

Phenomenography of Sustainable Tourism in Luxury Hotels

Adityo Wicaksono

*National Research and Innovation Agency, Indonesia
aditoo4@brin.go.id*

Firman Tri Ajje

*National Research and Innovation Agency, Indonesia
firmoo4@brin.go.id*

Agustini Rahayu

*Ministry of Creative Economy, Indonesia
ayu@indonesia.travel*

Dini Andriani

*Ministry of Creative Economy, Indonesia.
dini2702@gmail.com*

Angga Wijaya Holman Fasa

*Ministry of Creative Economy, Indonesia
awijayahf@gmail.com*

Mahardhika Berliandaldo

*Ministry of Tourism, Indonesia
mahardhika.berliandaldo@kemenpar.go.id*

Juprianto

*National Research and Innovation Agency, Indonesia
juproo1@brin.go.id*

Contemporarily, tourism stakeholders (especially luxury hotels) are translating the sustainable tourism concept into various understandings. Hence, it is difficult to see the best ways to actualize the concept and achieve significant outcomes. Therefore, it is necessary to capture the current understanding empirically. To capture these understandings, this paper employs a phenomenographic approach, involving 17 luxury hoteliers in Indonesia. As a result, two contributions are presented in this paper. First, this study distinguishes three distinct understandings for the actualization of sustainable tourism, namely the (1) complying, (2) engaging, and (3) advocating stage. Second, a stage-gate model is proposed for the practical application of the gradual actualization of sustainable tourism in luxury hotels.

Keywords: sustainable tourism, luxury hotel, phenomenography, hotelier, sustainability.



<https://doi.org/10.26493/2335-4194.18.167-182>

Introduction

The concept of sustainable tourism has gained significant attention in recent years as the hospitality industry grapples with the need to balance the demands of high-end clientele with the imperative of environmental responsibility. The rise in interest is

fuelled in part by customer awareness of sustainability issues, driving luxury hotels to implement a variety of sustainability initiatives to improve their brand image and attract environmentally conscious guests (Moscardo, 2017). Existing research suggests that the actualization of sustainable tourism can bring bene-

ficial impacts to the hotel industry, such as reducing operational costs, maintaining the attractiveness of natural landscapes, meeting eco-conscious tourists' demands, and enhancing social performance (Ayuso, 2006; Moscardo, 2017; Park et al., 2021; Tölkes, 2018). Additionally, the rising trend reflects a broader shift in the luxury sector, with companies now recognizing that sustainability and luxury can coexist, albeit with unique challenges in terms of maintaining the opulence and exclusivity expected by customers while implementing environmentally friendly practices (Athwal et al., 2019).

Conducting a phenomenographic study of luxury hoteliers' perspectives on sustainable tourism can provide useful insights into how the idea is interpreted and implemented in the luxury hospitality sector. Understanding the various perspectives of luxury hoteliers on sustainability not only sheds light on the innovative strategies they employ but also highlights the inherent tensions between luxury and sustainability that can complicate these efforts, as evidenced by ongoing debates about the trade-offs between opulence and environmental performance (Moscardo, 2017). This study also introduces phenomenographic study in the context of Indonesia as a developing country that may perceive sustainability differently, and bring a fresh understanding to the literature. For the practical impacts, the phenomenographic research can uncover variations in individuals' understandings, inform instructional design, and improve stakeholders' learning and comprehension of the sustainable tourism concept.

The extant literature on sustainable luxury tourism provides a solid foundation for this phenomenographic study. Recent research has identified key themes such as consumer concerns, organizational practices, and cross-cultural issues that contribute to a better understanding of how luxury hotels can align sustainability with their operational ethos, implying that addressing these themes is critical for future advancements in sustainable luxury tourism (Kunz et al., 2020; Moscardo, 2017). In the process, researchers gained a better understanding of the environmental impacts, management responses, and overall state of sustainability within the luxury hotel sector, identify-

ing critical areas for improvement and innovation in this domain (Kunz et al., 2020). It is critical to realize that, while luxury firms may implement sustainable practices, customer scepticism and the halo effect associated with luxury marketing can confound perceptions of these efforts, often overshadowing genuine sustainability measures. As a result, a thorough examination of luxury hoteliers' perceptions and the implication for sustainable tourism is required to bridge the gap between luxury and sustainability, ultimately fostering a more responsible approach to high-end hospitality that aligns with both business objectives and societal needs (Moscardo, 2017). When investigating the viewpoints of luxury hoteliers, it becomes critical to analyse the trade-offs involved in implementing sustainable policies, since these can frequently lead to tensions between preserving luxury standards and generating true environmental advantages that resonate.

Literature Review

Sustainability

Sustainable tourism is rooted in the sustainability concept. Hence, understanding this origin concept is essential. The concept of sustainability was coined by Hans Carl von Carlowitz in his book *Sylvicultura Oeconomica* in 1713. It was popularized by The United Nations – World Commission on Environment and Development (WCED) with the publication of *Our Common Future* in 1987 (World Commission on Environment and Development, 1987). The United Nations' Brundtland Commission, a pioneering effort to address these pressing issues, defined sustainability as development that meets the needs of the present without compromising the environment and the ability of future generations to meet their own needs (Basiago, 1995). Afterwards, this concept progressed substantially and gained immense prominence in the latter half of the twentieth century, as society faced a myriad of interconnected challenges that threatened the delicate balance of the environment (Du Pisani, 2006). This foundational understanding has since evolved to encompass a more holistic and integrated perspective, one that recognizes the intricate web of relationships between economic, social, and ecological factors

(Cabezas et al., 2003; Wang et al., 2011). The notion of sustainability transcends the narrow confines of environmental stewardship, as it requires a profound shift in collective mindsets and strategic frameworks. Furthermore, the three-pillar idea of sustainability evolved gradually in response to challenges of the economic status quo from social and ecological viewpoints, as well as the United Nations' efforts to balance economic growth with social and environmental issues (Purvis et al., 2019).

Furthermore, sustainability is not merely a concept to be studied in isolation; rather, it is a dynamic and multifaceted challenge that demands a comprehensive approach. Sustainability and tourism, for instance, exhibit a complex and nuanced relationship where the industry's growth and development can simultaneously advance and undermine sustainable practices (Alonso-Muñoz et al., 2023; Cohen, 2002). The discourse surrounding sustainability in tourism highlights the inherent tension between preserving the unique cultural identities and heritage of local communities and pursuing development strategies that aim to meet the needs of a diverse range of stakeholders, including visitors, businesses, and the environment (Gezici & Salihoğlu, 2016). This delicate balancing act is further complicated by the diverse forms of tourism, each with its own set of implications for sustainability.

