

The Tension of Tourism: The Game of Over-Tourism and Sustainable Development in Macau

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ABSTRACT

This study takes Macau as a case study to explore the dialectical relationship between over-tourism and sustainable tourism, aiming to provide valuable theoretical insights and practical guidance for addressing the global phenomenon of over-tourism. As one of the most attractive tourist destinations in the world, Macau faces significant tourism pressure, particularly in the context of geographical space constraints, where the expansion of the tourism industry creates a sharp contradiction with the city's carrying capacity. The article begins by analyzing the impact of over-tourism on Macau's urban space and social structure, revealing the boundary effects of tourism development and the tension between tourism and the quality of life of residents. From a dialectical perspective, the article further examines sustainable tourism as a potential solution to over-tourism, emphasizing that it is not merely a resource management strategy, but a profound cultural and social ethical reflection. This study argues that over-tourism and sustainable tourism are part of an ongoing dynamic process, and that their contradictions are not irreconcilable. Solutions can be found through the integration of cultural identity, social cooperation, and a global perspective.

KEYWORDS

Macau; Over-Tourism; Sustainable Tourism; Cultural Preservation; Dialectical Thinking.

1. INTRODUCTION

Macau, renowned as an international gaming and cultural tourism hub, has experienced rapid growth in its tourism industry in recent years. However, Macau is increasingly grappling with the severe challenges of over-tourism due to its limited geographic space and scarce natural resources. As a city covering only 32.8 square kilometers, Macau's core attractions and major commercial areas are highly concentrated, resulting in a significantly uneven distribution of tourists and resources. The rapid increase in visitor numbers has fueled the city's economic growth, with the gaming industry and related tourism services contributing most of Macau's GDP. Yet, this development model has also led to excessive resource consumption, heightened social pressures, and environmental degradation [1]. For instance 2019, Macau welcomed 39.4 million visitors [2], nearing the city's maximum carrying capacity. The high density of tourists has exacerbated traffic congestion and overloaded public infrastructure while driving up living costs and fostering resentment among residents toward the tourism industry [3]. This phenomenon underscores Macau's struggles in managing visitors and urban planning, particularly balancing economic growth with residents' quality of life. The over-tourism issue has compelled Macau to reexamine its tourism development model, shifting away from a singular focus on economic benefits toward a path that prioritizes resource.

The essence of over-tourism lies in the tension between economic development and social and environmental resources. Addressing this tension requires a multidisciplinary theoretical framework. As an analytical tool, stakeholder theory offers a comprehensive understanding of the conflicts of interest among governments, businesses, residents, and tourists [4]. This theory highlights the dynamic nature of interest distribution and underscores the importance of policy coordination and interest alignment. In Macau, the government must balance developing the tourism industry and meeting the living needs of residents while ensuring a high-quality visitor experience. Simultaneously, businesses, in their pursuit of profit, must take on social responsibilities to mitigate the environmental impacts of tourism activities. At the same time, the dialectical perspective provides theoretical support for addressing the conflict between cultural preservation and economic development [5]. This perspective emphasizes that short-term gains and long-term sustainability are not mutually exclusive but can coexist through dynamic equilibrium. For instance, the synergy between cultural tourism and the gaming industry can become a new economic growth point in Macau. Moreover, ecological footprint analysis offers a scientific method for quantifying Macau's tourism sector's resource consumption and environmental impacts [6]. This analysis is particularly relevant for a compact city like Macau, with limited geographic space and a high dependence on external resource inputs. By integrating stakeholder theory, dialectics, and ecological footprint analysis, this study aims to provide a systematic theoretical framework to address Macau's over-tourism challenges. It seeks to explore a sustainable development path that balances social, economic, and environmental goals.

Based on the aforementioned social and theoretical context, this study focuses on the intricate interplay between over-tourism and sustainable development in Macau. It seeks to address the following core questions: What are the manifestations and underlying causes of over-tourism in Macau? Given its geographic and resource constraints, how can Macau achieve a dynamic balance between economic growth and environmental protection, as well as cultural preservation and social equity? What insights can Macau's governance experiences provide for other small-scale tourism destinations facing similar challenges globally? Through a multi-layered analysis, this study integrates theoretical depth with practical solutions to illuminate a sustainable pathway for Macau. By exploring the intersections of development and preservation, short-term gains, and long-term benefits, the research aims to address Macau's unique challenges and offer actionable strategies for other destinations seeking to navigate the complexities of over-tourism. This work aspires to contribute meaningfully to the discourse on sustainable tourism, paving the way for more resilient and balanced tourism development.

