



Assessing the Impacts of Overtourism in Bali: Environmental, Socio-Cultural, and Economic Perspectives on Sustainable Tourism



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Abstract: Research on sustainable tourism in Bali has underscored the intricate balance required between economic development and environmental and social stewardship. A range of methodological approaches has been utilized to evaluate these dynamics. Quantitative assessments, often through structural equation modeling, have been conducted to analyze sustainable tourism practices, focusing on economic, social, and environmental dimensions. Meanwhile, qualitative approaches, including systematic literature reviews, semi-structured interviews, and participatory observation, have provided critical insights into the layered complexities of sustainable tourism in Bali's culturally rich settings. Mixed-methods research, integrating quantitative tourist data with qualitative insights, offers a more comprehensive understanding of overtourism's multifaceted impacts. Key findings indicate that while progress has been achieved in implementing sustainable tourism practices, considerable challenges remain. These challenges primarily include balancing the economic benefits of tourism with the urgent need for environmental conservation and ensuring equitable distribution of benefits among local communities. The development of sustainable tourism has proven complex, necessitating context-sensitive approaches and inclusive stakeholder engagement. Community-based strategies have shown effectiveness, blending environmentally friendly practices with cultural preservation and local empowerment. Comparative studies, such as those between Bali and North Sumatra, underscore both the positive economic outcomes of sustainable tourism initiatives and common obstacles, such as infrastructure demands and resource management. The implications for policymakers emphasize the critical role of community participation and comprehensive planning in achieving sustainable tourism. Empowering local stakeholders through participatory governance frameworks is essential to preserve cultural integrity and enhance resource stewardship, thereby fostering a resilient tourism industry that supports both environmental sustainability and local well-being.

Keywords: Overtourism; Moratorium; Social-cultural impacts; Environmental damage; Economy

1. Introduction

Tourism has become one of the sectors that contributes the most to the national economy. However, the question that arises is whether the number of tourist arrivals should continue to increase. While some areas still need an increase in tourist visits to increase income and community welfare, others have reached a critical point where increasing tourist numbers can cause pressure on infrastructure and the environment (Pitanatri, 2021). Hotel development is also a complex issue. While hotel development can improve accessibility and comfort for tourists, it can also cause changes in the ecosystem and increase the cost of living for local communities. Therefore, it is important to ensure that hotel development is carried out sustainably and does not damage the environment (Dianthy et al., 2023). However, limited carrying capacity is a major challenge in tourism development. Many areas still have inadequate infrastructure and limited natural resources. This can lead to conflicts of interest

between stakeholders and negative impacts on the environment. Therefore, it is important to develop a sustainable tourism development strategy and consider the needs of the local community (Nggini, 2019). Tourism development must be carried out wisely. The number of tourist arrivals must be considered based on local carrying capacity; hotel development must be carried out sustainably; and development strategies must consider the needs of the local community to avoid negative impacts on the environment and society. Thus, tourism can be a source of sustainable income and does not damage the environment (Koens et al., 2018; Marsiglio, 2017).

As for the threat of overtourism in Bali, with a focus on increasing tourists, environmental issues, and social issues, several important steps and findings can be identified. First, the increase in tourists is a major concern. Data shows that from January to April 2024, Bali received 1,847,735 foreign tourists, an increase of 7.24% compared to the previous month. In July 2024, the number of foreign tourists reached 625,665, recording a significant increase of 20.11% compared to the previous month. However, this surge has an impact on existing infrastructure; roads and transportation become very busy, causing severe traffic congestion (Mulia, 2021; Utama et al., 2021).

Furthermore, environmental issues arising from the increasing number of tourists are very serious. Environmental degradation can be seen through air and noise pollution and ineffective waste management. Luxury accommodation in Bali is known to use 65% of the total available water, leaving little for local needs. In addition, ecosystems such as coral reefs and rice fields are damaged by excessive numbers of visitors and inadequate infrastructure, causing habitat destruction and natural resource degradation (Sutrisnawati & Purwahita, 2018). On the other hand, social problems also increase with the increase in tourists. Cultural damage becomes a real issue when some tourists' behavior does not respect local traditions, such as walking naked in holy places or arguing with locals regarding religious processions. These impacts worsen the quality of life of local communities as the cost-of-living increases and resources are increasingly directed to the tourism sector (Fattah, 2023).