Sustainable Tourism

As the world grapples with the challenges of environmental degradation and the imperative to foster economic development, the concept of sustainable tourism has emerged as a critical framework that seeks to harmonize these seemingly divergent objectives. Sustainable tourism, as defined by the World Tourism Organisation, involves tourism that fulfils tourists' needs, and generates economic and social return while preserving the environment (Neto, 2003). This holistic approach recognizes the interdependence of economic, social, and environmental factors in the tourism industry. It also underscores the need for a balanced and responsible approach to tourism development.

One of the key aspects of sustainable tourism is its emphasis on economic viability and local prosperity.

Rather than prioritizing short-term profits or the interests of external stakeholders, sustainable tourism models aim to create long-term economic benefits that are equitably distributed within the local community (Briassoulis, 2002; Padin, 2012). This involves ensuring that tourism-related businesses and activities are structured in a way that maximizes the quality of employment and economic opportunities for the local population, while also fostering strong linkages between the tourism industry and other sectors of the local economy, allowing for a more diversified and resilient economic base. Sustainable tourism also places a strong emphasis on the preservation and respectful integration of cultural heritage and local traditions (Loulanski & Loulanski, 2011). The preservation and integration of these cultural assets not only maintain the authenticity and appeal of a destination but also empower local communities by fostering a sense of pride and ownership in their rich cultural heritage, which can serve as a powerful source of economic and social development.

The environmental dimension of sustainable tourism is perhaps the most widely recognized aspect, as it emphasizes the need to minimize the negative impacts of tourism on the natural environment. This can involve initiatives such as promoting environmentally friendly transportation options, implementing waste management and energy efficiency measures, and protecting sensitive natural habitats and ecosystems. Sustainable tourism recognizes that the natural environment is a foundational resource for the tourism industry and that its preservation is essential for the long-term viability and appeal of a destination (Butler, 1991). The essential actors in sustainable tourism are diverse, ranging from government policymakers and tourism industry leaders to local communities and individual tourists. Effective sustainable tourism planning and implementation requires a collaborative and coordinated effort among these stakeholders, each of whom must contribute their unique perspectives, resources, and expertise to ensure that the principles of sustainability are fully integrated into the tourism ecosystem (Hardy & Pearson, 2018; Roxas et al., 2020).

Emerging themes in sustainable tourism include the role of technology, particularly social media, in

amplifying the visibility and appeal of sustainable tourism offerings to increasingly environmentally conscious travellers (Socratous et al., 2025). Additionally, the COVID-19 pandemic has highlighted the vulnerability of tourism-dependent economies and the need for more resilient, sustainable models that can withstand external shocks (Baloch et al., 2023; Gezici & Salihoğlu, 2016). Meanwhile, the persistent issues in the actualization of sustainable tourism are the difficulty of balancing competing priorities, the need for strong governance and stakeholder collaboration, and the challenge of measuring and monitoring progress towards sustainability goals (Pan et al., 2018). In conclusion, sustainable tourism represents a critical framework for reconciling the economic, social, and environmental imperatives of tourism development, offering a pathway towards a more equitable, resilient, and environmentally conscious tourism industry.

Sustainable Tourism Practices in Hotels

Extant research has discussed the implementation of the sustainable tourism concept in hotels from the perspective of corporations and guests. The implementation efforts in the hotel as a corporation are diverse, considering the cost and complexity of adopting the concept. These efforts entail practices such as energy efficiency, waste and water management, eco-certification, eco-friendly building materials usage, incorporating green spaces and community engagement (Beccali et al., 2009; Han et al., 2018; Kang et al., 2012). The practices are proven to improve environmental performance, social responsibility, and economic viability while also meeting tourist expectations. Many hotels are focusing on energy efficiency and resource conservation, which can significantly impact both environmental and financial performance (Beccali et al., 2009; Zhang et al., 2012).

On the other side, hotels generate significant amounts of waste, including plastic, paper, organic, and water waste. Effective waste management practices are essential to reduce the environmental footprint of hotels. Strategies such as waste segregation, recycling, and composting are being implemented to manage waste sustainably (Phu et al., 2018; Pirani &

Arafat, 2014). Water conservation is another critical aspect of sustainability in hotels. Hotels are adopting various water conservation techniques, such as installing low-flow fixtures and promoting water-saving behaviours among guests (Han et al., 2018; Park et al., 2021).

Another common practice is the implementation of green certification or eco-labelling. In their operations, green-certified hotels contribute to achieving sustainable development goals (SDGs), including clean water and sanitation, affordable and clean energy, responsible consumption and production, and climate action goals. They are also involved in actualizing green procurement, eco-labelling, and responsible tourism development (Kang et al., 2012; Line & Hanks, 2016; Peng & Chen, 2019). Researchers argue that luxury hotels are more engaged in sustainability practices than regular hotels (Line & Hanks, 2016; Peng & Chen, 2019). Hence, the practices are often more extensive and integrated compared to those typically found in regular hotels. They can be considered as the best practice examples of sustainable tourism actualization. Yet, there is a lack of literature that focuses on luxury hotels.

Meanwhile, from the hotel guests' perspectives, some of the sustainable tourism initiatives from the corporation can shift behaviour towards environmental sustainability. Wong and Lai (2024) showed that the hotel green certificate can influence the environmental awareness of hotel guests and actualize green practices, for example in saving water and reducing waste. Implementing water-saving measures not only helps in reducing water consumption but also enhances guest loyalty and participation in green practices (Han et al., 2018). Guests with higher environmental concerns are more willing to pay a premium for hotels' green practices (Kang et al., 2012). This willingness is more pronounced among guests of luxury and mid-priced hotels compared to those staying in economy hotels. Effective communication of sustainable initiatives is crucial for enhancing guest perceptions (de Oliveira Menezes & Cavagnaro, 2021). Guests prefer learning about these initiatives through digital channels, in-room signage, and informal conversations with hotel staff. This approach

helps guests understand and appreciate the hotel's efforts, potentially increasing their engagement with sustainable practices. This description highlights the importance of hoteliers as a bridge between corporate missions and the actualization of the sustainable tourism concept among guests. However, there is a lack of research investigating the understanding of such concepts in hoteliers.

Literature Review Findings and Gaps

Over the three centuries since the publication of *Sylvicultura Oeconomica* in 1713, the concept of sustainability has undergone significant evolution across various sectors, including tourism. Sustainable tourism has been acknowledged as an essential framework for balancing the economic, social, and environmental aspects of tourism development, offering a more environmentally conscious tourism industry (Butler, 1991; Hardy & Pearson, 2018; Roxas et al., 2020; Socratous et al., 2025). Existing literature has described various actualizations of sustainable tourism in hotels, including energy efficiency and resource conservation (Becali et al., 2009; Sakshi et al., 2020), waste management (Phu et al., 2018; Pirani & Arafat, 2014), water management (Han et al., 2018; Park et al., 2021), and green certification (Kang et al., 2012; Line & Hanks, 2016; Peng & Chen, 2019). However, the actualizations are yet to be rigorously theorized by scholars. In addition, some challenges persist in terms of competing priorities, governance, stakeholder collaboration, and measuring and monitoring progress of the actualization, which need to be addressed (Pan et al., 2018).