2. THEORETICAL UNDERPINNING

Macau's over-tourism problem is a concentrated reflection of conflicting interests among multiple stakeholders, making stakeholder theory an important tool for analyzing this phenomenon. According to this theory, the government, businesses, residents, and tourists serve as core stakeholders whose behaviors and interests collectively shape the current state of Macau's tourism development. In this system, the government assumes the central role of policy guidance and coordination, needing to drive economic growth while balancing social and environmental demands [7]. For example, dispersing tourist flows and optimizing urban space utilization can effectively alleviate the pressure of over-tourism on community resources and the environment. Businesses often face conflicts with sustainable development goals in their pursuit of economic benefits. However, by adopting green technologies and developing diversified tourism products, businesses can reduce their reliance on resources and enhance their competitiveness and market adaptability. Residents' quality of life is directly affected by tourism activities, and their support and participation are crucial to the implementation of policies. Collaboration between communities and the government can better protect cultural heritage and increase residents' recognition of and alignment with tourism development [8]. Tourists' behaviors and choices significantly influence the sustainability of tourism activities. By promoting green tourism and dispersed consumption patterns, tourists can effectively

reduce pressure on popular attractions and public resources. The coordination among multiple stakeholders provides a theoretical basis for Macau to explore sustainable tourism development.

However, Macau's over-tourism problem is not only a reflection of conflicting interests among stakeholders but also a deeper manifestation of the tension between development and preservation. This tension involves the unequal distribution of resources and the delicate balance between short-term economic gains and long-term sustainability. In this context, dialectics serves as a vital tool for analyzing such a complex phenomenon, offering a resolution based on the unity and dynamism of contradictions. Dialectics posits that development, preservation, short-term benefits, and long-term goals are not inherently irreconcilable but can coexist through thoughtful coordination [9]. Specifically, Macau's gaming industry has brought significant economic benefits to the city, yet it exists in stark tension with preserving cultural tourism values [10]. By integrating cultural tourism into the broader framework of the gaming industry, Macau can achieve both enhanced economic value and optimized resource utilization. This synergistic approach not only strengthens Macau's international competitiveness but also alleviates the structural imbalance caused by a reliance on a single tourism model. Through such coordinated development, Macau can navigate the delicate interplay between growth and preservation while laying the groundwork for a more resilient and sustainable future.

Dialectics also provides a pathway for balancing short-term interests with long-term benefits. In the short term, the growth of rapid visitor numbers can generate significant economic returns. However, an overreliance on tourist volume risks causing long-term damage to environmental and social resources. To address this contradiction, Macau can adopt smart tourism systems that leverage real-time data to monitor tourist behavior, optimize resource allocation, and enhance usage efficiency, thereby mitigating risks of ecological degradation. Simultaneously, Macau should gradually shift toward high-quality tourism, reducing its dependence on mass-market, low-end tourism. This transition would enable the city to develop a more balanced industrial structure that aligns economic growth with social and environmental sustainability. By integrating innovative technologies and strategic planning, Macau can achieve a holistic approach to development that fulfills its economic, social, and environmental objectives.

3. CORE ISSUES

What are the specific manifestations and causes of over-tourism in Macau? As a globally renowned tourist city, Macau has faced severe challenges related to over-tourism in recent years. Specific manifestations include extreme overcrowding in popular tourist sites such as historic districts, overburdened transportation infrastructure, declining urban environmental quality, and excessive resource consumption [11]. These issues significantly diminish the visitor experience and directly impact residents' living spaces and access to essential services. For instance, the surge in tourist numbers has intensified conflicts over shared public spaces, perpetually straining the city's carrying capacity. The causes of these issues are multifaceted. Macau's tourism industry is heavily centered around a gaming-based economic structure, which funnels visitors into a limited number of hotspots. Government policies prioritizing economic gains have failed to effectively disperse tourist flows. Additionally, Macau's small geographic area and limited natural resources exacerbate these negative effects, significantly increasing the complexity of tourism management. Understanding the root causes of these problems is essential for addressing the challenges posed by over-tourism in Macau.

What contradictions exist between economic growth and social-environmental protection in Macau? Macau inevitably faces social and environmental protection conflicts in its pursuit of economic growth. These contradictions are particularly evident in the tension between short-term economic gains and long-term sustainability goals. As a pillar industry, tourism has significantly contributed to Macau's economy and led to ecological degradation and resource depletion. For instance, urban development to accommodate growing numbers of tourists has intensified the consumption of land,

and valuable for benchmarking. Venice, as a UNESCO World Heritage Site, faces spatial constraints with its compact core areas and reliance on a water-based transportation system, conditions that closely resemble Macau's densely concentrated historic districts and limited urban space. For years, Venice has grappled with severe over-tourism challenges, particularly due to the overwhelming influx of cruise ship passengers, which has placed immense pressure on local infrastructure and significantly impacted residents' quality of life. Venice has implemented various strategies to address these issues, including introducing a tourism tax to regulate visitor flows, restrictions on large cruise ships docking near the city, and dispersal policies that redirect tourists to less congested areas. These measures have shown notable success in mitigating the strain caused by excessive visitor numbers and provide critical insights for Macau, particularly in managing tourist dispersal and enhancing the city's carrying capacity. Venice's experience highlights the importance of coordinated policies and innovative solutions in alleviating over-tourism pressures, offering Macau a practical framework to address its tourism challenges.

