

Research on Tourism Development Strategies for Geoparks from the Perspective of Cultural-Tourism Integration: A Case Study of Yunyang Longgang

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ABSTRACT

With the vigorous development of the tourism industry, geoparks, as a distinctive category of tourist destinations, have gained increasing popularity among visitors owing to their unique natural landscapes and scientific value. Yunyang Longgang National Geopark, characterized by its spectacular karst tiankengs, extensive solution cave systems, and distinctive natural ecosystems, has emerged as a focal point for domestic and international tourists. Taking Yunyang Longgang Geopark as a case study, this research employs the perspective of cultural-tourism integration to analyze its current tourism status, identify critical challenges, and propose development strategies encompassing: infrastructure enhancement, increased community engagement, strengthened management and conservation of the park, and enrichment of its cultural connotations.

KEYWORDS

Cultural-Tourism Integration; Geoparks; Yunyang Longgang; Development Strategies

1. INTRODUCTION

Cultural-tourism integration has evolved into a contemporary imperative, representing not only a pragmatic necessity for synergistic advancement of culture and tourism, but also an inevitable outcome of their systematic coordination, ultimately aiming to unify economic and social benefits (Tao et al., 2021). As vital showcases of global geo-diversity, geoparks exploring viable pathways for cultural-tourism integration have become an essential mandate of our era.

Geoparks encompass numerous geoheritage sites integrated within UNESCO's holistic framework of conservation, education, and sustainable development. Heritage tourism generates substantial economic returns for geoparks, subsequently stimulating local economic growth. National geoparks facilitate international exchange and collaboration in geoscientific research, environmental protection, and sustainable tourism, thereby enhancing national prestige and global influence. Consequently, geoparks have emerged as priority development zones in China (Li et al., 2024). Yunyang Longgang National Geopark, situated in Yunyang County, Chongqing Municipality, is renowned for its profound Longgang Tiankeng (giant karst sinkhole), extraordinary solution cave landscapes, and expansive alpine meadows, epitomizing an ideal synthesis of natural exploration and cultural immersion. Despite increasing scholarly attention to cultural-tourism integration pathways across diverse destinations (Fu et al., 2020; Chen et al., 2024; Yuan et al., 2024), research specifically addressing geoparks remains deficient. Effectively incorporating regional cultural resources while developing distinctive scenic characteristics has thus become an urgent challenge for geopark administrators.

This study adopts Yunyang Longgang National Geopark as a research locus. Through the lens of cultural-tourism integration, it analyzes the park's current tourism conditions, identifies critical operational challenges, and proposes targeted development strategies. The ultimate objectives are to advance sustainable development of geoparks and enhance visitor satisfaction.

2. ANALYSIS OF TOURISM RESOURCES IN YUNYANG LONGGANG NATIONAL GEOPARK

2.1. Natural and Geological Resources

Yunyang Longgang, situated in Yunyang County, Chongqing Municipality, China, is a national geopark integrating natural wonders and geological heritage sites. Globally acclaimed as the "Premier Natural Stone Vessel", its distinctive natural landscapes and prominent geological features attract substantial attention from both domestic/international tourists and geoscientists.

2.1.1. Natural Landscapes

Longgang Tiankeng: As the most iconic feature, this karst sinkhole extends approximately 335 meters in depth with a maximum rim diameter of 650 meters. Characterized by near-vertical walls resembling a colossal stone vessel, its base supports dense vegetation while the upper rim offers panoramic views of the spectacular depression.

Cloud Walkway: Suspended on a cliff at 1,010 meters above sea level, this 26.68-meter cantilevered glass skywalk (locally termed "Glass Plank Road") includes 40 meters of transparent sections. Recognized among the world's longest structures of its type, it provides visitors with a thrilling yet awe-inspiring experience simulating cloud traversal.

Shisun River: Traversing the geopark, the river exhibits crystalline waters flanked by precipitous cliffs, forming a distinctive gorge landscape. Its namesake stalagmite formations display diverse morphologies, harmoniously integrated with surrounding topography to create an ideal setting for rafting expeditions.