Overall, there is a gap in the literature that rarely theorizes the actualization of sustainable tourism in hotels, where most literature only discusses the variety of actions. Furthermore, only a small number of scholars have investigated the actualization of sustainable tourism in luxury hotels. Meanwhile, those luxury hotels are important parts of the tourism industry, and they provide best-practice examples of sustainable tourism. Therefore, this paper tries to contribute to filling the gaps and to generate new knowledge by investigating sustainable tourism practices in luxury hotels and providing solutions to the current challenges.

Methodology

This paper employs a phenomenographic study from the perspective of luxury-class hoteliers in Indonesia. Phenomenographic study is a content-based method that investigates the various qualitative ways in which people make sense of their experiences, with an emphasis on disparities in how they experience and conceptualize their world (Sjöström & Dahlgren, 2002). This method is useful for exploring people's experiences and perceptions within a certain context or phenomenon. In achieving such results, researchers do not separate a phenomenon from the people who experience it (Hajar, 2021). In the context of sustainable tourism, the experiences of hoteliers can be considered important in depicting how hotels actualize the sustainability concept. Hence, this study will unpack the reality of sustainable tourism practices in hotels in Indonesia.

Further, the phenomenographic study comprises three key steps, including: (1) sampling and collecting data, (2) analysing phenomenographic data, and (3) communicating the phenomenographic results (Han & Ellis, 2019). First, the samples of this study were selected by using a purposive sampling approach. There were 17 informants from luxury hotels in six main tourist destinations in Indonesia that participated in this study: Bali, Lombok – Mandalika, Labuan Bajo, Borobudur, Toba Lake, and Likupang (see Table 1). The informants were selected based on the hotel class (four-star and above) where they worked and the position of the informants. Most of them are hotel managers who have comprehensive knowledge of the hotel operation. For confidentiality purposes, the names of the hotels are given pseudonyms. After that, data were collected through face-to-face in-depth interviews with semi-structured questions. The main questions of the in-depth interview are:

1. What are the activities conducted in the hotel regarding sustainable tourism?
2. What are the facilities and resources provided by the hotel for sustainable tourism actualization?
3. Who are the stakeholders involved in sustainable tourism actualization?

Table 1 Informant List

Pseudonym	Hotel Class	Area
Hotel 1	5 stars	Bali
Hotel 2	5 stars	
Hotel 3	5 stars	
Hotel 4	5 stars	
Hotel 5	4 stars	Lombok – Mandalika
Hotel 6	4 stars	
Hotel 7	4 stars	
Hotel 8	4 stars	
Hotel 9	5 stars	
Hotel 10	4 stars	Labuan Bajo
Hotel 11	4 stars	
Hotel 12	5 stars	
Hotel 13	4 stars	Borobudur
Hotel 14	5 stars	
Hotel 15	4 stars	Toba Lake
Hotel 16	4 stars	
Hotel 17	4 stars	Likupang

Incidental follow-up questions are employed to deep dive into the three main questions. Based on the main and follow-up questions, researchers can grapple with a comprehensive understanding of hoteliers' experiences in actualizing the sustainable tourism concept. However, getting access to hotelier informants is very challenging, as not every hotel is willing to be open about their sustainability practices. The support from The Ministry of Tourism and Creative Economy was helpful for gaining access. This research acquired 17 informants as follows (Table 1).

Second, the in-depth interviews with the 17 hotel managers were recorded by using a smartphone, recording with an external microphone. Interview records were transcribed manually to produce a verbatim transcription document. Then, the transcriptions were coded based on the main questions and analysed to find saturated insights by using NVIVO software. Saturated insights were clustered to generate emerging themes that can depict the particular actualization of sustainable tourism in luxury hotels.

Lastly, the phenomenographic results are discussed internally with the research team and externally with the informants. The discussions were conducted three times to validate and strengthen the results. This study discovers three important findings. The findings of this phenomenographic study are listed in the following section. The contribution of this study to the literature is highlighted in the discussion section.

Findings

Sustainable Tourism Activities in Luxury Hotels

Based on the analysis, this study discovered three major emerging themes (categories) of sustainable tourism activities in luxury hotels, namely complying, engaging, and advocating (see Table 2). First, several hotels (Hotels 5, 8, 9, 10, 13, 15, 16, and 17) indicated that they only conducted compliance-related activities. These hotels are not motivated to conduct further sustainability activities and focus on fulfilling the requirements to comply with regulations and policies. The activities include: (1) conserving energy in accordance with the company or principal policy, (2) implementing waste management in accordance with government regulations, (3) mitigation planning and reporting of their environmental impact to comply with the government's regulations, and (4) implementing hotel certifications in accordance with the principal's and government's policies.

Second, there are hotels (Hotels 3, 6, 7, 11, 12, and 14) that have more extensive activities for reducing their negative impacts on the environment and society. These hotels showed a better sustainability performance compared to the first one. The activities include: (1) implementing rigorous water management that improves the hotel's efficiency and sustainability performance, (2) implementing a rigorous waste up-cycle process in collaboration with the surrounding stakeholders and significantly reducing the solid waste to the landfill, and (3) obtaining reputable certifications and awards in sustainability.

Third, among all hotel samples, only three can be considered as demonstrating the best practice in actualizing the sustainable tourism concept (Hotels 1, 2, and 4). These hotels considered sustainability as an in-

