

Article

Cultural and Tourism Empowerment and Industry-Education Synergy: A Study on the Sustainable Development Path of Hainan Free Trade Port Market

Pingqi Tong ^{1,*}¹ Hainan Vocational University of Science and Technology, Haikou, China

* Correspondence: Pingqi Tong, Hainan Vocational University of Science and Technology, Haikou, China

Abstract: The development of the Hainan Free Trade Port has entered a critical phase focused on comprehensive quality enhancement and systemic efficiency improvement. As a multifaceted platform integrating cultural heritage, immersive tourism experiences, and modern commercial consumption, the regional market has become a pivotal force in revitalizing local economic momentum and promoting dynamic cultural preservation. However, structural challenges such as intensified homogenized competition, operational vitality deficiencies, and inadequate professional talent support are increasingly evident. These bottlenecks significantly hinder the market's essential transition from a mere "traffic gateway" to a comprehensive "value hub." Grounded in the ongoing development practices of the Free Trade Port, this study employs cultural-tourism empowerment and industry-education collaboration as dual strategic drivers to systematically outline sustainable development pathways for the market across economic, social, and cultural dimensions. By integrating advanced vocational training frameworks with local tourism demands, the proposed model addresses the critical skills gap while fostering entrepreneurial innovation. Furthermore, through targeted mechanism innovation and strategic resource optimization, this research provides robust theoretical support and actionable practical models for stakeholders. Ultimately, the study aims to facilitate the construction of a resilient market ecosystem that seamlessly combines profound cultural depth, robust economic resilience, and enduring community vibrancy, thereby ensuring long-term sustainability and global competitiveness for the Hainan Free Trade Port.

Keywords: free trade port; cultural tourism; industry-education synergy; sustainable development; market ecosystem; mechanism innovation

1. The Realistic Picture and Deep Challenges of Market Development in Hainan Free Trade Port

1.1. The Stage Characteristics of the Development of the Market

Hainan's market clusters are undergoing a significant transformation, driven by the dual forces of free trade port policies and the evolving consumer demand for higher-quality experiences. The province has witnessed the emergence of distinctive market clusters, each characterized by unique themes that cater to diverse consumer interests. These clusters have become major attractions, drawing substantial annual tourist flows and playing a crucial role in stimulating regional consumption. As a result, they have established themselves as key drivers of the cultural tourism industry's high-quality development. However, the current development model, which has traditionally focused on expanding scale, is increasingly shifting toward prioritizing quality and innovation. This transition underscores the urgent need to address challenges such as homogenization, which can hinder the ability of these clusters to stand out in a competitive market. To achieve this, it is essential to move beyond the concept of "check-in spots" — locations visited briefly for their popularity — and instead cultivate "destination destinations" that offer immersive, memorable experiences. This shift requires strategic

Received: 11 June 2025

Revised: 16 July 2025

Accepted: 26 July 2025

Published: 31 July 2025



Copyright: © 2025 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

planning, investment in infrastructure, and the creation of unique value propositions that resonate with both domestic and international visitors [1]. By fostering differentiation and enhancing the overall quality of offerings, Hainan's market clusters can solidify their position as premier destinations, contributing to the sustainable growth of the region's economy and cultural tourism sector.

1.2. The "Triple Imbalance" Dilemma Facing the Development of the Market

Economic imbalance arises from the tension between short-term dependency and long-term sustainability in market development. Many businesses overly rely on promotional activities to attract customers, which often leads to a lack of innovation and widespread homogenization of products. This scenario is further exacerbated by high stall rental costs, which place significant financial pressure on small and micro enterprises, forcing many to exit the market. In some cases, these elevated rental costs result in vacant stalls and disrupted customer flow, creating a detrimental cycle where high investments yield minimal returns. This cycle not only undermines the financial stability of individual businesses but also weakens the overall market ecosystem, making it increasingly difficult to foster sustainable growth and resilience [1, 2].

