context (Figure 4), daily transportation has been enhanced with the introduction of new "Dangdang" buses that align with Quanzhou's World Heritage identity. For leisure tourism purposes, additional boutique hotels have been established near West Street and Zhongshan Road to cater to tourists' demands. When it comes to work and retail spaces, representative facilities like the West Street Tourist Center and Zhongshan Inn now offer novel service experiences. These initiatives aim to better showcase the city's development and promote cultural experiences through newly established cultural spaces and the unique characteristics of the city following its urban renewal. "In the alleys of Quanzhou's ancient city, the Quanzhou Bus sightseeing electric vehicle 'Xiao Bai' is no longer just a mode of transportation, but a moving cultural emblem of the city. From the initial 30 vehicles to the large fleet now crisscrossing the ancient city's streets and alleys, 'Xiao Bai' has witnessed the glory of Quanzhou's successful World Heritage designation and carries the first impressions of countless visitors to this city".



Figure 4. The process of humanistic innovation in the field of geography.

(4) The physical field (Figure 5) is primarily reflected in health-related aspects. For example, the “Maritime Silk Road Quanzhou Ancient City Hiking Event”, which has been held annually over the past two years, is a practical example of promoting physical and mental well-being, making City Walk a trend. “Following the South Asian arcades along Zhongshan Road southward leads to the southern district of Quanzhou’s ancient city. Here, one can experience the bustling street life of the modern era while witnessing the thriving trade of the ancient port of Citong. Marine civilization is also preserved in the architecture and alleys”. This reflects the profound cultural heritage of the historic district across the “four major domains”. From an experiential standpoint, one can gain a deep understanding of how the Zhongshan Road Historic District is guided by humanistic values; values that serve as a driving force behind lifestyle evolution and socio-technological advancement.



Figure 5. The process of humanistic innovation in the physical field.

In summary, cultural experience activities in Quanzhou bear the hallmarks of humanistic innovation. The primary difference lies in the gradually increasing proportion of tourists using social media, which is increasingly integrating with and connecting to the Quanzhou cultural experience process. Take the “Quanzhou Old City District City Walk” activity as an example. Participants can register and sign up through a WeChat mini-program, and during the walking tour, a guide will explain Quanzhou’s cultural history and architectural development to achieve the promotional objective. Thanks to the convenience brought by the updated roads after urban renewal, the activity also promotes mental and physical well-being, aligning with the event’s new concept: “Reading Quanzhou’s humanities at heritage sites and observing the vibrant daily life in the ancient city”.

Quanzhou's ancient urban area, blessed with profound historical and cultural legacies, has launched a suite of initiatives in recent years that align with emerging industrial priorities and core tasks under new circumstances. These measures aim to fully tap into the potential of tourism consumption, propelling the tourism sector toward high-quality development and transformation. In this process, service experience innovation serves as a critical strategy: It not only expands new market horizons for services but also provides fresh World Heritage-themed experiences to tourists and local residents. The application of cultural innovation has not only upgraded the quality of current services but also redefined the service experience, addressing the growingly diverse demands of cultural tourism in a unique and appealing manner. By continuously deepening the integration of service experience innovation and cultural innovation, Quanzhou's tourism industry has secured a differentiated competitive edge in the highly competitive market landscape.

Benefiting from the abundant tangible and intangible cultural heritage embodied by the Zhongshan Road Historic District, a space that vividly presents the authentic daily life and local cultural traditions of Quanzhou residents (see Figure 6), cultural experiences in this area are structured around a narrative-driven thematic framework [20]. Heritage tourism enables visitors to engage directly in immersive experiences, including cultural landscapes that merge past and present, artistic performances, authentic local cuisine, artisanal crafts, and cultural events. For this reason, it is widely recognized as a crucial pathway to drive community economic development [21].



Figure 6. Innovative cultural experiences.

3.1.2. A cultural and tourism experience in a historic district that blends humanistic innovation

Some scholars [22] proposed insights for achieving sustainability and development in historic districts through transformations across three dimensions: Environmental, economic, and social. Quanzhou's Zhongshan Road project, through micro-renovation initiatives (enhancing architectural aesthetics, cultural displays, street environments, and municipal facilities), further integrated urban development. Environmentally, it improved the living environment; economically, it sustained tourist attraction and consumption through cultural activities; and socially, it fostered consensus and continuously amplified its influence.