Qishan Grassland: Located north of Longgang, this alpine meadow features verdant summer grasses and wildflower blooms. It serves as both a leisure retreat and optimal vantage point for sunrise and sea-of-clouds observations.

Biaocao Ancient Village: Preserving traditional Tujia ethnic stilted architecture, it enables immersive experiences of Tujia cultural ethos through vernacular cuisine and indigenous customs.

2.1.2. Geological Characteristics

The Yunyang Longgang area exemplifies a classic karst terrain. Through hundreds of millions of years of aqueous erosion and weathering, it has developed complex landforms including solution caves, tiankengs, gorges, and fengcong clusters, demonstrating extraordinary geological craftsmanship. Certain sectors additionally exhibit distinctive Danxia landform features, where crimson conglomerate formations have been sculpted into precipitous cliffs and fantastical structures by fluvial and aeolian processes. These vibrantly colored features complement the karst topography, enhancing the geodiversity of the scenic area.

Crucially, the formation of Longgang Tiankeng correlates fundamentally with protracted tectonic activities in the region, notably crustal uplift and faulting. These geodynamic processes have generated abundant geoheritage vestiges possessing significant scientific value for reconstructing Earth's evolutionary history. Concurrently, diverse lithologies dominate the geopark—predominantly limestone, sandstone, and shale—whose heterogeneous properties and structural configurations collectively shape Longgang's multifaceted landscapes.

Consequently, Yunyang Longgang constitutes an invaluable resource for geological research and natural aesthetics exploration, while simultaneously emerging as a premier cultural-tourism destination.

2.2. Cultural Resources

The Yunyang Longgang area possesses abundant cultural assets encompassing distinctive Tujia ethnic culture, enigmatic historical legends, and diverse folk traditions.

2.2.1. Tujia Ethnic Culture

Situated within Qingshui Tujia Ethnic Township, Yunyang Longgang exhibits profound Tujia cultural heritage that synergistically complements its natural landscapes, collectively constituting unique tourism appeal. Traditional Tujia stilted architecture prevails throughout Longgang and adjacent areas. These timber structures, strategically positioned along mountainsides and waterways, utilize elevated wooden pillars for moisture resistance and topographic adaptation, epitomizing the Tujia people's wisdom in maintaining ecological symbiosis.

Vibrant traditional attire features intricate embroidery, with female silver ornaments and needlework particularly reflecting Tujia aesthetic sensibilities and social customs. Artisanal crafts—including batik, brocade weaving, and bamboo basketry—demonstrate exceptional indigenous craftsmanship. Tujia cuisine is renowned for distinctive flavors exemplified by preserved pork, fermented soybean residue, communal ritual rice, and oil-tea soup, constituting essential gastronomic experiences for cultural immersion. Additionally, the Tujia demonstrate culinary ingenuity through localized utilization of wild mushrooms and mountain foraged greens.

2.2.2. Historical Legends

Origin of Longgang: Multiple legendary accounts explain its formation. One narrative describes Longgang as a massive water-filled stone vessel where the celestial maiden Wang Yuetong descended to cultivate spiritual practices, enchanted by its serenity. Another version centers on a romance between a young woodcutter and a dragon maiden he rescued, with their love inspiring the toponym "Dragon Vessel" (Dragon VAT), imbuing the site with romantic symbolism.

Legend of the Moon-Reflecting Cave: Within Longgang, Yingyue Cave purportedly projects lunar light onto its subterranean pool during specific nights, creating the "Moonlit Dragon Vessel" phenomenon. This legend enhances mystical appeal, attracting substantial tourist visitation.

2.2.3. Folk Traditions

Baishou Dance: As the quintessential Tujia performing art, this ritual dance predominates during festivals and ceremonies. Its choreography mimics agricultural and hunting activities, embodying historical socio-cultural practices.

Early New Year Celebration: Observed prior to the Han Chinese Spring Festival, this tradition originated from ancient military customs. Celebrants prepare ceremonial feasts, venerate ancestors, and congregate to petition for agricultural abundance and communal safety.

Daughter's Festival: Termed "Tujia Valentine's Day", it facilitates courtship among Tujia youth through singing, dancing, and games, reflecting open marital values.