Table 2 Data Analysis for Sustainable Tourism Activities Inquiry

Quotes	Interpretation	Emerging Themes
<p>'We use LED lights, more open space, and less AC for energy efficiency.' (Hotel 5)</p> <p>'Each room utilizes an automatic key tap for conserving electricity.' (Hotel 8)</p> <p>'In some public spaces we use ventilation and high ceilings; thus, we minimize the AC usage, which can conserve energy.' (Hotel 10)</p> <p>'... solar powered lamps in the garden and parking lot can significantly reduce electricity usage.' (Hotel 16)</p>	Conserving energy in accordance with the company policy.	Complying
<p>'The local government collects our solid waste, and we pay the monthly retribution.' (Hotel 5)</p> <p>'Yes, we are sorting the solid waste into three categories, organic, recyclable, and hazardous (B3) waste. Then, we pay a retribution for the local government to collect the waste.' (Hotel 8)</p> <p>'We manage our solid and liquid waste as mandated by the government.' (Hotel 9)</p> <p>'Some of our CSR budget is allocated to support the government's events for beach cleaning.' (Hotel 10)</p> <p>'We treat our wastewater and pay retributions for solid waste collection from the local government.' (Hotel 15)</p>	Implementing waste management in accordance with government regulations.	
<p>'...the environmental impacts planning and annual report to monitor the waste management is mandatory.' (Hotel 8)</p> <p>'We comply with the regulations from the Ministry of Forestry and Environment for implementing mitigations of environmental impacts such as treating our wastewater.' (Hotel 13)</p> <p>'Yes, we use vendors to plan and monitor the environmental impact of our business operations.' (Hotel 16)</p>	Mitigation planning and reporting of the environmental impact for complying with the government's regulations.	
<p>'Our certification includes Star Hotel, CHSE (cleanliness, health, safety, and environment sustainability), and Green Globe Certification.' (Hotel 9)</p> <p>'We have an HACCP (Hazard Analysis Critical Control Point) certification for our food processing.' (Hotel 13)</p> <p>'CHSE certification was useful to convince the guests to come during the Covid-19 pandemic; however, right now it is less important. But we will comply with the regulation if it is mandatory.' (Hotel 16)</p>	Implementing hotel certifications in accordance with principal and government policies.	
<p>'Our water management includes WWTP, SWRO, and a rainwater harvesting system.' (Hotel 3)</p> <p>'We recycled our wastewater by using a sewage water treatment plant (SWTP) and producing 20 thousand litres for flushing toilets, watering the plants, cleaning the road, etc.' (Hotel 6)</p> <p>'For the wastewater, we utilize a biofilter system that does not require chemical substances in the process. We use the filtered water for watering the gardens.' (Hotel 7)</p> <p>'The water from WWTP is utilized to water our gardens. It significantly reduces the water bills.' (Hotel 11)</p> <p>'We involve our surrounding communities and NGO to process organic waste into compost and plastic waste into souvenirs and building materials.' (Hotel 6)</p> <p>'Our kitchen waste is recycled into an eco-enzyme that can be used for fertilizer and soap. We also made compost and handicrafts from the sorted waste.' (Hotel 7)</p> <p>'The fruit and vegetable wastes have been processed into an eco-enzyme that can be used for cleaning liquid and plant pesticide since 2019, while organic waste is processed into compost.' (Hotel 11)</p> <p>'We collaborated with an NGO to upcycle plastic bottles into granules and commercial products.' (Hotel 12)</p> <p>'Our hotel significantly reduces the waste. Some of the organic waste is processed in a black soldier fly farm to produce maggots that can be used for animal feeds.' (Hotel 14)</p>	Implementing rigorous water management that improves the hotel's efficiency and sustainability performance.	Engaging
	Implementing a rigorous waste upcycle process in collaboration with the surrounding stakeholders and significantly reducing the solid waste going to the landfill.	

Continued on the next page

Table 2 Continued from the previous page

Quotes	Interpretation	Emerging Themes
<p>'We are committed to achieving best practice of environmental and social sustainability with the international certification from Earth Check' (Hotel 3)</p> <p>'We have international certifications, including ISO-140001 and ISO-45001.' (Hotel 6)</p> <p>'We have obtained the green label from Booking.com.' (Hotel 7)</p> <p>'... have been awarded by the government with the Lingko Award.' (Hotel 11)</p> <p>'Yes, international certification from Earth Check and CHSE from the Ministry of Tourism and Creative Economy.' (Hotel 12)</p> <p>'Recently, this hotel has been awarded with a certificate for Tourism Ecosystem Fellowship by Indonesia's Ministry of Tourism and Creative Economy.' (Hotel 14)</p>	<p>Obtaining reputable certifications and awards in sustainability.</p>	
<p>'Starting in 2017, this hotel began with small steps to sort the solid waste until now we can process our own waste to 97.5%. So, based on the external audit only 2.5% of waste goes to the landfill. We also educate our guests to be involved in our mission to achieve the zero-waste goal, and we give them a zero-waste kit.' (Hotel 1)</p> <p>'...achieving carbon neutrality by investing in several emission reduction projects that are certified by UNFCCC Asia.' (Hotel 1)</p> <p>'In collaboration with the surrounding communities, we processed our own waste in the waste lab and processing facilities.' (Hotel1)</p> <p>'... installed 111 solar panels for 15% energy efficiency and reducing emission.' (Hotel 2)</p> <p>'This resort has a 5.5 hectares green area that consists of coffee plantation and tropical forest. We have a programme that involves guests and communities to plant around 1,000 trees in this area annually.' (Hotel 2)</p> <p>'We have dedicated staff and facilities to sort and process our own waste. We call them the green team. The team has upcycled plastic waste into furniture and craft products. Then, we sell them to our guests. We also process the organic waste for compost and maggots.' (Hotel 2)</p> <p>'The resort has around 5 hectares of green spaces that consist of gardens, paddy fields, and growing grounds. We maintain those spaces as a public space and involve local farmers in continuously cultivating the paddy fields. These green spaces are the jewels of the resort that attract many foreign guests.' (Hotel 3)</p> <p>'Yes, we have a dedicated team and facilities for sustainability planning and management. This team managed the waste processing/upcycling, WWTP, rain harvesting system, energy conservation, and compliance for environmental impact mitigation activities.' (Hotel 3)</p> <p>'We built a centralized boiler for fulfilling the water heater needs of the resort. This is very efficient compared to the singular room water heater.' (Hotel 3)</p>	<p>Possessing an extensive commitment and effort in processing waste to greatly reduce the impact on the environment.</p>	<p>Advocating</p>
<p>'Our reputation in sustainability can attract foreign guests.' (Hotel 1)</p> <p>'We also provide some sustainability tour packages for our guests including a waste tour, morning beach cleaning, crafting class using green or waste materials... Many foreign guests were interested in these packages.' (Hotel 1)</p> <p>'Our waste lab upcycled our waste into valuable products, and we sell the products to our guests.' (Hotel 1)</p> <p>'We have a programme that involves guests and communities to plant around 1,000 trees in this area annually.' (Hotel 2)</p> <p>'The team has upcycled plastic waste into furniture and craft products. Then, we sell them to our guests.' (Hotel 2)</p> <p>'There are some tour packages for the guests such as tracking in the coffee plantation, horse riding, and a crafting class.' (Hotel 2)</p> <p>'We also provide sustainability activity packages for our guests, such as cycling, tracking, planting at the growing ground, picnicking at the paddy field, harvesting and cooking the fresh ingredients from the garden. The foreign guests love those activities.' (Hotel 3)</p> <p>'These green spaces are the jewels of the resort that attract many foreign guests.' (Hotel 3)</p>	<p>Leveraging the sustainability activities to acquire economic returns for sustaining the activities.</p>	

separable part of the hotel's operation. They make an extensive commitment and effort to process waste to circulate it back into the economy and greatly reduce the impact on the environment.

