

Research on the Practical Path of Empowering the Governance of Culture and Tourism by Urban Cultural Soft Infrastructure

--Taking the city guide system of Jingdezhen as an example

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Abstract

Using 144 ceramic-themed wayfinding systems in Jingdezhen as a case study, this research combines soft infrastructure theory with cultural tourism governance practices to explore specific pathways for empowering cultural tourism governance through the cultural core of Jingdezhen's ceramic heritage. The study reveals that the city's wayfinding system achieves coordinated improvements in four key areas—cultural preservation, service optimization, industrial synergy, and collaborative governance—through core measures including cultural symbol translation, innovative craft integration, and multi-stakeholder collaboration. Its innovative value lies in integrating Jingdezhen's ceramic cultural symbols into urban signage systems, breaking the spatial limitations of traditional museums and bringing ceramic artworks out of exhibition halls to merge with urban wayfinding. This transformation elevates wayfinding facilities from single-function markers to "tangible urban cultural textures" that combine functionality with artistic value. The approach not only revitalizes the contemporary vitality of intangible cultural heritage techniques but also provides theoretical support and practical models for refined governance of cultural tourism in distinctive cultural cities.

Keywords

Wayfinding system; Jingdezhen ceramic culture; cultural soft infrastructure; cultural tourism governance.

1. Introduction

Under the dual impetus of policy and theoretical frameworks, the convergence of culture and tourism has emerged as a pivotal trend. The "14th Five-Year Plan for Cultural Industry Development" advocates for the deep integration of cultural facilities with tourism, while the Four-Year Action Plan (2022-2025) for the Jingdezhen National Ceramic Cultural Heritage and Innovation Pilot Zone prioritizes the development of a cultural signage system, emphasizing its role in cultural dissemination and service efficiency.

Theoretically, wayfinding systems play a vital role in shaping urban identity and enhancing readability, providing a theoretical foundation for Jingdezhen's wayfinding practices. However, in practice, how to achieve coordinated development of "culture, service, and industry" through wayfinding systems remains an area requiring deeper exploration. Current academic research exhibits multiple gaps: existing studies predominantly focus on visual design while neglecting the profound connection between ceramic cultural elements and governance; cultural tourism governance research tends to emphasize macro-level policies without analyzing micro-level facility mechanisms; ceramic culture studies concentrate on intangible cultural heritage (ICH) industries but fail to highlight their governance value.

By addressing gaps in interdisciplinary research, this study seeks to enrich the theoretical framework for governing historic and cultural cities. Practically, it employs literature review, field research, case comparison, and data analysis to examine examples like Xi'an's Tang-style signage and Kyoto's pedestrian navigation systems. By integrating public data from cultural tourism authorities and platform dissemination metrics, the study develops localized signage systems with distinctive features. It further explores how ceramic culture's core values can be effectively harnessed through these systems to enhance cultural tourism governance.

2. Definition of Core Concepts and Theoretical Connections

2.1. Urban Cultural Soft Infrastructure and Cultural Tourism Governance

"Soft infrastructure" refers to non-material infrastructure distinct from traditional "hard infrastructure" like transportation and energy systems. Its defining features include service orientation, governance objectives, and reliance on micro-level carriers. Unlike physical construction, it enhances public services and governance efficiency through institutional design, service optimization, and technological empowerment. Urban cultural soft infrastructure, a cultural subtype of soft infrastructure, differs from material "hard infrastructure" like transportation and energy. Its core characteristics are immateriality, service orientation, and governance empowerment, with local cultural characteristics as its nucleus and micro public facilities as carriers. It combines three core functions: cultural symbol transmission, public service adaptation, and cultural-tourism governance empowerment. In Jingdezhen's ceramic cultural tourism context, the concrete embodiment of cultural soft infrastructure is the ceramic-themed urban signage system. Its value lies not in the material form of ceramic materials themselves, but in the synergistic effects of cultural dissemination and governance achieved through cultural symbol integration and service function optimization.

Cultural tourism governance is a composite model with dual core objectives: preserving cultural heritage and enhancing tourism service quality. It operates through a collaborative governance framework involving government, market, and social stakeholders, employing precision-oriented and human-centered governance tools to achieve cost-effective management and efficiency improvement in cultural tourism scenarios. In the specific context of Jingdezhen's ceramic cultural tourism, its key demands can be summarized into four dimensions: precise tourist service adaptation, construction of local cultural identity, empowerment through ceramic industry synergy, and optimization of governance costs with multi-stakeholder collaboration. The implementation of these demands requires concrete carriers of cultural soft infrastructure as foundational support.