Bridal Lamentation Rituals: A nuptial ceremony where brides and kin vocally express parting sorrow through improvised laments, simultaneously conveying benedictory sentiments.

2.3. Tourism Resource Assessment

Natural landscapes such as Longgang Tiankeng and the Cloud Walkway exhibit exceptional rarity both domestically and globally. The distinctive geological formations and scenic grandeur have

earned Yunyang Longgang the epithet "Last Shangri-La of the Three Gorges", endowing it with compelling appeal for international and domestic visitors as a geologically unique destination.

As a national geopark, its geoheritage sites provide invaluable physical archives for geoscientific research, holding significant scholarly and science-communication value that enhances academic tourism appeal. Furthermore, abundant Tujia cultural resources—encompassing vernacular architecture, traditional attire, artisanal crafts, and folk rituals—deliver profound cultural immersion, enriching the destination's cultural capital and attractiveness.

Concurrently, the pristine ecological environment characterized by unpolluted atmosphere and alpine meadows offers visitors high-quality ecotourism experiences facilitating deep nature engagement and holistic rejuvenation.

3. CURRENT DEVELOPMENT STATUS AND PROBLEM IDENTIFICATION

3.1. Development Status

In recent years, Yunyang Longgang National Geopark has demonstrated significant enhancements in tourism reception capacity, infrastructural development, and brand influence as a premier destination within Chongqing and China.

3.1.1. Tourist Reception Profile

The geopark attracts substantial visitor volumes through its unique natural landscapes and diverse experiential offerings, particularly during peak seasons and holidays. Reception records consistently surpass historical highs, evidenced by over 198,000 visitor arrivals within the initial six days of key holiday periods—reflecting exceptional tourism demand. Effective crowd management protocols maintain service quality during high-traffic intervals, while thematic events such as the "Global Longgang-8-Day National Day & Mid-Autumn Festival" enhance experiential richness and satisfaction.

3.1.2. Infrastructure Development

To elevate visitor experiences and reception capabilities, continuous infrastructure enhancement and renovation initiatives have been implemented. Internal trails, observation decks, and rest facilities have been upgraded, with specialized adventure-based attractions like the Cloud-Colored Bridge and Cloud Swing addressing heterogeneous visitor preferences. Concurrently, Advancements in smart tourism infrastructure encompass the digitalization of interpretive systems, intelligent upgrading of ticketing platforms, and enhancement of security surveillance networks, collectively ensuring visitor safety and operational convenience.

3.1.3. Brand Development

Yunyang Longgang has strategically enhanced its global recognition and brand identity, achieving designation as a National AAAAA Tourist Attraction and earning epithets including "Last Shangri-La of the Three Gorges" and "Chongqing's Lesser Huashan". Through participation in international tourism expos, digital marketing amplification, and cross-media collaborations, its influence continues to expand. Crucially, the integration of Tujia cultural elements into tourism products and activities has forged distinctive brand differentiation, attracting culturally motivated visitors.

3.1.4. Strategic Partnerships and Tiered Upgrading

Strategic collaborations with entities such as Beijing Zhongye Equipment Research & Design Institute facilitate annual development of 1-2 flagship experiential projects. This initiative aims to transform the geopark into a neo-karst experiential destination, consolidating its status as Yunyang

County's premier tourism brand. These efforts concurrently elevate regional tourism competitiveness and stimulate socioeconomic advancement.

3.2. Problem Identification

Despite possessing exceptional geographical endowments and achieving measurable developmental progress, Yunyang Longgang faces persistent constraints in cultural-tourism integration due to longstanding deficiencies in cultural interpretation depth, homogeneous market competition, undiversified tourism products, limited community engagement, and ecological conservation-tourism carrying capacity imbalances—indicating considerable untapped potential for enhancement.

3.2.1. Superficial Cultural Interpretation

Current Tujia cultural integration remains superficial, lacking immersive interpretive frameworks and interactive engagement mechanisms, thereby limiting comprehensive transmission of cultural heritage.

3.2.2. Homogeneous Competition

Proliferation of analogous nature-and-culture destinations intensifies market competition. Strategic product differentiation and unique selling proposition enhancement are imperative to counter commodification trends.