Facilities and Resources

Within the complying category, the hotels only provide minimum facilities and resources to comply with the policies and regulations. The facilities are mostly limited to energy and waste management-related facilities. In short, their motive is to provide necessary facilities that are mandatory according to government regulations and principal policies. They are reluctant to spend more capital to invest in facilities for actualizing sustainable tourism extensively.

Meanwhile, in the engaging category, the hotels have sufficient resources and capital. They are eager to provide extensive facilities and resources for engaging further in sustainable tourism activities. With these facilities, they can deliver better sustainability perfor-

mance and cost-efficiency, such as recycling wastewater that can reduce water bills, producing eco-enzymes from organic waste that reduces chemical use, and conserving the surrounding environment.

In the advocating category, the hotels have greater resources and capital. They also have visionary leaders who consider actualizing the sustainable tourism concept in their business operations to be essential. Hence, they are committed to providing dedicated facilities and resources that can continuously conduct sustainable tourism activities. Moreover, the dedicated hotel staff in this category are more actively interacting with guests and other stakeholders, compared to the previous two categories. As a result, the hotels can leverage the facilities and resources to attract guests and stakeholders to come and be involved in sustainable tourism activities.

Table 3 Data Analysis for Hotels' Facilities and Resources Inquiry

Quotes	Interpretation	Emerging Themes
'We use LED lights, more open space, and less AC for energy efficiency... Yes, we provide temporary storage for the solid waste... There are no dedicated staff for these facilities, they are maintained by the engineering and housekeeping division.' (Hotel 5)	Providing only minimum facilities and resources to comply with the policies and regulations.	Complying
'We provide large containers and temporary storage for sorting and storing the solid waste until the local government collects them... Our waste mostly comes from the rooms, the restaurant, and the garden. Each staff from these sections will sort and deliver the waste to the main garbage bins.' (Hotel 8)		
'Our waste processing facilities include WWTP, solid waste sorting and temporary storage.' (Hotel 9)		
'We don't have dedicated staff, but we used a vendor to maintain the WWTP.' (Hotel 11)		
'For drinking water, we are using glass bottles to reduce the plastic waste... We use LED lights to save energy... and we are sorting the solid waste into four categories, organic, inorganic, plastic, and paper or cardboard. There is a sorting facility with temporary storage.' (Hotel 13)		
'We treat our wastewater and pay retributions for solid waste collection from the local government... we also use an electric golf cart for reducing emissions.' (Hotel 15)		
'... solar powered lamps in the garden and parking lot can significantly reduce electricity usage.' (Hotel 16)		
'The rooms utilize tapping card and LED lights... We also have a waste sorting facility and WWTP.' (Hotel 17)		

Continued on the next page

Table 3 Continued from the previous page

Quotes	Interpretation	Emerging Themes
<p>'Our water management includes WWTP, SWRO, and a rainwater harvesting system.' (Hotel 3)</p> <p>'We recycled our wastewater by using a sewage water treatment plant (SWTP) and producing 20 thousand litres for flushing toilets, watering the plants, cleaning the road, etc.' (Hotel 6)</p> <p>'Our kitchen waste is recycled into an eco-enzyme that can be used for fertilizer and soap. We also made compost and handicrafts from the sorted waste.' (Hotel 7)</p> <p>'The water from WWTP is utilized to water our gardens. It significantly reduces the water bills... The fruit and vegetable wastes are processed into an eco-enzyme that can be used for cleaning liquid and plant pesticides since 2019, while organic waste is processed into compost.' (Hotel 11)</p> <p>'There is a dedicated division for marine biology for conducting beach and coral conservation.' (Hotel 12)</p> <p>'We have a paddy field as our green space in front of our hotel that involves local farmers to plant the rice regularly. They can use the space and harvest it freely.' (Hotel 14)</p>	<p>Providing extensive facilities and resources for engaging further in sustainable tourism activities.</p>	<p>Engaging</p>
<p>'Starting in 2017, this hotel began with small steps to sort the solid waste until now we can process our own waste to 97.5%. So, based on the external audit only 2.5% of waste goes to the landfill. We also educate our guests to be involved in our mission to achieve the zero-waste goal, and we give them a zero-waste kit... In collaboration with the surrounding communities, we processed our own waste in the waste lab and processing facilities. Yeah, we have our leader's vision, dedicated team, facilities and opex to continuously support the sustainability activities.' (Hotel 1)</p> <p>'Our owner is from Germany, and she has the vision and commitment to provide the funding and facilities for conducting the sustainability activities... installed 111 solar panels for 15% energy efficiency and reducing emission... This resort has a 5.5 hectares green area that consists of coffee plantations and tropical forests. We have a programme that involves guests and communities to plant around 1,000 trees in this area annually... We have dedicated staff and facilities to sort and process our own waste. We call them the green team. The team has upcycled plastic waste into furniture and craft products. Then, we sell them to our guests. We also process the organic waste for compost and maggots... and eventually, we can attract international guests that are concerned about sustainability.' (Hotel 2)</p> <p>'The resort has around 5 hectares of green spaces that consist of gardens, paddy fields, and growing grounds. We maintain those spaces as a public space and involve local farmers in continuously cultivating the paddy fields. These green spaces are the jewels of the resort that attract many foreign guests... Yes, we have a dedicated team and facilities for sustainability planning and management. This team managed the waste processing/ upcycling, WWTP, rain harvesting system, energy conservation, and compliance for environmental impact mitigation activities. Overall, by providing these facilities, we can attract European guests to come here and experience the unique sustainable tourism activities.' (Hotel 3)</p>	<p>Providing dedicated facilities and resources that continuously conduct sustainable tourism activities that attract guests and stakeholders to be involved with the activities.</p>	<p>Advocating</p>

Involved Stakeholders

This study has identified various stakeholders involved in the actualization of sustainable tourism within luxury hotels (see Table 4). Hotels in the complying category have involved necessary stakeholders for compliance-related activities. The stakeholders include waste collectors (local government and private

collectors), local food suppliers, employees, and surrounding communities. As for hotels in the engaging category, they have involved secondary stakeholders that can help them to actualize sustainable tourism activities extensively. The secondary stakeholders include NGOs or social enterprises, waste off-takers (traders), and hired professionals. The waste off-taker