Cultural imbalance is characterized by the gap between superficial presentations and meaningful, immersive experiences. Many markets fail to leverage their cultural resources effectively, often limiting their offerings to static displays such as background music or exhibition panels. This approach does not engage visitors deeply, leading to shorter stays and lower participation rates. The lack of interactive and immersive design diminishes the cultural appeal of these markets, reducing their ability to convert cultural interest into tangible consumption [3]. Without a robust strategy to integrate dynamic cultural elements, these markets struggle to establish themselves as vibrant hubs of cultural and economic activity, thereby missing opportunities to enhance visitor engagement and drive sustainable growth.

Operational imbalance stems from the disparity between basic management practices and the need for high-quality services. Many markets suffer from inadequate refinement in their management mechanisms, which often results in poor environmental sanitation, outdated safety infrastructure, and insufficient emergency response capabilities. For example, improper waste disposal and aging facilities can significantly detract from the visitor experience, leading to declining foot traffic over time. This erosion of visitor satisfaction undermines the market's ability to maintain a stable and thriving operational foundation [4, 5]. To address these challenges, markets must prioritize the development of comprehensive management systems that emphasize cleanliness, safety, and responsiveness, ensuring a positive and sustainable environment for both businesses and consumers.

1.3. Three Deficiencies of Core Challenges: Structural Contradictions

The persistent lack of driving force within the system has created significant challenges for sustainable development [6]. The hollowing out of market mechanisms has led to an over-reliance on government subsidies, which, while providing short-term relief, have inadvertently fostered a dependency that stifles innovation and self-sufficiency. This dependency has resulted in insufficient private investment, as stakeholders perceive limited opportunities for profitable returns. Consequently, passenger flow has declined, further exacerbating the system's inability to generate endogenous growth momentum. The absence of a robust market-oriented operational mechanism has perpetuated this cycle, making it increasingly difficult to break free from the constraints of subsidy reliance and to establish a self-sustaining economic model.

The lack of cultural depth represents another critical challenge, as the disconnect between resource transformation and experiential design has hindered the effective utilization of local cultural assets. While traditional festivals and intangible cultural heritage skills are often showcased, they are typically relegated to the role of static

background elements rather than being dynamically integrated into interactive and engaging consumption scenarios. This approach has limited the ability of cultural resources to resonate with modern consumers, who increasingly seek immersive and participatory experiences. Without innovative designs that seamlessly incorporate cultural elements into marketable products, the intrinsic value of these resources remains underutilized, and their potential to drive consumer interest and economic growth remains untapped [4].

The lack of talent support further compounds the challenges faced by the system. A significant mismatch exists between the professional capabilities of the workforce and the evolving demands of the market. This issue is exacerbated by the low proportion of local young practitioners entering the industry, which limits the infusion of fresh perspectives and innovative ideas [6]. Additionally, the disconnect between university-level talent cultivation programs and the specific needs of the industry has resulted in a workforce that is ill-equipped to address emerging challenges. This skills gap has led to a stagnation in innovation and a troubling trend of product development homogenization, where offerings lack differentiation and fail to capture consumer interest. The absence of a well-trained and dynamic talent pool has become a critical barrier to enhancing market vitality and fostering the development of novel business models.

The interwoven and mutually reinforcing structure of these deficiencies has created a persistent cycle of inefficiency within the market. The combined effects of a lack of driving force, cultural depth, and talent support have entrenched the system in a state of stagnation, where progress is continually hampered by structural contradictions [7]. This vicious cycle has become a significant bottleneck, impeding the in-depth development of the free trade port's cultural tourism industry. Addressing these interconnected challenges requires a comprehensive and coordinated approach that prioritizes market-driven mechanisms, innovative cultural integration, and targeted talent development to unlock the sector's full potential and achieve sustainable growth.