Bali, renowned for its natural landscapes and cultural appeal, exemplifies the intricate relationship between its ecosystem and tourism industry as a resource-limited small island. Through zoning policies, Bali has effectively controlled the development of ecologically sensitive areas. At the same time, promoting eco-tourism has allowed the island to balance economic benefits and environmental protection. One of Bali's most notable successes lies in its community-based tourism model. By positioning local communities at the heart of tourism development, Bali has preserved its cultural traditions and ensured a more equitable distribution of tourism revenues among its residents. This model is particularly significant for Macau, where the rapid expansion of gaming tourism has often sidelined the role of local communities. As a result, Macau has faced insufficient efforts in cultural heritage preservation and declining support from residents for tourism development. Bali's experience fostering collaboration between communities and the tourism sector offers Macau valuable lessons in balancing cultural preservation and economic growth. By integrating community participation into its tourism strategies, Macau can enhance cultural heritage protection, strengthen local engagement, and build a more sustainable and inclusive tourism model.

Macau can draw valuable lessons from the experiences of Venice and Bali. On the one hand, Venice's visitor flow management strategies, such as introducing tourism taxes and tourist dispersal policies, offer practical solutions to address Macau's excessive tourist concentration in its historic districts and gaming areas. On the other hand, Bali's success in expanding visitor options through eco-tourism and wellness tourism inspires Macau to diversify its tourism products. These approaches could help Macau reduce its reliance on a single tourism model while attracting a broader and more sustainable tourist demographic. Additionally, both Venice and Bali excel in cultural preservation and community engagement. Venice enhances visitors' appreciation of cultural experiences by protecting its historic and cultural districts. Meanwhile, Bali employs a community-based tourism development model, which safeguards local traditions and fosters residents' active participation and ownership in tourism initiatives. For Macau, these practices are particularly critical. They provide concrete pathways for mitigating over-tourism while balancing cultural preservation with economic benefits. By adopting such strategies, Macau can better manage its tourism challenges, align with sustainable development goals, and create a more harmonious relationship between its residents, visitors, and cultural heritage.

5. DISCUSSION

The causes and manifestations of Macau's over-tourism problem can be attributed to its geographic constraints, a singular tourism model, and shortcomings in policy governance. Macau, covering only 32.8 square kilometers, experiences severe pressure on its resources and spatial carrying capacity, with visitors overwhelmingly concentrated in the historic districts and gaming areas. This spatial congestion is exacerbated by Macau's heavy reliance on the gaming industry to drive economic

growth, resulting in a narrow tourism base with limited diversification in visitor demographics or spending patterns. Consequently, the lack of effective measures to distribute tourist flows or attract higher-quality consumption further compounds the issue. On the policy front, the absence of total visitor management mechanisms and effective dispersal strategies has significantly strained community resources, public infrastructure, and the environment. These combined factors manifest in traffic congestion, overexploitation of resources, declining residents' quality of life, and growing tensions between cultural preservation and economic development. Together, they highlight the urgent need for Macau to address these challenges through more comprehensive and sustainable tourism management strategies.

Achieving sustainable tourism development in Macau requires a comprehensive reassessment of its tourism model and the implementation of integrated measures to address the pressures of over-tourism and resource limitations. Building on its existing gaming tourism base, Macau should progressively diversify its offerings by introducing eco-tourism, cultural tourism, and wellness tourism. These initiatives would enrich the range of visitor experiences, attract higher-quality tourist demographics, and increase the overall value added from tourism activities. Such diversification would reduce Macau's reliance on the gaming industry and enhance its international competitiveness by promoting cultural and natural experiences unique to the region.

At the same time, optimizing the spatial and temporal distribution of tourist flows is crucial. By leveraging smart tourism technologies, Macau can monitor visitor behavior and real-time traffic data to develop more targeted management policies. For instance, directing tourists to non-core attractions and optimizing visitation schedules can alleviate the overloading of historical districts and gaming zones. Equally critical is the enhancement of infrastructure to support sustainable tourism. Macau must invest heavily in green energy solutions and environmentally friendly facilities, modernize its public transportation network, and promote walkable urban designs to minimize the ecological footprint of tourism activities. Fulfilling collaboration among government, community, and businesses is essential on the policy front. Encouraging resident participation in tourism development and cultural preservation initiatives can invigorate local communities and cultivate a sense of shared responsibility, positioning them as key contributors to sustainable tourism. Through these measures, Macau can address the challenges of over-tourism and establish itself as a model for sustainable tourism development that balances economic benefits, social equity, and environmental protection. This approach offers valuable insights and practical solutions for other global destinations grappling with similar challenges.