To address these challenges, several solutions and mitigations are being implemented. The government and the private sector are investing in infrastructure development to reduce traffic congestion through road expansion and improving public transportation. Environmental initiatives are also being developed, including recycling programs and energy-from-waste projects, to reduce pollution. In addition, promotion of sustainable tourism is a focus by providing environmentally friendly accommodation and education about preserving natural resources (Siahay et al., 2023). Overall, the threat of overtourism in Bali shows that although the increase in the number of tourists brings various environmental and social challenges, there are real efforts to reduce these negative impacts through various sustainable development initiatives (Sutanto & Setiadi, 2020).

This study aims to analyse the factors of the threat of overtourism by analyzing the number of tourist arrivals and their impacts on local infrastructure and resources. In addition, environmental damage caused by tourism, such as pollution, deforestation, and ecosystem changes, was identified and analyzed in this study. The impact of cultural degradation caused by tourism, including the loss of local traditions, changes in social values, and the decline in cultural uniqueness, was also analyzed (Vandarakis et al., 2023).

This study investigates various perspectives, including economic, environmental, and cultural. Focus was given to the economic impact, environmental damage, and the influence of tourism on local culture. Thus, this study can develop effective management strategies to overcome the negative impacts of overtourism, such as sustainable infrastructure development, empowerment of local communities, and sustainable tourism promotion. In addition, this study also identifies solutions that can be implemented to reduce the negative impacts of tourism and improve the quality of tourist experiences (González-Guerrero et al., 2016).

2. Theoretical Framework

The Tourist Area Life Cycle (TALC) model, formulated by Richard Butler, serves as a pivotal analytical tool for understanding the dynamics of overtourism in destinations like Bali. This model delineates the evolution of tourist areas through six distinct phases: exploration, involvement, development, consolidation, stagnation, and decline/renewal. Initially, during the exploration phase, Bali attracted a niche group of adventurous travelers seeking authentic cultural experiences, characterized by minimal infrastructure and a harmonious relationship between visitors and locals. As the interest grew, the involvement phase emerged, wherein local communities began to engage more actively in tourism, establishing businesses such as guesthouses and restaurants to cater to increasing visitor numbers. The development phase, which commenced in the 1970s, marked a significant transformation as Bali became a prominent international tourist hotspot, accompanied by substantial investments in infrastructure and amenities. However, this rapid growth transitioned into the consolidation phase, where concerns regarding sustainability and cultural preservation became pronounced due to the overwhelming influx of tourists (Butler, 1991; Dodds & Butler, 2019).

Currently, Bali is grappling with stagnation, facing critical challenges such as overcrowding and environmental degradation. In response to these pressing issues, stakeholders can leverage the TALC model to recognize that various regions within Bali may be at different stages of this cycle, necessitating tailored strategies that address localized needs. Engaging local communities in tourism planning is essential to alleviate conflicts and promote sustainable practices that honor the island's rich cultural heritage. Continuous monitoring and adaptive

management of tourism strategies can enable Bali to innovate its offerings and enhance infrastructure while effectively addressing the complexities associated with overtourism (González-Guerrero et al., 2016; Koens et al., 2018).

2.1 TALC Concept

The TALC framework is particularly relevant for analyzing overtourism due to its comprehensive approach to understanding the evolution of tourist destinations. The model illustrates how these destinations progress through defined phases, with each characterized by unique challenges and opportunities. Overtourism typically manifests during the stagnation or decline stages when destinations struggle to attract new visitors while contending with issues like environmental degradation and competitive pricing pressures (Dodds & Butler, 2019). Furthermore, TALC facilitates an analysis of various factors influencing tourism development, such as facility quality, promotional strategies, and economic impacts, which often exacerbate overtourism when being inadequately managed (Akdu & Ödemiş, 2018). By comprehensively understanding these phases and their determinants, stakeholders can devise effective tourism development strategies aimed at rejuvenating destinations through improved facilities and increased community involvement (Breakey, 2006).