2. Cultural and Tourism Empowerment: Activating Cultural Core and Reconstructing Market Value Ecosystem

2.1. Deeply activating cultural resources to create immersive experience scenarios

The core of cultural tourism empowerment lies in transforming static cultural resources into dynamic and engaging consumption experiences. This approach addresses the challenge of homogenization, where offerings often lack distinctiveness. By delving deeply into the unique cultural characteristics of a locality and reconstructing both market content and spatial narratives, this strategy fosters heightened visitor engagement and strengthens cultural identity. The process involves identifying and amplifying the intrinsic cultural elements that resonate with the community and visitors alike, ensuring that these elements are not merely showcased but actively integrated into the experience. This transformation allows cultural tourism to evolve beyond traditional formats, creating a more immersive and meaningful connection between visitors and the cultural heritage they encounter.

Moving beyond conventional exhibition formats, cultural elements are seamlessly woven into market planning, spatial design, and interactive experiences to create a more engaging environment. For example, the Qionghai Boao Market has adopted a cultural theme centered on "Dangjia Fishermen's Songs," which includes features such as a Fishermen's Story Corridor and an Intangible Cultural Heritage craft zone. Visitors are invited to participate in hands-on activities, such as weaving fishing nets and learning traditional songs, which significantly enhance their engagement and transform cultural elements from passive background features into active core attractions. Similarly, the Haikou Qilou Old Street Market incorporates Southeast Asian handicrafts, which have successfully attracted a growing number of cross-border tourists. These initiatives have led to measurable improvements in both average visitor spending and the duration of their stays, demonstrating the effectiveness of integrating cultural revitalization with

tourism strategies. By prioritizing interactive and immersive experiences, these markets not only preserve cultural heritage but also create sustainable economic benefits, fostering a deeper connection between visitors and the local culture.

Through the innovative development of cultural intellectual properties, markets are transforming from simple trading venues into vibrant cultural destinations. For instance, the Sanya Haitang Bay Market has introduced a "Culture + Cuisine" themed route, where visitors can redeem specialty dining vouchers and participate in intangible cultural heritage tea art experiences. This initiative creates a seamless loop that integrates market exploration, dining, and cultural engagement, enhancing the overall visitor experience. By embedding cultural storytelling into consumption scenarios, these efforts effectively extend visitor stays, deepen cultural identity, and increase the likelihood of repeat visits. Furthermore, this approach injects sustainable momentum into market operations by fostering a sense of connection and loyalty among visitors [8]. The strategic integration of cultural narratives with economic activities not only revitalizes local traditions but also ensures their relevance in contemporary tourism contexts, paving the way for long-term growth and cultural preservation.

2.2. Innovating Cultural-Tourism Integrated Products to Extend the Value Chain

By integrating cultural narratives, interactive experiences, and digital technologies, the market fosters a dynamic and immersive environment that enhances visitor engagement. The use of digital tools, such as QR code scanning for accessing cultural story videos and augmented reality (AR) interactive tours, provides visitors with a more engaging and personalized experience. These technologies not only make cultural exploration more accessible but also add an element of fun and innovation to traditional tourism. Furthermore, the development of cultural-themed derivative products, including items inspired by intangible cultural heritage and curated festival experience packages, contributes to the creation of a comprehensive ecosystem. This ecosystem seamlessly combines core cultural experiences with derivative consumption opportunities, thereby diversifying revenue streams and reducing the financial burden associated with rental costs [9]. By leveraging these strategies, the cultural-tourism sector can achieve a more sustainable and profitable operational model, ensuring long-term growth and resilience in a competitive market.

Optimizing product design through data-driven feedback mechanisms allows for precision marketing and continuous improvement of offerings. By analyzing visitor preferences and behaviors, cultural-tourism enterprises can dynamically iterate their products to better align with consumer expectations. This approach not only enhances the value derived from each customer but also establishes a self-reinforcing cycle of attraction, consumption, and promotion. Specifically, the process begins with creating compelling experiences that draw visitors in, followed by converting these experiences into tangible consumption opportunities. Satisfied visitors then share their positive experiences, amplifying word-of-mouth dissemination and attracting new customers. This virtuous cycle enables the market to shift its focus from short-term traffic management strategies to a more sustainable model centered on long-term value creation. By prioritizing quality and innovation, cultural-tourism integrated products can significantly contribute to the overall development and competitiveness of the industry.