3.2.3. Monotonous Tourism Product Portfolio

Overreliance on signature attractions reveals structural deficiencies in product innovation. Scarcity of segmented offerings (e.g., niche experiences for specialized tourist cohorts) constrains market diversification.

3.2.4. Constrained Community Engagement

Deep community participation and benefit-sharing constitute a critical dimension of cultural-tourism integration. Concurrently, the establishment of geoparks represents an innovative strategy for sustainable development and socioeconomic advancement, predicated on local communities' engagement in sustainability initiatives. Yunyang Longgang demonstrates deficiencies in this regard. Geopark development enhances community awareness regarding geoheritage conservation imperatives. The geopark paradigm embodies a novel approach to sustainable regional development within protected areas, serving as a vital conduit for local governmental involvement in tourism development. Consequently, active participation of residents in the transition process is essential to achieve sustainable geotourism. Prioritizing mechanisms to incentivize community engagement in tourism development, ensure equitable benefit-sharing, and prevent disconnects between tourism outcomes and resident welfare remains imperative (Shen et al., 2024).

3.2.5. Ecological Fragility vs. Tourism Carrying Capacity

Yunyang Longgang integrates exceptional natural wonders—including tiankengs, gorges, and solution caves—into a singular geological complex. Escalating visitor volumes necessitate prioritizing the protection of these ecologically vulnerable landscapes from anthropogenic degradation. Concomitant increases in waste generation demand efficient classification, collection, and processing systems to mitigate environmental impacts. Balancing tourism development with ecological conservation to ensure sustainable operation, while preventing overload-induced deterioration of natural and cultural assets, constitutes a critical challenge.

4. DEVELOPMENT STRATEGIES FOR YUNYANG LONGGANG NATIONAL GEOPARK UNDER CULTURAL-TOURISM INTEGRATION

Addressing identified challenges necessitates collaborative efforts among governmental bodies, park administrators, local communities, and enterprises. Implementing targeted strategies—including infrastructure optimization, enhanced community engagement, strengthened conservation management, and cultural connotation enrichment—will advance high-quality cultural-tourism integration at Yunyang Longgang.

4.1. Infrastructure Optimization

Over medium-to-long-term horizons, geopark administrative authorities should prioritize enhancing tourism infrastructure at Longgang Geopark to align with UNESCO-designated national geopark standards (Zhang et al., 2024). Progressive development initiatives will establish it as a premier national geopark in China, advancing sustainable development objectives.

4.2. Enhanced Community Engagement

Implementing geotourism requires rational optimization of the park's industrial structure and regulated management of visitation flows, production activities, and residential zones. Community conservation awareness necessitates enhancement through proactive facilitation of resident participation in park development by administrative bodies, thereby elevating local livelihoods and stimulating socioeconomic advancement (Jiang, 2004).

4.3. Strengthened Conservation Management

Administrative entities must regulate tourism development activities within geoheritage zones, dismantling structures incongruous with landscape aesthetics while preserving intrinsic scenic integrity and vernacular character. Activities detrimental to geoheritage conservation require strict prohibition. Visitor growth must adhere to environmental carrying capacity thresholds to cultivate a globally recognized geopark distinguished by pristine landscapes and ecologically harmonious environments (Ma et al., 2024). Tourism revenue enhancement necessitates transitioning from scale-driven expansion to per-capita economic yield optimization through diversifying experiential offerings, enriching interpretative content, extending visitor dwell time, and stimulating tourism expenditure, thereby establishing geotourism as a pivotal regional economic pillar.

4.4. Cultural Connotation Enrichment

Geopark management must implement diversified interpretive and educational programming to facilitate comprehensive visitor appreciation of Tujia cultural heritage and the intrinsic value of landscape resources. Accelerated development of integrated Tujia cultural-ecotourism products is essential to enhance experiential depth. Structured cultural immersion activities—including Tujia song-dance performances, traditional handicraft demonstrations, and folk festival celebration—enable authentic engagement with Tujia cultural essence (Duan et al., 2024). For instance, participatory experiences such as Baishou Dance workshops, observation of Xilankapu brocade weaving (traditional Tujia textile artistry), and ethnographic interactions foster profound understanding of Tujia lifeways and aesthetic sensibilities.

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