2.2 Changing the Paradigm of Tourism Development

Overtourism has emerged as a critical concern across multiple domains, including tourism management, economics, and environmental sustainability. The concept of tourism carrying capacity is instrumental in this context; it defines the maximum number of tourists a destination can accommodate without inflicting harm on its physical, economic, or socio-cultural environments (Anderson et al., 2014). Exceeding this threshold can lead to severe consequences such as pollution, infrastructure strain, and socio-cultural disruption (Pitana & Gayatri, 2005). Addressing overtourism necessitates a sustainable approach that enhances the quality of life for residents while preserving environmental integrity. Vandana Shiva's ecofeminist perspective offers valuable insights into combating overtourism by advocating for a return to feminine principles that prioritize life-affirming practices (Hariyati & Tjahjono, 2022). This paradigm shift emphasizes local wisdom and equitable power dynamics between tourists and host communities. Additionally, the notion of hype-overtourism highlights efforts to restore community presence while promoting longer tourist engagement through unique experiences. Thus, tackling overtourism requires a multidimensional analysis encompassing environmental, social, economic, and cultural factors alongside sustainable tourism management strategies (Sutanto & Setiadi, 2020). To mitigate overtourism effectively, several strategic interventions can be implemented by government bodies, tourism managers, and local communities as follows:

- a) Regulating the number of tourists: Implementing daily visitor quotas or seasonal tourism taxes can help alleviate overcrowding while protecting local environments (Suasapha, 2022).
- b) Promoting sustainable practices: Emphasizing renewable energy use, waste management solutions, and community involvement in decision-making processes can minimize negative impacts on both culture and environment (Suasapha, 2022).
- c) Diversifying destinations: Encouraging exploration of lesser-known areas can distribute tourist traffic more evenly across regions (Liao et al., 2022).

Moreover, fostering local community participation in tourism planning enhances acceptance and ensures that development aligns with community needs, striking a balance between economic growth and cultural preservation (Chafizah et al., 2024). Educating tourists about ethical travel practices is also crucial; raising awareness about their impact on local environments encourages responsible behaviours during their visits (Liao et al., 2022). By implementing these strategies collectively, stakeholders can work towards achieving sustainable tourism that benefits all parties involved while safeguarding Bali's unique cultural heritage for future generations.

3. Methodology

This study employs a qualitative research design to investigate the impacts of overtourism on key tourist locations in Bali, specifically focusing on Ubud, Kuta, and Seminyak. The primary aim is to understand the environmental, socio-cultural, and economic effects that arise from the increasing number of visitors (Subadra & Hughes, 2022).

Data collection involves a combination of secondary data sources and direct observation. A comprehensive literature review was conducted to gather existing studies on tourism in Bali, including academic articles, government reports, and previous research. This was supplemented by an analysis of statistical data on tourist visits to contextualize visitor trends and patterns (Li et al., 2020). Field observations were conducted at Ubud, Kuta, and Seminyak to document real-time conditions associated with overtourism. These observations focus on

specific indicators such as traffic congestion, pollution levels, and the interactions between tourists and local residents (Hair et al., 2007).

Descriptive qualitative methods were utilized in this study for data analysis, emphasizing direct observation to systematically record and identify patterns in environmental conditions and socio-cultural interactions. This approach facilitates the collection of real-time data on how overtourism affects local ecosystems and community dynamics. Additionally, findings from the literature review were synthesized with observational data to explore key themes like the relationship between tourism density and resident satisfaction, as well as both positive and negative economic impacts of tourism on local communities (Rahardjo, 2011). By integrating these methodologies, the study aims to provide a comprehensive understanding of the multifaceted effects of overtourism, including environmental degradation, economic dependency, and shifts in community sentiment. Ultimately, this analysis seeks to inform sustainable tourism practices that balance the needs of tourists with the well-being of local residents (Green et al., 2007; Moleong, 2006; Plano Clark et al., 2008).