3. Industry-Education Collaboration: Strengthening Talent Foundation and Building an Innovation Support System

3.1. Establishing a collaborative practice platform between universities and enterprises to achieve precise talent supply

Industry-academia collaboration plays a crucial role in bridging the gap between talent cultivation, innovation development, and industrial needs. By fostering deeper partnerships between universities and enterprises, this approach systematically addresses challenges such as talent shortages and mismatches in skillsets. The integration of

academic resources with market demands ensures that the workforce is better equipped to meet the evolving needs of industries, thereby enhancing overall economic and social development [4, 10]. This collaborative model not only strengthens the talent pipeline but also fosters innovation by aligning educational outcomes with practical applications in the market.

Universities and enterprises are increasingly working together to establish training bases that incorporate real-world scenarios into academic curricula. For example, partnerships between higher education institutions and market operators have led to the creation of practice bases where students gain hands-on experience in areas such as planning, marketing, and the promotion of cultural heritage. These initiatives enable students to transition seamlessly into professional roles upon graduation. By co-developing curriculum systems, universities and enterprises ensure that teaching content reflects real market operations, thereby enhancing students' practical skills and their ability to contribute effectively to industry needs. This approach not only improves the employability of graduates but also boosts the operational efficiency of businesses by providing them with well-prepared talent.

Targeted training programs and internship mechanisms are essential for achieving a seamless alignment between the supply of talent and market demand. Universities design customized training initiatives that address specific industry requirements, focusing on areas such as cultural planning, digital marketing, and experience design. These programs equip graduates with the skills needed to adapt quickly to professional environments, thereby addressing the challenge of a low proportion of local young practitioners in certain industries. By fostering a workforce that is both skilled and adaptable, these initiatives provide sustained intellectual support for market innovation and development. This alignment between education and industry not only enhances the employability of graduates but also contributes to the long-term growth and competitiveness of local markets.

3.2. Optimizing Collaborative Mechanisms to Enhance Innovation Support Capabilities

The collaborative innovation model, characterized by the government creating a supportive framework, enterprises identifying specific challenges, and universities providing targeted solutions, is designed to facilitate the effective transformation of academic intellectual resources into market-driven growth. This approach emphasizes the alignment of academic expertise with practical industry needs, ensuring that research outputs are not only theoretical but also applicable to real-world scenarios. By fostering such synergy, the model aims to bridge the gap between knowledge creation and economic development, enhancing the overall efficiency of innovation processes [9, 11].

To operationalize this model, the government has established a dedicated fund to support market innovation. Enterprises are encouraged to submit detailed descriptions of operational challenges, such as improving nighttime engagement or refining cultural experience designs. University teams then compete to develop innovative solutions tailored to these challenges. For example, a team from Hainan Normal University proposed a concept combining a cultural light show with a themed night market for Haikou's local market. Following the pilot implementation, the initiative resulted in a notable increase in nighttime foot traffic and revenue, alongside a significant improvement in tourist satisfaction. This structured mechanism effectively connects academic talent with market demands, creating a streamlined process that encompasses problem identification, solution development, and practical implementation. By fostering such collaboration, the model enhances the efficiency and impact of innovation efforts, ensuring that academic contributions translate into tangible benefits for the market.

A regularized collaborative mechanism is essential for promoting the seamless integration of university research outputs with market practices. This involves incorporating topics such as digital market operations and the development of cultural intellectual property into the agenda of university-enterprise partnerships. By continuously incubating innovative projects within this framework, the mechanism

provides institutional support for markets to transition from short-term operational strategies to sustainable, long-term empowerment. Such integration not only ensures the ongoing relevance of academic research but also fosters the creation of robust systems that drive market innovation and adaptability over time. The establishment of these institutional safeguards is critical for maintaining the momentum of innovation and ensuring that market practices evolve in alignment with emerging academic insights and technological advancements.