2.2. Ceramic Culture and the Intrinsic Connection Between Them

Ceramic culture constitutes Jingdezhen's distinctive cultural essence, embodying a millennium of porcelain-making heritage and the artisanal spirit of relentless refinement. Core elements like the 72-step national intangible cultural heritage process and the Imperial Kiln Factory tradition provide unique cultural expression materials for soft infrastructure development. As tangible carriers of cultural soft infrastructure, wayfinding systems serve as a bridge between ceramic culture and cultural tourism governance. By transforming ceramic cultural symbols into perceptible spatial markers, they not only enable living cultural transmission but also directly address the core needs of cultural tourism governance through optimized service functions, establishing an intrinsic "culture-carrier-governance" chain. To clearly differentiate core characteristics among infrastructure types and highlight the unique attributes of cultural soft infrastructure, the following table compares three infrastructure categories:

Table 1 Comparison of Infrastructure Types

Infrastructure type	Core features	case	value orientation
Hard infrastructure	materiality, scale	Jingdezhen Ring Expressway	Addressing the basic needs of transportation
Soft infrastructure	intangibility, service	Jingdezhen Smart Culture and Tourism APP	Optimize visitor inquiry service
Cultural soft infrastructure	cultural and governance	Jingdezhen Ceramic Signage System	Cultural Communication and Cultural Tourism Governance

3. The Practice Construction of Jingdezhen Ceramic Themed Signage System

3.1. Jingdezhen Urban Signage System

The urban wayfinding system serves as the tangible embodiment of cultural soft infrastructure within urban spaces. It refers to a facility network embedded in cultural tourism settings, functioning primarily as an information delivery mechanism while simultaneously facilitating cultural expression and governance coordination. When applied in urban development, its design demonstrates greater scientific rigor than standalone architectural visual symbols. This system establishes a broader public consciousness, carries richer cultural significance, and achieves more rational functionality. As a symbolic and directional framework shaped by a city's collective identity, it builds upon its cultural heritage to create a recognizable urban identity.

In June 2025,144 key location signage in Jingdezhen made their debut across the city. These street signs, strategically placed throughout urban areas, not only serve practical functions but also seamlessly blend ceramic art with urban culture, becoming "mobile art exhibitions" for both visitors and residents. The revitalized signage system draws inspiration from Jingdezhen's traditional blue-and-white porcelain motifs, achieving a perfect fusion of classical ceramics and modern signage design. Some signs incorporate cultural symbols like the ancient opera stage in Leiping and a miniature model of the Red Pagoda in Fuliang, creating highly recognizable visual identifiers and craftsmanship. These signage elements integrate Jingdezhen's core ceramic heritage with contemporary design, featuring underglaze enamel technology that delivers vibrant colors and exceptional durability, ensuring they withstand outdoor environmental challenges.

3.2. Design Practice Path of Guidance System

The Jingdezhen Ceramic-themed wayfinding system achieves multidimensional synergy through its cultural essence. At the cultural expression level, it centers on traditional blue-and-white porcelain motifs as core visual symbols, blending classic patterns with modern minimalist design. Regional cultural elements like the Leping Ancient Opera Stage and Fuliang Red Pagoda are seamlessly integrated. By extracting the dominant blue hue, scrolling motifs, and ceramic vase contours from blue-and-white designs, the system transforms abstract cultural concepts into tangible visual identifiers. This creates a distinctive visual identity, transforming the wayfinding system into a mobile showcase of ceramic culture.

In the integration of craftsmanship and service, the production phase employs underglaze enamel technology, featuring vibrant colors and exceptional durability that withstands outdoor conditions, meeting long-term outdoor usage requirements. By combining laser engraving with hand-embedded screen techniques, cultural patterns and information modules are precisely embedded into the 2mm-thick material, achieving a harmonious blend of artistic aesthetics and practical functionality. The service phase utilizes standardized Chinese, English, Korean, and Japanese language labels, adhering to international standards to ensure accurate information for visitors from diverse nationalities. Through the integration of core elements like regional maps and cultural landmark introductions, it delivers multifaceted functions including guidance, service, and cultural dissemination.

3.3. The Core Path of Empowering Cultural Tourism Governance through Soft Cultural Infrastructure

In terms of cultural preservation, the signage system integrates ceramic symbols and intangible heritage techniques into urban public spaces, breaking the walls of traditional museums and bringing ceramic culture from galleries to the streets, thus achieving dynamic cultural dissemination. For local residents, the citywide ceramic signage serves as a medium to awaken cultural memories, strengthening local cultural identity and encouraging active participation in ceramic preservation. For tourists, the signage system acts as an intuitive window for cultural understanding, enabling them to quickly grasp the essence of Jingdezhen's ceramic culture through visual perception and information access, ensuring precise cultural outreach.