The findings indicate significant environmental impacts due to increased tourist activities, such as heightened pollution levels, escalating water crises, and notable ecosystem degradation that threaten local biodiversity and natural resources. Socio-culturally, tensions have emerged between tourists and local communities, with residents experiencing lifestyle changes that disrupt traditional practices and social cohesion. Economically, the influx of tourists has led to shifts in the local economy, creating competition for jobs as locals vie with tourists for informal work opportunities, ultimately straining community resources and exacerbating inequalities. This complex interplay of environmental, socio-cultural, and economic factors underscores the urgent need for sustainable tourism practices that prioritize local well-being and ecological preservation (Oktavianti, 2013; Riswanto et al., 2023; Yakin, 2017).

4. Results and Discussion

4.1 Results

4.1.1 Impact of overtourism on the environment

The impact of overtourism in Bali presents a complex challenge that intertwines environmental degradation, socio-cultural disruption, and economic strain. As the island continues to attract millions of tourists annually, the consequences of this influx become increasingly evident. For instance, the tourism sector's demand for water is staggering, with luxury hotels reportedly consuming up to 65% of Bali's total water supply, which significantly hampers local access to this vital resource. This over-extraction has led to severe water shortages for residents and has exacerbated drought conditions, threatening both agriculture and daily life (Wahyuni et al., 2022).

In addition to water scarcity, the environmental footprint of tourism manifests through pollution and habitat destruction. The rise in visitor numbers has resulted in increased waste generation and inadequate waste management systems, leading to plastic pollution that contaminates land and marine environments. Coral reefs, a critical component of Bali's ecosystem, suffer from damage due to unsustainable tourist activities and poor infrastructure development. The degradation of these natural resources not only threatens biodiversity but also undermines the very attractions that draw tourists to the island (Sulistiyadi et al., 2021).

Culturally, the pressures of overtourism have led to significant shifts in local traditions and social dynamics. Instances of disrespectful behavior by tourists, such as inappropriate conduct at sacred sites, have sparked tensions between visitors and residents, eroding the cultural fabric of Balinese society. Furthermore, as local communities increasingly cater to tourist demands, there is a risk of losing cultural authenticity and traditional practices (Sutanto & Setiadi, 2020).

Economically, while tourism generates substantial revenue for Bali, it also creates disparities within local communities. Many residents find themselves competing for low-wage jobs in the tourism sector, leading to economic inequalities and a reliance on an unstable industry that can fluctuate with global travel trends. This dependency can strain community resources and diminish overall quality of life (Sutanto & Setiadi, 2020). To address these challenges, it is crucial for stakeholders, including government bodies, local communities, and the private sector, to adopt sustainable tourism practices that prioritize environmental preservation and community well-being. Strategies, such as regulating tourist numbers, promoting eco-friendly accommodations, and engaging local communities in decision-making processes, are essential for fostering a more balanced approach to tourism development (Breakey, 2006).

By implementing these measures, Bali can work towards mitigating the adverse effects of overtourism while ensuring that both its natural beauty and cultural heritage can be preserved for future generations. Figure 1 shows the various negative impacts caused by overtourism on the environment. A large number of tourists causes the depletion of natural resources, such as water and land, which are used for the construction of tourism infrastructure, such as hotels and other facilities. This also results in environmental pollution, such as plastic waste, and the use of chemical fertilizers damages the soil and ecosystem. In addition, soil erosion and forest damage occur due to dense traffic and tourism activities, and damage to historic buildings occurs due to vandalism and wear and tear.

Finally, physical and environmental damage occurs due to disturbances to the lives of local wildlife and flora, causing ecosystem damage and loss of biodiversity (Butler, 1991).