4. Sustainable Development Path: Three-dimensional Synergistic Advancement of Economy, Society and Culture

4.1. Strengthening Economic Sustainability: Building a Diversified Profit Ecosystem

The market has evolved beyond traditional stall leasing to adopt a dual-profit model that integrates core experiences with derivative consumption, fostering a diversified economic ecosystem. This innovative approach includes the establishment of a cultural IP licensing zone, which transforms intangible heritage motifs and festival elements into cultural and creative products. These products not only preserve cultural significance but also generate shared revenue, contributing to economic sustainability. Additionally, the expansion of online channels, such as live streaming and cultural e-commerce platforms, enhances consumer accessibility and engagement, thereby broadening market reach and increasing profitability. The introduction of green finance further supports eco-friendly market development by providing financial incentives for sustainable practices, which in turn reduces operational costs and promotes environmental responsibility. This comprehensive economic transformation accelerates the break-even period for businesses, enabling them to achieve self-sustaining growth while maintaining a focus on long-term sustainability. By integrating cultural preservation, technological innovation, and environmental stewardship, this model exemplifies a holistic approach to economic development that aligns with broader goals of sustainable progress [12]. Such advancements not only strengthen the economic foundation but also contribute to the harmonious development of society and culture, ensuring that growth is both inclusive and enduring.

4.2. Deepening Social Culture: Promoting Community Symbiosis and Cultural Heritage

The initiative emphasizes a "resident-participatory operation" model, which actively involves local residents as cultural guides and craft inheritors. This approach not only enhances community engagement but also provides residents with opportunities to increase their income. By integrating the "Cultural Heritage in Markets" series, the program facilitates live demonstrations by inheritors of intangible cultural heritage, allowing traditional practices to reach broader audiences. This strategy fosters a deeper appreciation for cultural traditions while simultaneously attracting tourists and encouraging their recommendations. The resulting cycle of cultural identity, increased consumption, and community prosperity strengthens the social cohesion and cultural resilience of the market. Furthermore, this model promotes a sense of ownership and pride among community members, as they play a direct role in preserving and showcasing their heritage. By aligning cultural preservation with economic benefits, the initiative ensures that traditional practices remain relevant and sustainable in modern contexts. This dual focus on cultural and economic development creates a robust framework for community symbiosis, where cultural heritage serves as both a unifying force and a driver of local prosperity. The program ultimately demonstrates how cultural initiatives can be leveraged to build stronger, more resilient communities while safeguarding intangible heritage for future generations.

4.3. Promoting the Green Development Concept: Integrating Eco-Friendly Operations

Integrating environmental principles into the entire lifecycle management of markets is essential for fostering sustainable development. This involves standardizing waste

sorting facilities to ensure proper disposal and recycling, promoting the use of solar-powered lighting systems to reduce reliance on non-renewable energy sources, and encouraging the adoption of biodegradable packaging to minimize environmental impact [8]. A pilot initiative for creating "plastic-free markets" can be implemented, requiring vendors to transition to eco-friendly materials, which would significantly mitigate pollution and contribute to a cleaner environment. Additionally, leveraging the ecological advantages of the free trade port provides an opportunity to establish a "green market" certification system. Such a system would serve as a benchmark for environmentally conscious practices, attracting tourists who prioritize sustainability and enhancing the market's appeal on a global scale. Environmentally friendly operations not only align with the free trade port's "ecology-first" positioning but also offer practical benefits, such as reducing long-term management costs and improving operational efficiency. Furthermore, these measures contribute to building a positive brand image and fostering social responsibility, which are increasingly valued by consumers and stakeholders. By integrating these eco-friendly strategies, markets can play a pivotal role in advancing green development and promoting sustainable economic growth.