Table 4 Data Analysis for Hotel Stakeholders' Inquiry

Quotes	Interpretation	Emerging Themes
'The local government collected our solid waste, and we pay the monthly retribution.' (Hotel 5)	Waste Collector (local government and private collector).	Complying - Necessary stakeholders for compliance.
'...we pay a retribution for local government to collect the waste.' (Hotel 8)		
'The solid and food wastes are collected by the Agency for Environment and Kuta Local Government Business Unit.' (Hotel 9)		
'The plastic wastes are sorted and collected by a private collector (trader).' (Hotel 13)		
'The agricultural fresh produce and ingredients are procured from local and regional vendors. I guess that can minimize our carbon footprint from the food logistic side.' (Hotel 5)	Local food suppliers.	
'Our food suppliers mostly are local people from Mataram.' (Hotel 8)		
'This hotel prioritizes local sources for the food supplies. So, mostly are locals.' (Hotel 9)		
'The edible food surplus is reallocated to the employees' canteen for take-aways.' (Hotel 13)	Employees.	
'The food excess from the restaurant will be offered to the 200 employees.' (Hotel 15)		
'The edible surplus from breakfast will be reprocessed as brunch or lunch menus, after that it will go to our employees.' (Hotel 16)		
'Any leftovers from the canteen will go to the pig farmers nearby.' (Hotel 13)	Surrounding communities.	
'Kitchen and food waste will be given to surrounding communities for pig feeds.' (Hotel 16)		
'We are collaborating with Sungai Watch, an NGO, to clean the mangrove forest and river.' (Hotel 3)	NGO or Social Enterprises.	Engaging - Secondary stakeholders for engaging further.
'We give our food surplus to the community via the Scholar of Sustenance.' (Hotel 3)		
'We collaborated with Gili Ecotrust organization to make souvenirs and building materials from the recyclable wastes.' (Hotel 6)		
'Previously, we had a collaboration with an NGO, the Agency for Health, and the Agency for Environment for maintaining and monitoring the SWTP.' (Hotel 6)		
'For processing the organic waste into maggots, we engage with a black soldier fly farm nearby.' (Hotel 14)		
'We are sorting and managing the waste into paper, glass, metal, oil, and plastic involving several waste off-takers.' (Hotel 3)	Waste off-taker (trader).	
'So, we give the recyclable plastic waste to the off-taker, and they make eco-bricks from the waste. Meanwhile, the organic waste is processed into compost.' (Hotel 6)		
'The fruit and vegetable waste has been processed into an eco-enzyme that can be used for cleaning liquid and plant pesticides since 2019, while organic waste is processed into compost. For doing that we hired a consultant to help and train us.' (Hotel 11)	Hired professionals.	
'There is a dedicated division for marine biology for conducting beach and coral conservation.' (Hotel 12)		
'We also educate our guests to be involved in our mission to achieve the zero-waste goal, and we give them a zero-waste kit... We also provide some sustainability tour packages for our guests including a waste tour, morning beach cleaning, crafting class using green or waste materials... Many foreign guests were interested in these packages.' (Hotel 1)	Customers (guests) and potential customers.	Advocating - Primary stakeholders for advocating sustainable tourism.
'We have a programme that involves guests and communities to plant around 1,000 trees in this area annually... The team has upcycled plastic waste into furniture and craft products. Then, we sell them to our guests... eventually, we can attract international guests that are concerned about sustainability.' (Hotel 2)		
'These green spaces are the jewels of the resort that attract many foreign guests... We also provide sustainability activity packages for our guests, such as cycling, tracking, planting at the growing ground, picnicking at the paddy field, harvesting and cooking the fresh ingredients from the garden. The foreign guests love those activities... Overall, by providing these facilities, we can attract European guests to come here and experience the unique sustainable tourism activities.' (Hotel 3)		

Table 5. The Phenomenographic Study Results for Luxury Hoteliers' Understanding of Sustainable Tourism

Components	Level of Comprehensiveness			
	Low	→		High
	Complying	Engaging	Advocating	
Activities	Limited to compliance-related activities and certifications.	More rigorous activities to improve efficiency, sustainability performance, and gaining reputable certifications.	Possessing an extensive commitment and efforts in conducting sustainable activities and leveraging the activities to acquire economic returns.	
Facilities and resources	Providing only necessary facilities and resources for compliance.	Providing extensive facilities and resources for engaging further in sustainable tourism activities.	Providing dedicated facilities and resources that continuously conduct sustainable tourism activities.	
Involved stakeholders	Necessary stakeholders for compliance.	Secondary stakeholders for engaging further.	Primary stakeholders for advocating sustainable tourism.	

is different from the collector: the off-taker is willing to purchase sorted waste such as plastic and metal, while the collector is paid to pick up waste from the hotels. Furthermore, in the last category, the hotels are promoting their practices and involving their guests to experience or participate in sustainable tourism activities. This involvement can be considered the pinnacle of the actualization of sustainable tourism, where guests (tourists) come to destinations to actively engage in sustainability activities while on vacation. From this involvement, the hotels can gain substantial economic returns to sustain the activities. Meanwhile, the other two hotel categories overlooked involving the guests.

Overall, this phenomenographic study has unravelled three distinctive understandings for actualizing sustainable tourism from the perspective of luxury hoteliers. First, the complying category grouped hotels which limit their activities, facilities – resources, and involved stakeholders to complying with regulations and policies. Second, the engaging category is eager to conduct more rigorous sustainable tourism activities, providing extensive facilities and resources, also collaborating with secondary stakeholders to bring greater environmental and social returns. Lastly, the advocating category which possesses an extensive commitment and effort in conducting sustainable activities, can leverage the sustainability activities to acquire economic returns. This category also provides

dedicated facilities and resources that continuously conduct sustainable tourism activities. In addition, the advocating hotels can attract and involve tourists in their sustainable tourism activities.

Based on these findings, the three understandings can be arranged into hierarchical order according to the comprehensiveness of the actualization of the sustainable tourism concept (see Table 5), starting with the complying category, which has the lowest level of comprehensiveness, an engaging category in the middle, and an advocating category in the highest level. This phenomenographic result has been discussed internally and externally to validate the findings. The result will be further theorized into a model in the discussion section.

Discussion

The findings of this study are aligned with the existing literature that describes sustainable tourism actualization in hotels. Many of them focused on energy efficiency and resource conservation (Beccali et al., 2009; Sakshi et al., 2020), waste management (Phu et al., 2018; Pirani & Arafat, 2014), water management (Han et al., 2018; Park et al., 2021), and green certification (Kang et al., 2012; Line & Hanks, 2016; Peng & Chen, 2019). However, by focusing on the luxury hotels, this study can add to the literature by unravelling three different understandings in sustainable tourism actualization with different levels of comprehensive-