Figure 1. The impact of overtourism on the environment (Sutanto & Setiadi, 2020)

4.1.2 Impact of overtourism on socio-culture

The socio-cultural impacts of overtourism in Bali are profound and multifaceted, significantly affecting local culture, values, and traditions. As the island has transformed into a global tourist hotspot, the influx of visitors has led to a marked shift in the dynamics between tourists and local communities. One of the most pressing issues is the erosion of cultural identity. Traditional customs and practices, which have been meticulously preserved over generations, are increasingly commodified to cater to tourist expectations. This commercialization often distorts authentic cultural expressions, as local artisans and performers modify their crafts and performances to align with what they believe can attract tourists rather than staying true to their cultural roots (Picard, 1996; Putra & Hitchcock, 2005).

Figure 2 depicts Penglipuran, a traditional village situated in Bangli Regency, Bali, which is renowned for its stunning traditional architecture and the ongoing preservation of Balinese culture by its residents. This village has gained international acclaim as one of the cleanest villages in the world, attributed to the community's commitment to cleanliness and environmental sustainability. However, Penglipuran is currently grappling with significant challenges due to a surge in tourist numbers. While tourism provides economic advantages, it also leads to detrimental effects, such as environmental damage, where increased visitors can harm village infrastructure and the surrounding natural environment, and a potential loss of cultural identity, as the influx of tourists risks diluting local traditions and lifestyles through commercialization (Mulia, 2021). Moreover, the behavior of some tourists can be disrespectful to local customs and sacred sites, leading to tensions between visitors and residents. Instances of tourists engaging in inappropriate conduct, such as disregarding dress codes at temples or participating in rituals without understanding their significance, can alienate locals and diminish the sanctity of cultural practices. Such actions not only disrupt community harmony but also contribute to a growing sentiment among residents that their culture is being exploited for profit (Kartajaya, 2002; Kotler, 2005).



Figure 2. Overtourism in the Penglipuran village in Bali (Mulia, 2021)

The impact on social values is equally significant. As tourism becomes the primary economic driver, there is a shift in priorities among local populations. Younger generations may prioritize financial gain from tourism-related activities over traditional agricultural practices or artisanal crafts, which can lead to a decline in these time-honored skills. This shift can create generational divides, where older community members feel disconnected from the younger populace who are more inclined toward tourism-oriented lifestyles (Li et al., 2022). Additionally, the rapid development of infrastructure to support tourism, such as hotels, restaurants, and entertainment venues, often comes at the expense of communal spaces that are vital for social interaction and cultural expression. The loss of these spaces can weaken community bonds and diminish opportunities for cultural transmission between generations. As traditional gatherings and celebrations become overshadowed by tourist-centric events, the essence of Balinese culture has the risk of being diluted (Santoso et al., 2019).

In summary, the socio-cultural impacts of overtourism in Bali extend beyond mere economic considerations; they fundamentally challenge the integrity of local culture and community cohesion. The need for sustainable tourism practices that respect and preserve Balinese traditions while providing economic benefits is paramount. Engaging local communities in tourism planning and decision-making processes can help ensure that development aligns with their cultural values and fosters a more equitable relationship between tourists and residents. By prioritizing cultural preservation alongside economic growth, Bali can strive towards a more balanced approach that honors its rich heritage while accommodating the realities of tourism (Butler, 1991; Williams & Putra, 1997).

4.1.3 Impact of overtourism on the economy

The economic impacts of overtourism in Bali extend beyond mere tourist numbers, significantly affecting local livelihoods, businesses, and economic inequality. While the influx of tourists has undeniably boosted the economy, it has also created a paradox where local communities often struggle to reap the benefits. Many residents find themselves in low-paying jobs within the tourism sector, competing with each other for informal work opportunities that are often insufficient to cover rising living costs. This competition exacerbates economic inequality, as wealth generated by tourism tends to concentrate in the hands of a few large businesses and foreign investors, leaving smaller local enterprises at a disadvantage (Wahyuni et al., 2022).