6. CONCLUSION

Macau's tourism industry is renowned for its highly concentrated gaming economy and historical and cultural attractions. However, the emergence of over-tourism underscores the deeper contradictions within its development model. These contradictions are not merely about the conflict between tourist inflow and the city's carrying capacity but also represent a broader tension between short-term economic gains and long-term sustainability goals [12]. Theoretically, this is a multi-stakeholder game, where the intertwined interests of the government, businesses, residents, and tourists collectively shape the trajectory of Macau's tourism sector. Stakeholder theory suggests that dynamic equilibrium can be achieved only through collaboration and the alignment of diverse interests in a resource-constrained environment [13]. In this context, effective governance mechanisms and strategic interventions are essential to balance the competing demands of growth and preservation, ensuring the sustainability of Macau's tourism industry.

The case of Macau highlights the tension between development and preservation, a dynamic particularly evident in its heavy reliance on a single-industry economic model centered around gaming [10]. While the prosperity of the gaming industry has generated substantial economic benefits for the city, it has also significantly overshadowed the potential of cultural tourism. The overcrowding

of historic districts, the decline in residents' quality of life, and the lack of cultural preservation efforts underscore the unsustainable nature of Macau's tourism development. Ecological footprint analysis reveals a severe imbalance between Macau's resource consumption and the environmental pressures it faces [6]. This imbalance constrains Macau's long-term development capacity and poses a significant threat to its socio-ecological systems.

In addressing this conflict, dialectics offers Macau a crucial theoretical framework for rethinking its development trajectory. Dialectics emphasizes that development, preservation, short-term gains, and long-term sustainability are not inherently incompatible but can coexist through dynamic adjustments [9]. For instance, by integrating cultural tourism into the broader framework of the gaming industry, Macau can overcome the limitations of its singular economic model, enhance its international competitiveness, and simultaneously foster the preservation and promotion of cultural values. This synergistic approach to cultural and economic development mitigates the negative impacts of over-tourism and provides an innovative pathway for Macau's sustainable growth. Such a strategy redefines the relationship between economic priorities and cultural preservation, offering a model where growth supports and amplifies heritage rather than undermining it.

Moreover, Macau can draw on the successful experiences of other tourism destinations to manage visitor flows and optimize spatial planning. Venice, for example, has implemented tourism taxes and cruise ship restrictions to alleviate the overburdening of its core areas, offering valuable insights for Macau in developing visitor dispersal strategies. Similarly, Bali's focus on community engagement and eco-tourism development has achieved a balance between cultural preservation and economic growth, providing important lessons for Macau in empowering local communities and diversifying its tourism products. By leveraging smart tourism technologies, Macau can monitor visitor behavior and optimize resource efficiency, enabling more precise and adaptive visitor management strategies. From a sociological perspective, Macau's over-tourism challenges are not merely about the direct interaction between tourists and resources; they also reflect deeper transformations in community, culture, and ecology under the influence of globalization [14]. As guardians of cultural heritage, residents play a crucial role in achieving long-term sustainability. Their recognition of and support for tourism development is essential [15]. By empowering communities, ensuring they benefit from tourism revenues, and involving them in decision-making processes, Macau can achieve a more profound balance between cultural preservation and economic development. This approach addresses immediate challenges and establishes a foundation for a more sustainable and inclusive tourism future.

Macau's case offers significant practical insights for other global tourism destinations. In resource-constrained environments, the tension between development and preservation is not necessarily a zero-sum game; instead, it can be resolved through policy innovation, technological support, and stakeholder collaboration to achieve a win-win outcome. Macau's experience demonstrates that a dynamic balance can be established among tourists, residents, and resources through a systematic, multidimensional governance framework, facilitating the synergy of social, economic, and environmental development. This approach opens new possibilities for Macau's sustainable future and serves as a theoretical and practical reference for other cities and regions facing similar challenges. By aligning development priorities with resource limitations and engaging stakeholders in the process, Macau illustrates how destinations can navigate the complexities of over-tourism while laying the foundation for long-term sustainability. Its practices underline the importance of adaptability, collaboration, and a forward-looking perspective, offering valuable lessons for the global discourse on sustainable tourism.

CONFLICTS OF INTEREST

The authors declare that they have no conflict of interest.

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