5. Conclusion

The sustainable development of Hainan Free Trade Port's market necessitates a dual-engine approach, integrating cultural tourism and industry-education collaboration to foster transformative growth. Cultural tourism plays a pivotal role in revitalizing static heritage, converting it into dynamic and immersive experiences that enhance the region's appeal and economic value. By leveraging its rich cultural essence, Hainan can create a unique identity that attracts global attention and drives tourism-based economic activity. Simultaneously, industry-education collaboration addresses critical gaps in talent and innovation, ensuring a steady influx of skilled professionals equipped to meet the demands of a rapidly evolving market. This synergy between cultural tourism and industry-education collaboration not only resolves structural challenges such as imbalances and deficiencies but also establishes a robust foundation for sustainable economic vitality, enriched cultural significance, and heightened community engagement. Together, these forces create a self-reinforcing cycle that propels Hainan's market ecosystem toward long-term resilience and growth.

To achieve this vision, Hainan must prioritize the expansion of industry-education collaboration, fostering partnerships that align educational programs with market needs and innovation goals. Additionally, the integration of immersive cultural experiences and advanced digital platforms can transform traditional markets into interconnected cultural ecosystems, redefining their role within the broader economic framework. This approach positions Hainan as a leading example of high-quality market development, showcasing how policy-driven initiatives and market vitality can converge to create a thriving Free Trade Port. By adopting a dual-engine strategy—where culture serves as the soul, talent forms the foundation, and ecology becomes the core—Hainan's market ecosystem can evolve into a dynamic network that supports sustainable growth. This model not only strengthens Hainan's position as an 'International Tourism and Consumption Hub' but also offers replicable practices for other regions, contributing to nationwide advancements in market development. Future research should explore innovative methods to enhance the integration of cultural tourism and industry-education collaboration, as well as assess the long-term impacts of this dual-engine strategy on economic, social, and environmental sustainability. Through continuous refinement and adaptation, Hainan can ensure its Free Trade Port remains a vibrant and resilient contributor to global economic and cultural landscapes.

References

1. H. M. Guang, "External and internal perceptions of the Hainanese community and identity, past and present," Doctoral dissertation, Master's thesis, National University of Singapore, ScholarBank@ NUS Repository, 2012.

2. M. Fu, X. Que, and L. Feng, "Innovative development of regional cultural tourism projects in Hainan," *Culture*, vol. 3, no. 11, pp. 34-40, 2021.
3. E. Post and F. Calvão, "Mythical islands of value: Free ports, offshore capitalism, and art capital," in *Arts*, vol. 9, no. 4, p. 100, Sep. 2020.
4. A. Fyall and B. Garrod, "Heritage tourism: at what price?," *Managing Leisure*, vol. 3, no. 4, pp. 213-228, 1998.
5. K. Newland and C. Taylor, *Heritage tourism and nostalgia trade: A diaspora niche in the development landscape*. Washington, DC: Migration Policy Institute, 2010.
6. B. McKercher and H. Du Cros, *Cultural tourism: The partnership between tourism and cultural heritage management*. Routledge, 2002.
7. G. Richards, *Cultural tourism: Global and local perspectives*. Psychology Press, 2007.
8. T. C. Chang, S. Milne, D. Fallon, and C. Pohlmann, "Urban heritage tourism: The global-local nexus," *Annals of Tourism Research*, vol. 23, no. 2, pp. 284-305, 1996.
9. M. A. Khaliji, "Study on Tourism Development Free Trade Area (Case Study Qeshm)," 2020.
10. H. Du Cros and B. McKercher, *Cultural tourism*. Routledge, 2020.
11. C. Xiu and T. Li, "Construction of the Hainan Free Trade Port from the perspective of regional cultural development," *Frontiers in Earth Science*, vol. 10, p. 1032953, 2023.
12. A. P. Russo and J. Van Der Borg, "Planning considerations for cultural tourism: a case study of four European cities," *Tourism Management*, vol. 23, no. 6, pp. 631-637, 2002.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of Publisher and/or the editor(s). Publisher and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.