Figure 3. Impact of overtourism on the economy (Wahyuni et al., 2022)

Figure 3 illustrates the multifaceted impacts of overtourism on the economy, highlighting several critical issues. As tourism increases, land prices rise, making it difficult for local residents to afford housing, leading to displacement of the community. This economic strain is compounded by inflation, as the demand for goods and services escalates, resulting in higher prices for everyday necessities. Additionally, the influx of tourists contributes to traffic congestion, particularly on main roads, creating challenges for both locals and visitors. These factors collectively illustrate how overtourism can disrupt local economies and communities, ultimately diminishing the quality of life for residents while transforming the economic landscape of popular destinations (Wahyuni et al., 2022).

Furthermore, the rapid development of tourism infrastructure can lead to increased property prices and living expenses, making it difficult for locals to afford housing and basic necessities. As traditional livelihoods, such as agriculture and artisanal crafts, decline due to the overwhelming focus on tourism, communities face the risk of losing their cultural identity and economic independence (Sutawa, 2012). The reliance on tourism also renders local economies vulnerable to fluctuations in visitor numbers, as seen during global crises like the COVID-19 pandemic, which highlights the fragility of an economy overly dependent on tourism. To ensure that tourism contributes positively to local economies, it is essential to implement sustainable practices that prioritize equitable distribution of resources and empower local communities to participate meaningfully in the tourism industry (Oka Suryawardani et al., 2016).

4.2 Discussions

The broader implications of the research on overtourism in Bali extend well beyond the immediate environmental, socio-cultural, and economic impacts discussed. This study highlights a critical need for a paradigm shift in how tourism is approached, emphasizing the importance of sustainable practices that prioritize the well-being of local communities alongside economic growth. As Bali grapples with the consequences of overtourism, it serves as a microcosm for other popular tourist destinations facing similar challenges worldwide (Pitana & Diarta, 2009; Oka Suryawardani et al., 2016). The findings underscore the necessity for policymakers to adopt holistic strategies that integrate community involvement, environmental stewardship, and cultural preservation into tourism planning. By prioritizing local engagement in decision-making processes, stakeholders can create tourism models that not only mitigate adverse effects but also empower residents to benefit from their cultural heritage and natural resources. Furthermore, this research calls attention to the interconnectedness of global tourism trends and local realities, suggesting that sustainable tourism practices must be tailored to fit the unique contexts of each destination (Barna et al., 2011; Paulina, 2021).

The lessons learned from Bali can inform broader discussions about responsible travel and the need for tourists to engage ethically with host communities. Ultimately, fostering a sustainable tourism framework in Bali could serve as a blueprint for other regions, promoting resilience and sustainability in the face of increasing global travel pressures while ensuring that local cultures and environments can be preserved for future generations (Hermawan, 2019). The "moratorium on new hotel construction" in Bali is a significant policy initiative aimed at addressing the challenges posed by overtourism and its detrimental effects on the island's environment and local communities. This policy entails a temporary halt on the approval and development of new hotels and large-scale tourist accommodations, allowing for a reassessment of the current tourism infrastructure and its impact on Bali's ecological and cultural landscape. The moratorium is implemented by local government authorities, who are tasked with evaluating existing tourism capacities, environmental sustainability, and community needs before considering any new developments (Pena et al., 2013).

Enforcement of this moratorium involves a multi-faceted approach that includes regular inspections of proposed sites, public consultations with local communities, and assessments of environmental impact reports. By prioritizing sustainable practices, the policy aims to ensure that any future tourism development aligns with the principles of ecological preservation and cultural integrity. This proactive measure also seeks to alleviate pressure on local resources, as the existing infrastructure is often strained by the high volume of tourists. The moratorium serves not only as a regulatory framework but also as a call for government officials, business owners, and community members to collaborate in creating a more sustainable tourism model that respects Bali's unique cultural heritage while addressing the urgent challenges posed by overtourism. Overall, this policy reflects a growing recognition of the need for balanced development that safeguards both the environment and the livelihoods of local residents (Pitana & Gayatri, 2005). The role of the local community in addressing the challenges of overtourism in Bali is crucial and multifaceted, serving as both a stakeholder and a key agent of change. Local communities are often on the front lines of the impacts of tourism, experiencing firsthand the benefits and burdens that come with increased visitor numbers. Their involvement in tourism planning and decision-making processes is essential for ensuring that development aligns with their cultural values and economic needs. Community-based tourism initiatives have emerged as effective strategies, allowing locals to showcase their culture and traditions while directly benefiting from tourism revenue. These initiatives not only empower residents economically but also foster a sense of pride in their heritage, encouraging the preservation of local customs and practices that might otherwise be overshadowed by mass tourism (Martoyo, 2021).