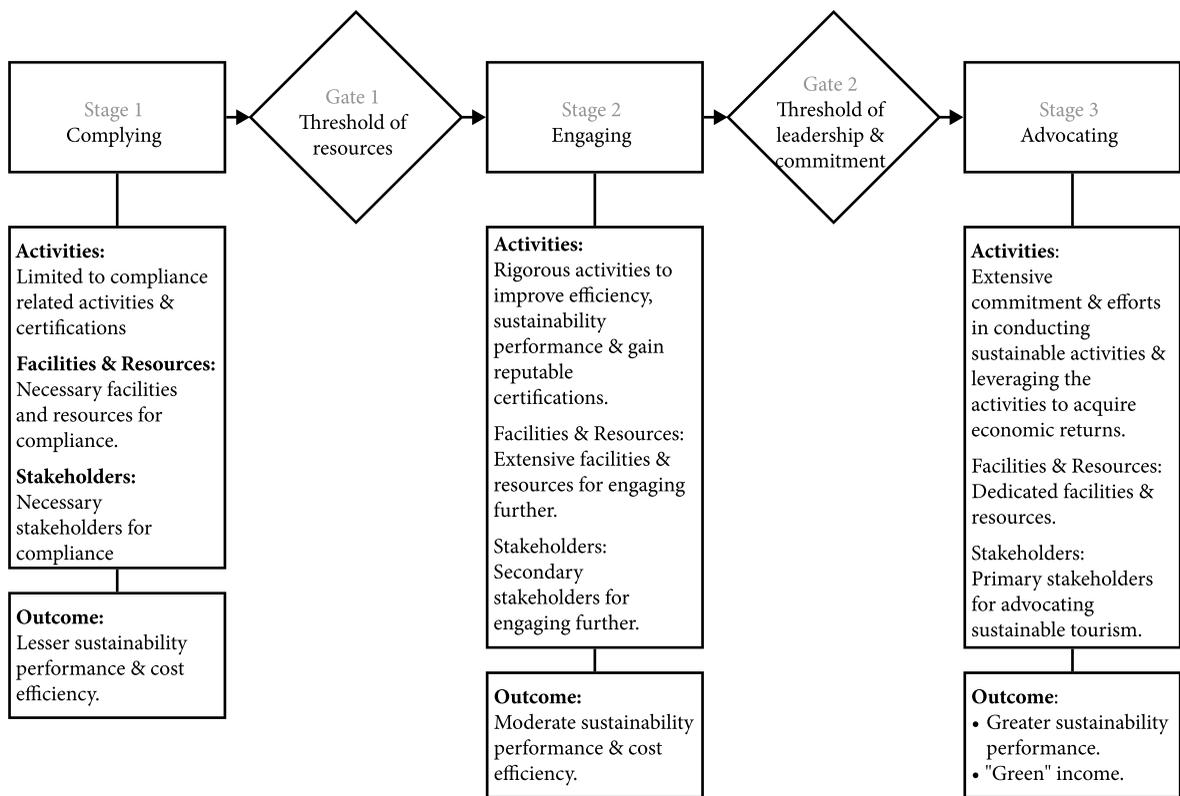


Figure 1 Stage-gate Model for Sustainable Tourism Concept Actualization in Luxury Hotels.

ness, not only describing the variety of the actualization. The three understandings are (1) complying, (2) engaging, and (3) advocating.

To provide a more substantial contribution to the literature, this study synthesizes the three categories into a stage-gate model for sustainable tourism concept actualization in luxury hotels (see Figure 1). The model consists of three stages and two gates. The three stages are translated from the three categories in these phenomenographic results (complying, engaging, and advocating). Furthermore, for transitioning into the next stage, hotels need to pass through two gates: (1) the threshold of resources and (2) the threshold of leadership and commitment. The model will be described in the following proposition below.

Proposition: In nature, luxury hotels are gradually understanding and adopting the sustainable tourism concept, starting from the complying, through the engaging, to the advocating stage. Each stage has

different levels of comprehensiveness and outcomes, starting from the complying stage through to the advocating stage which has the highest comprehensiveness and outcomes. For transitioning into the next stages, the hotels need to pass through the thresholds of the (1) resources, and also (2) leadership and commitment gates. The threshold of resources means that the hotels are required to possess sufficient resources to develop more facilities and to support more rigorous sustainable tourism activities. Meanwhile, the threshold of leadership and commitment means that the hotels need to have visionary leaders who consider sustainable tourism as an inseparable concept from their business practices and are committed to providing dedicated facilities and resources to sustain the activities.

This model can be useful for hotel management, policymakers, and academics to explain that the actualization of sustainable tourism in luxury hotels is

not only about the variety of activities but also more complex and hierarchical. With this model, luxury hotels within the category of complying and engaging can understand how to improve and transition to the higher stage. The hotels may experience difficulties in transitioning into the next stage due to the inability to fulfil the threshold of necessary resources, leadership and commitment. In addition, the hotels need to have sufficient motivation to achieve higher stages with greater expected outcomes. The 'green income' that can be acquired in the highest stage may not be visible and sufficient to provide motivation to the earlier stage hotels. Hence, policymakers can provide support or endorsement to encourage luxury hotels to achieve higher stages.

Conclusion

Tourism stakeholders (especially luxury hotels) have varying comprehension of sustainable tourism concepts. Hence, they cannot determine the best ways to actualize the concept. Therefore, it is necessary to capture the current understanding through an empirical study and see the best practice as a golden standard for actualization. By employing a phenomenographic approach, this study provides two major contributions.

First, it unravels three distinct understandings for the actualizing of sustainable tourism from the hoteliers' perspective, namely the (1) complying, (2) engaging, and (3) advocating stages. These three understandings have different levels of comprehensiveness. At the complying stage, the hotels are limiting the activities, facilities, resources, and stakeholders to compliance with regulations and policies. At the engaging stage, they are conducting rigorous sustainable tourism activities with more extensive facilities and resources, and also involving secondary stakeholders. At the advocating stage, they make a strong commitment and effort in conducting sustainable activities with their dedicated facilities and resources. Eventually, they can leverage the activities to gain economic returns or 'green income'.

Second, by synthesizing the three stages, this study proposes a stage-gate model for the practical application of gradual actualization of sustainable tourism

in luxury hotels. They need to pass through (1) the threshold of resources, and (2) the threshold of leadership and commitment to achieve a higher level of actualization and gain substantial outcomes. This model can be used for explaining the actualization stages of sustainable tourism in the luxury hotels, and the features in each stage, to hotels' management, policymakers, and academics. However, this model may be limited to the context of luxury hotels, especially in a developing country such as Indonesia. Therefore, future research is required to test the usability of the model in various contexts of tourism studies.