As reported by Licheng Culture and Tourism Voice [23]: “Not only are there edible intangible cultural heritage items, but also numerous intangible cultural heritage crafts for play and daily use, all gathered on Zhongshan Road to attract visitors from all directions. Lacquered fans, floral hairpin twists, Dehua porcelain, metal wire weaving, decorative rice cakes, brush-making techniques, Yiyegé bamboo

and rattan crafts... The dazzling array of intangible cultural heritage exhibits allows visitors to glimpse Quanzhou through this small window, experiencing the charm of its intangible cultural heritage”.

Table 3. Case analysis of the H-EHA model for humanities innovation.

H-EHA model category	Detailed analysis
Humanity	All product and service designs are rooted in a human-centered philosophy, with an emphasis on fostering innovation across all dimensions. Among the four categories of humanistic innovation, experiential innovation has been effectively put into practice. Authorities such as the Quanzhou Municipal Bureau of Culture and Tourism offer products and services that enable customers to experience a sense of enjoyment throughout their consumption journey.
Ecosystem	When tourists visit Zhongshan Road for sightseeing, their experiences are shaped by prior knowledge. Within the ecosystem, the core proposition (shared-proposition) is anchored in the World Heritage tourism project “Song-Yuan China, Maritime Silk Road Quanzhou”. The historical district of Zhongshan Road, shaped by the interplay of natural geography, cultural context, and institutional conditions, possesses abundant shared resources, thus embodying the element of scenes. Symbiosis groups include scene condition shapers (Quanzhou municipal government departments, cultural tourism groups) or influential actors (social media, surrounding businesses). Activities manifest through monthly cultural events that highlight the core proposition and create user value.
Hub	The hub serves as the core member and function connecting other members and activities. The hub, anchored by the Quanzhou Municipal Government, continuously builds the ecosystem as: Ecosystem Governance, which maintains ongoing oversight of the ecosystem and supports the diverse development of Zhongshan Road businesses; Market Architect: Integrates cultural and creative elements to establish permanent markets in the historic district and leverages digital platforms for marketing and promotion; Community Connector: Consolidates resources to attract diverse businesses to operate on Zhongshan Road and draws tourists through monthly events. Moreover, a momentum accumulator (serving as the intelligence and information repository for all ecosystem members, facilitating data exchange via digital platforms where big data informs subsequent initiatives), and an institutional creator (acting as a catalyst to drive orderly project implementation and foster innovation through leadership) are used. Thus, this assumes the pivotal role of a central hub bearing significant responsibility for overall coordination and resource allocation.
Asterism	The diverse businesses within the Zhongshan Road Historic District form the cornerstone of its ecosystem. Technological advancements have enabled new forms of collaborative partnerships. Leveraging agility (rapid resource integration), entrepreneurial drive (a spirit of relentless pursuit and bold ambition), and communication synergy (swift dissemination across multiple media channels), these businesses continuously adapt to local needs, innovate service experiences, and achieve sustainable value.

The souvenir section also offers many highlights: “Stalls lining both sides of Zhongshan Road feature numerous cultural and creative products, scattered throughout the area, frequently drawing out-of-town visitors to stop and linger. These cultural creations include water spouts, women of Tengpu,

women of Hui'an, wind lions, and family name seals. With their distinct Quanzhou elements and reasonable prices, they have become popular souvenirs that visitors happily purchase to take home after their visit”.

Based on collected interview transcripts and observation notes, we mapped behaviors to the four dimensions of the H-EHA model through coding. Humanistic innovation aligns with the broader trajectory of societal and technological development, embodying a people-centered ethos to shape a better future and achieve its transformative journey. Though manifested across domains, the H-EHA model of humanistic innovation serves as a vital driving force. Its fundamental operational patterns, Humanity, Ecosystem, Hub, and Asterism, are illustrated in Table 3 for the humanistic innovation segment within the Zhongshan Road Historic District. This demonstrates how Zhongshan Road's recent innovation processes and experiential activities can propel the transformation of related traditional industries and support the development of emerging organizations.

3.2. Research discussion

The cultural heritage sites along Quanzhou's Zhongshan Road often represent a confluence of diverse cultural influences, which do not always form a seamless or organically integrated whole. Quanzhou's historic urban area encompasses eight UNESCO World Heritage sites, reflecting religious and philosophical traditions, including Buddhism, Confucianism, and local folk beliefs. Visitors gain direct experience of the richness and complexity inherent in these heritage resources [24]. This underscores that cultural heritage tourism not only safeguards the value of culture and history but also fuels economic growth, solidifying its status as a pivotal sector within the broader cultural industry [25]. Utilizing intangible cultural resources through media or physical platforms to disseminate and perpetuate their value, and integrating cultural elements into commercial thinking, promotes cultural sustainability and achieves humanistic innovation [18].