In service optimization, the tourist service functions adopt a "tiered response, all-age-friendly" design to meet "visitor adaptability" needs. This includes multilingual information to ensure infrastructure aligns with diverse user requirements. Through multilingual annotations and clear information hierarchy, it addresses information access barriers for international tourists. Future enhancements may incorporate Braille embossing and voice-over functions to accommodate disabled users, establishing a comprehensive all-age-friendly cultural tourism service system. This directly elevates the refinement of cultural tourism services, serving as a showcase window for external cultural promotion.

The industrial synergy feature integrates practical data from Jingdezhen's ceramic industry chain into the city's signage system. Each display panel features a surrounding area map to provide precise navigation and industrial resource matching services for visitors. The collaborative governance mechanism, through multi-stakeholder participation, addresses cost optimization needs. Ceramic enterprises maintain the embedded screens and periodically update the ceramic artworks in the signage windows, reflecting the principle that effective street governance requires coordinated efforts from various entities.

4. Comparison of the Case of the Guide Sign System in Jingdezhen and Other Cities

The Xi'an Tang-style signage system employs Tang Dynasty architectural motifs (e.g., dougong brackets and upturned eaves) as cultural representations, yet remains superficial in its "visual replication" without offering in-depth analysis of Tang craftsmanship. Its information hierarchy is disorganized, with inadequate multilingual support limited to Chinese-Japanese bilingual operation. Moreover, being government-monopolized, it fails to synergize with local cultural industries like Qin embroidery and shadow puppetry. In contrast, Jingdezhen's signage system replaces "symbolic piling" with "deep cultural integration of ceramic heritage," achieving significantly enhanced governance efficiency through multi-industry collaboration.

The Kyoto pedestrian signage system in Japan exemplifies refined functional design, featuring clear information hierarchy (core information highlighted in red) and ergonomic optimization.

However, its cultural expression remains understated, with no incorporation of local materials into the design. In terms of stakeholder participation, the system primarily involves government agencies and design firms, with limited engagement from community organizations and no synergy with handicrafts or tourism. Unlike Jingdezhen, Kyoto's signage system only achieves "functional refinement," whereas Jingdezhen leverages the "integration of ceramic culture and industry" to realize a triple synergy of functionality, cultural significance, and industrial development.

5. Optimization Design

In terms of color and visual design for text information, current wayfinding systems employ stacked information layers with color differentiation to indicate priority. For instance, the color of title information in wayfinding zones can be changed to blue-and-white, while auxiliary text retains its original hue, with subtle contour adjustments to ceramic-inspired shapes. Well-designed urban wayfinding systems enhance travel efficiency for residents and visitors through harmonious color coordination that creates a unified visual experience. Distinctive color markers enable quick destination identification, significantly improving travel efficiency. For regional wayfinding signage, traditional square panels can be replaced with designs incorporating ancient architectural elements to reflect the cultural heritage of historic cities. To address inadequate wayfinding in urban-rural fringe areas, adding ceramic-based surface substrates with content focusing on ceramic workshops and village kilns can better meet the needs of rural cultural tourism scenarios.

In terms of ceramic texture expression, the existing urban signage carriers are utilized by incorporating the original clay texture onto their surfaces. This transformation elevates Jingdezhen's signage system, which centers on ceramic culture as its core design language, from a traditional visual communication medium to a comprehensive sensory experience that integrates visual appreciation and tactile perception. Different areas can be distinguished through ceramic craftsmanship. For instance, Changjiang District's signage features blue-and-white decorations, while Fuliang's rural areas showcase coarse ceramic textures. This approach not only resolves the current disorder in regional signage design but also unifies the entire signage system under the ceramic cultural framework, creating visual coherence.

6. Conclusion

The Jingdezhen Ceramic Signage System establishes a coordinated framework integrating cultural, functional, industrial, and governance dimensions, enabling cultural soft infrastructure to provide targeted support for cultural tourism governance. Its innovative value lies in transforming signage facilities into cultural carriers, industrial connectors, and governance tools centered on ceramic culture, thereby transcending the limitations of a singular perspective. For cultural tourism soft infrastructure in distinctive cultural cities, it is essential to prioritize local culture while avoiding tendencies toward "over-functionalization" or "over-symbolization".

Currently, AR technology is primarily applied in practical technological fields. In China's tourism-related industries, this technology remains relatively new. However, design professionals recognize that AR enhances users' environmental perception. This capability significantly improves understanding of objects and public spaces in design applications, a benefit particularly prominent in the cultural tourism sector. For intelligent AR interactive systems, guide panels can display QR codes for visitors to scan and access AR navigation interfaces. To accommodate accessibility needs, ceramic relief techniques can embed Braille on guide panels while adding voice-over functions, seamlessly integrating smart technology with cultural and inclusive design.

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