Moreover, local communities play a vital role in environmental stewardship. Their traditional knowledge and practices can contribute significantly to sustainable resource management, helping to mitigate the adverse effects of tourism on Bali's delicate ecosystems. Engaging locals in conservation efforts, such as beach clean-ups or reforestation projects, can enhance community bonds while promoting environmental awareness among both residents and tourists. Additionally, the community's insights into the carrying capacity of their environment are invaluable; they can provide critical information on how many visitors can be accommodated without compromising local resources or quality of life (Krismawintari & Utama, 2019; Nurhidayati & Fandeli, 2012). However, for these community-driven approaches to be successful, there must be genuine support from government authorities and private sector stakeholders. Policies that prioritize local participation in tourism development are essential for creating equitable economic opportunities and ensuring that the benefits of tourism are distributed fairly among all community members. By fostering collaboration between local communities, government agencies, and tourism businesses, Bali can move towards a more sustainable tourism model that respects both its cultural heritage and natural environment. Ultimately, empowering local communities not only enhances their livelihoods but also ensures that the unique identity of Bali can be preserved amidst the pressures of globalization and mass tourism (Abd Aziz & Ariffin, 2009).

To effectively address the challenges posed by overtourism in Bali, a more persuasive overall argument must emphasize the necessity of adopting a comprehensive and sustainable tourism framework that prioritizes the well-

being of local communities, environmental preservation, and cultural integrity. This approach should advocate for a balanced tourism model that recognizes the limits of Bali's carrying capacity, ensuring that tourism development does not compromise the island's natural resources or the quality of life for its residents. Key to this argument is the recognition that sustainable tourism is not merely a regulatory requirement but a moral imperative that aligns economic growth with social responsibility (Pitana & Diarta, 2009; Rosalina & Putra, 2017). Implementing measures such as visitor quotas, community-based tourism initiatives, and educational programs for tourists can help mitigate the negative impacts associated with high tourist volumes. Furthermore, engaging local communities in decision-making processes is essential to empower them and ensure that their voices are heard in shaping tourism policies. This participatory governance model not only enhances cultural authenticity but also fosters a sense of ownership among residents, allowing them to benefit directly from tourism while preserving their heritage (Akdu & Ödemiş, 2018).

Additionally, promoting eco-friendly practices within the tourism sector can help alleviate environmental degradation, encouraging businesses to adopt sustainable operations that minimize waste and conserve resources. The argument should also highlight the importance of diversifying tourist attractions to distribute visitor traffic more evenly across the island, reducing pressure on overburdened areas while promoting lesser-known regions (Fitriani et al., 2018). Ultimately, addressing overtourism in Bali requires a holistic and collaborative approach that involves the government, local communities, businesses, and tourists themselves working together to create a resilient tourism industry that respects both the environment and the cultural fabric of the island. By framing the discussion around these broader implications, the study can present a compelling case for transformative changes in how tourism is managed in Bali, ensuring its sustainability for generations to come (Utama & Trimurti, 2021).

5. Conclusions and Recommendations

5.1 Conclusions

The impacts of overtourism in Bali can be categorized into three main areas: environmental, socio-cultural, and economic.

i) Environmental impacts

Overtourism has led to significant environmental degradation in Bali.

- Water and soil pollution: The tourism industry's excessive water use contributes to pollution, resulting in decreased water and soil quality and exacerbating drought conditions. This is compounded by the loss of approximately 1,000 hectares of agricultural land annually, which threatens food security.