Culture serves as the fundamental foundation for the preservation and sustainable development of heritage sites [5]. Furthermore, cultural heritage preservation and cultural development must be closely integrated with cultural experiences [6]. The practice of Zhongshan Road in Quanzhou validates this perspective: By establishing the shared value proposition of “Song-Yuan China. Maritime Silk Road Quanzhou”, actors, including government departments, cultural tourism groups, social media platforms, and surrounding businesses, achieve mutual benefit through service exchange and interaction. From an experience economy perspective, Quanzhou Zhongshan Road's cultural tourism development aligns with the operational trend of “centering on visitor experiences, fulfilling consumer lifestyles through products, services, activities, and spaces, and cultivating distinctive tastes and identity-based lifestyles” [10]. In terms of service innovation, Zhongshan Road's practices adhere to the core tenets of innovation theory while achieving breakthroughs through cultural tourism characteristics. Unlike conventional product innovation, its cultural tourism service innovations exhibit strong regional and cultural specificity, such as the flower-pinning experience and Nanyin appreciation services, which are fundamentally process innovations that convey cultural consumption value through novel service delivery methods [13].

Therefore, we construct a conceptual model of humanistic innovation driven by digital technology (Figure 7), encompassing the elements of “Digital”, “Organizational”, and “Cultural”. This conceptual model resonates with the growing emphasis on integrated development within humanistic innovation processes. Scholars exploring service product innovation have identified Digital Service

Innovations, which leverage digital technologies to create value for manufacturers and customers. This concept reflects how digital technologies are embedded within manufacturers' core operations and service offerings, delivering significant value [19,26]. Conversely, government agencies reshape urban identities, boost vitality, and attract creative professionals and tourists through landmark buildings and cultural events [27]. This exemplifies how historic districts commonly employ such elements to foster creativity; a diversified strategy particularly prevalent in cultural tourism.

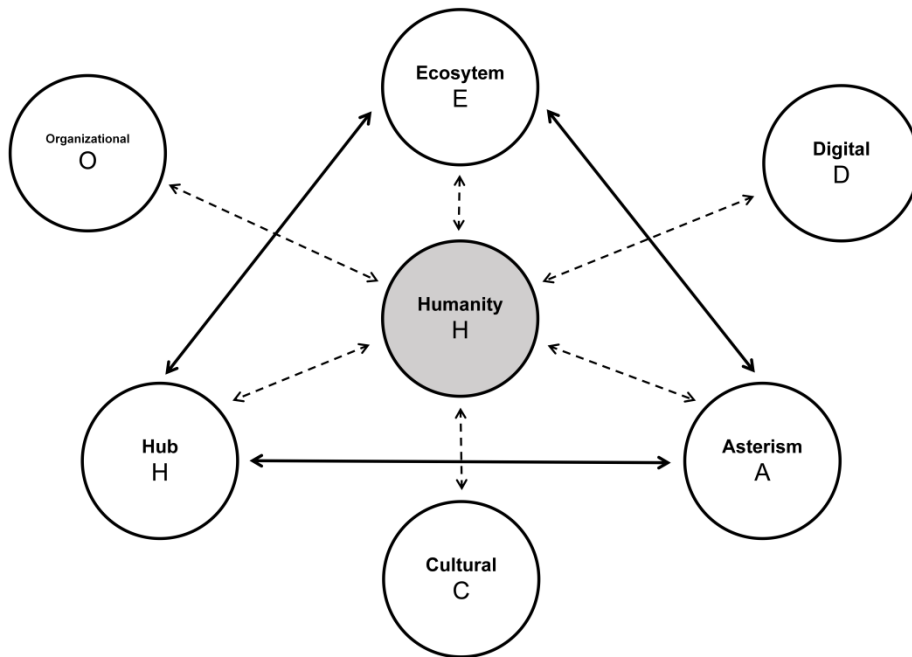


Figure 7. Conceptual Model of Digital-Driven Humanities Innovation.

Last, the distinctive attributes of urban spaces, including their aesthetic value, cultural significance, and sense of place, lay the groundwork for public perception and interaction. Within the Zhongshan Road Historic District, monthly cultural events enable residents and visitors to engage in multifaceted environmental and behavioral interactions by means of direct experience and appreciation. This engagement, in turn, enables the continuous formation of new understandings regarding urban space. This process not only embodies service-experience-oriented innovation but also cultivates public recognition of such innovation. In doing so, it advances the core objective of humanistic innovation [15].