- Ecosystem damage: Increased tourist traffic has resulted in the degradation of natural ecosystems, including coral reefs and rice terraces, further stressing biodiversity.

- Air pollution: The surge in visitors has led to increased air pollution, negatively impacting local air quality and contributing to climate change.

ii) Socio-cultural impacts

The rise in tourist numbers has generated various social challenges.

- Housing affordability: A 30% increase in property prices has made housing increasingly unaffordable for locals.

- Infrastructure strain: Public infrastructure is under severe pressure, exemplified by Ngurah Rai Airport accommodating 12.5 million passengers in 2022, a 231% increase from the previous year.

- Human rights concerns: Workers in the tourism sector often face poor working conditions and low wages, raising issues of potential human rights violations.

iii) Economic impacts

While tourism has spurred economic growth, it also presents sustainability challenges.

- Post-pandemic recovery: In early 2024, Bali welcomed nearly 1.85 million international visitors, indicating a recovery. However, this increase places additional pressure on local resources.

- Sustainability threats: The government has initiated measures like a moratorium on new hotel developments to mitigate negative impacts, but ongoing challenges remain regarding sustainable tourism management.

In summary, this study highlights urgent challenges that require coordinated efforts from stakeholders. Addressing these issues necessitates a more nuanced understanding of local contexts and the implementation of sustainable tourism practices that respect cultural heritage while safeguarding environmental integrity.

5.2 Recommendations and Implementation Strategies

To combat overtourism effectively, targeted strategies must be developed across environmental socio-cultural, and economic dimensions.

i) Environmental strategies

- Resource management policy: Policies that promote sustainable resource use, including tariffs for high water

consumption and incentives for eco-friendly practices among businesses, can be implemented.

- Tourism zoning: Zoning regulations can be established to manage visitor capacities in different areas, alleviating pressure on heavily trafficked sites while promoting lesser-known destinations.

- Environmental education programs: Initiatives aimed at educating tourists about environmental protection practices through social media campaigns and partnerships with local businesses can be launched.

- Cleanup initiatives: Regular community clean-up events can be organized to engage both locals and tourists in preserving Bali's natural beauty.

ii) Socio-cultural strategies

- Strengthening worker rights: Regulations can be developed to protect tourism workers' rights, ensuring fair wages and safe working conditions through regular audits.

- Promoting local culture: Tourism programs that celebrate Balinese culture, such as arts festivals, can be created, which can enhance visitor experiences while preserving cultural integrity.

- Community engagement: Local residents can be involved in tourism planning processes to ensure they benefit directly from tourism development.

- Affordable housing initiatives: Programs that provide affordable housing options for locals can be established to mitigate gentrification pressures.

iii) Economic strategies

- Economic diversification: Development outside the tourism sector can be encouraged by promoting sustainable agriculture and creative industries to reduce dependency on tourism.

- Infrastructure investment: Resources can be allocated to enhance public infrastructure that can accommodate increased tourist numbers sustainably.

- Support for local small and medium enterprises (SMEs): Incentive programs for SMEs can be implemented to encourage unique local offerings that complement the tourism experience without overwhelming resources.

These recommendations aim to foster a balanced approach to tourism that prioritizes sustainability while enhancing economic opportunities for local communities. By engaging the government, industry leaders, locals, and tourists in collaborative efforts, Bali can work towards a more sustainable future that respects its rich cultural heritage and natural environment.

Author Contributions

Conceptualization and Research Design: by I Gusti Bagus Rai Utama, I Nengah Suardhana, I Gede Sutarya, Ni Putu Dyah Krismawintari. Data Collection and Analysis by I Gusti Bagus Rai Utama, I Nengah Suardhana, I Gede Sutarya, Ni Putu Dyah Krismawintari. Writing and review by all authors contributed equally.

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Data Availability

The data used to support the research findings are available from the corresponding author upon request.

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Conflicts of Interest

The authors declare no conflict of interest.

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