4. Conclusions and recommendations

4.1. Conclusions

In this study, we provide a holistic analysis of service experiences within the Zhongshan Road Historic District. Against the backdrop of contemporary heritage tourism, we investigate and forecast the impacts of service experiences and humanistic innovation on the development of historic urban areas. The service experience innovation process in Quanzhou's cultural tourism sector exhibits

adaptability to social and technological progress while consistently centering on the perspectives of experience participants. This approach aligns with the four domains of the H-EHA humanistic innovation model, with findings supported by relevant case studies, and promotes experiential innovation among the four types of humanistic innovation categorized under the model's "Humanity" dimension. Furthermore, we integrate the four components outlined in the model's "Ecosystem" dimension, namely core principles, contextual scenarios, collaborative networks, and activity-based interactions. The "Hub" component centers on the Quanzhou Municipal Government, which bears significant responsibility for continuously constructing the ecosystem and serves as the coordinating and allocating central hub. Finally, the "Asterism" continuously enhances actionability, practical creativity, and dissemination cohesion to achieve sustainable development value.

Second, we construct a trinity-based conceptual model of humanistic innovation encompassing "digital-organizational-cultural" dimensions, validating the pivotal roles of digital technology, organizational synergy, and cultural heritage in the integration of cultural tourism within historic districts. Digital technology provides technical support for cultural dissemination and experiential optimization [4]; government-led multi-stakeholder organizational collaboration enables efficient resource integration and co-creation of value [28]; and profound World Heritage and Minnan cultural legacies confer unique competitive differentiation for innovation [24]. These three elements demonstrate the practical applicability and future scalability of the "humanistic innovation" concept within historic districts, achieving the unity of cultural, economic, and social value.

Through the lens of humanistic innovation, we analyze the experiential processes in Quanzhou's Zhongshan Road Historic District while examining management approaches and new technology applications within technological development. The findings not only propose feasible innovative strategies for service experience practices but also theoretically supplement and enrich knowledge gaps in Quanzhou's service experience innovation and historic district tourism research. In this study, we present the cultural activities and humanistic innovation processes undertaken on Zhongshan Road over the past year through relevant case studies, demonstrating that the evolution of cultural tourism has become clearer and more diverse in terms of cultural content, motivation, and experience [29]. This aligns with the 2023 strategy of Licheng District's Party Committee and Government to position Zhongshan Road as a Maritime Silk Road cultural tourism district embodying "Minnan flavor", "Chinese chic", and "international flair". Driven by refined management, business model upgrades, and event-driven traffic, this approach has unleashed greater cultural tourism potential with positive outcomes. Such initiatives foster innovation and diversified development within the cultural industry. Moving forward, digital technologies can actively enhance the appeal of cultural destinations by leveraging opportunities for information sharing and co-creation of value [30].

4.2. Methodological limitations

We employ a single case study approach and exploratory research design. While we gain deep insights through diverse data collection, the methodological choice limits the applicability of its conclusions. Compared to other historic districts with differing resource locations or developmental stages, the findings are difficult to directly transfer and require validation and adaptation across contexts. In future research, researchers could integrate the strengths of quantitative and qualitative approaches. Moreover, methods such as surveys and structural equation modeling could be employed to quantitatively analyze the causal relationships between dimensions of humanistic innovation and

outcomes like visitor satisfaction, economic benefits, and cultural heritage preservation. This would enhance the scientific rigor and timeliness of research conclusions.

Regarding research subjects, a multiple case study approach could be adopted. Historical districts of different types and geographic locations could be selected as subjects to compare and analyze the differences in their humanistic innovation pathways, influencing factors, and outcomes, thereby distilling a universally applicable theoretical framework and practical model. Therefore, in future research, researchers should not only expand empirical investigations into service experience innovation but also focus on other components within humanistic innovation theory, such as cultural heritage preservation, community participation, and spatial reproduction. Furthermore, incorporating cross-regional or multi-case comparative studies could enhance the comprehensiveness and applicability of theoretical frameworks.

Use of AI tools declaration

The authors declare they have not used Artificial Intelligence (AI) tools in the creation of this article.

Conflict of interest

Chun-Liang Chen is an Editor of the special issue for URS and was not involved in the editorial review or the decision to publish this article. All authors declare that there are no competing interests.

Author contributions

Conceptualization, Y.-H.L. and C.-L.C.; data curation, Y.-H.L. and X.-Y.G.; methodology, Y.-F.H. and C.-L.C.; investigation, Y.-H.L., X.-Y.G and H.-P.X; formal analysis, Y.-H.L.; writing—original draft, Y.-H.L. and C.-L.C.; writing—review and editing, Y.-H.L. and C.-L.C.; supervision, C.-L.C.

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