References

- Alonso-Muñoz, S., Torrejón-Ramos, M., Medina-Salgado, M.-S., & González-Sánchez, R. (2023). Sustainability as a building block for tourism-future research: Tourism agenda 2030. *Tourism Review*, 78(2), 461–474.
- Athwal, N., Wells, V. K., Carrigan, M., & Henninger, C. E. (2019). Sustainable luxury marketing: A synthesis and research agenda. *International Journal of Management Reviews*, 21(4), 405–426.
- Ayuso, S. (2006). Adoption of voluntary environmental tools for sustainable tourism: analysing the experience of Spanish hotels. *Corporate Social Responsibility and Environmental Management*, 13(4), 207–220.
- Baloch, Q. B., Shah, S. N., Iqbal, N., Sheeraz, M., Asadullah, M., Mahar, S., & Khan, A. U. (2023). Impact of tourism development upon environmental sustainability: A suggested framework for sustainable ecotourism. *Environmental Science and Pollution Research*, 30(3), 5917–5930.
- Basiago, A. D. (1995). Methods of defining 'sustainability'. *Sustainable Development*, 3(3), 109–119.
- Beccali, M., La Gennusa, M., Lo Coco, L., & Rizzo, G. (2009). An empirical approach for ranking environmental and energy saving measures in the hotel sector. *Renewable Energy*, 34(1), 82–90.
- Briassoulis, H. (2002). Sustainable tourism and the question of the commons. *Annals of Tourism Research*, 29(4), 1065–1085.
- Butler, R. W. (1991). Tourism, environment, and sustainable development. *Environmental Conservation*, 18(3), 201–209.
- Cabezas, H., Pawlowski, C. W., Mayer, A. L., & Hoagland, N. T. (2003). Sustainability: Ecological, social, economic, technological, and systems perspectives. *Clean Technologies and Environmental Policy*, 5(3–4), 167–180.

- Cohen, E. (2002). Authenticity, equity and sustainability in tourism. *Journal of Sustainable Tourism*, 10(4), 267–276.
- Du Pisani, J. A. (2006). Sustainable Development: Historical roots of the concept. *Environmental Sciences*, 3(2), 83–96.
- Gezici, F., & Salihoğlu, G. (2016). The challenges on sustainability of alternative forms of tourism. In I. Egredi (Ed.), *Alternative tourism in Turkey* (pp. 319–333). Springer.
- Hajar, A. (2021). Theoretical foundations of phenomenography: A critical review. *Higher Education Research & Development*, 40(7), 1421–1436.
- Han, F., & Ellis, R. A. (2019). Using phenomenography to tackle key challenges in science education. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.01414>
- Han, H., Lee, J.-S., Trang, H. L. T., & Kim, W. (2018). Water conservation and waste reduction management for increasing guest loyalty and green hotel practices. *International Journal of Hospitality Management*, 75, 58–66.
- Hardy, A., & Pearson, L. J. (2018). Examining stakeholder group specificity: An innovative sustainable tourism approach. *Journal of Destination Marketing & Management*, 8, 247–258.
- Kang, K. H., Stein, L., Heo, C. Y., & Lee, S. (2012). Consumers' willingness to pay for green initiatives of the hotel industry. *International Journal of Hospitality Management*, 31(2), 564–572.
- Kunz, J., May, S., & Schmidt, H. J. (2020). Sustainable luxury: Current status and perspectives for future research. *Business Research*, 13(2), 541–601.
- Line, N. D., & Hanks, L. (2016). The effects of environmental and luxury beliefs on intention to patronize green hotels: The moderating effect of destination image. *Journal of Sustainable Tourism*, 24(6), 904–925.
- Loulanski, T., & Loulanski, V. (2011). The sustainable integration of cultural heritage and tourism: A meta-study. *Journal of Sustainable Tourism*, 19(7), 837–862.
- Moscardo, G. (2017). *Sustainable luxury in hotels and resorts: Is it possible?* In M. A. Gardetti (Ed.), *Sustainable management of luxury* (pp. 163–189). Springer.
- Neto, F. (2003). A new approach to sustainable tourism development: Moving beyond environmental protection. *Natural Resources Forum*, 27(3), 212–222.
- Oliviera Menezes, V. de, & Cavagnaro, E. (2021). Communicating sustainable initiatives in the hotel industry. In F. Brandão (Ed.), *Handbook of research on the role of tourism in achieving sustainable development goals* (pp. 224–234). IGI Global.
- Padin, C. (2012). A sustainable tourism planning model: Components and relationships. *European Business Review*, 24(6), 510–518.
- Pan, S.-Y., Gao, M., Kim, H., Shah, K. J., Pei, S.-L., & Chiang, P.-C. (2018). Advances and challenges in sustainable tourism toward a green economy. *Science of The Total Environment*, 635, 452–469.
- Park, J., Park, Y., Yoo, J. L., & Yu, J. (2021). Can Hotel companies' water conservation management and waste reduction measures influence hotel customers' willingness to pay more and intention to revisit? *International Journal of Environmental Research and Public Health*, 18(17), 9054.
- Peng, N., & Chen, A. (2019). Luxury hotels going green: The antecedents and consequences of consumer hesitation. *Journal of Sustainable Tourism*, 27(9), 1374–1392.
- Phu, S., Hoang, M., & Fujiwara, T. (2018). Analyzing solid waste management practices for the hotel industry. *Global Journal of Environmental Science and Management*, 4, 19–30.
- Pirani, S. I., & Arafat, H. A. (2014). Solid waste management in the hospitality industry: A review. *Journal of Environmental Management*, 146, 320–336.
- Purvis, B., Mao, Y., & Robinson, D. (2019). Three pillars of sustainability: In search of conceptual origins. *Sustainability Science*, 14(3), 681–695.
- Roxas, F. M. Y., Rivera, J. P. R., & Gutierrez, E. L. M. (2020). Mapping stakeholders' roles in governing sustainable tourism destinations. *Journal of Hospitality and Tourism Management*, 45, 387–398.
- Sakshi, S., Cerchione, R., & Bansal, H. (2020). Measuring the impact of sustainability policy and practices in tourism and hospitality industry. *Business Strategy and the Environment*, 29(3), 1109–1126.
- Sjöström, B., & Dahlgren, L. O. (2002). Applying phenomenography in nursing research. *Journal of Advanced Nursing*, 40(3), 339–345.
- Socratous, M., Thrasyvoulou, G., & Stylianou, C. (2025). Technology-driven sustainable tourism destinations: Perspectives from key policymakers. *Worldwide Hospitality and Tourism Themes*, 17(1), 77–90.
- Tölkes, C. (2018). Sustainability communication in tourism: A literature review. *Tourism Management Perspectives*, 27, 10–21.
- Wang, R., Li, F., Hu, D., & Larry Li, B. (2011). Understanding eco-complexity: Social-Economic-Natural Complex Ecosystem approach. *Ecological Complexity*, 8(1), 15–29.

- World Commission on Environment and Development. (1987). *Our common future*. Oxford University Press.
- Wong, J. W. C., & Lai, I. K. W. (2024). Influence of the green certification logo and text on environmental awareness and hotel guests' water-saving behaviour. *Journal of Travel & Tourism Marketing*, 41(4), 491–507.
- Zhang, J. J., Joglekar, N. R., & Verma, R. (2012). Exploring resource efficiency benchmarks for environmental sustainability in hotels. *Cornell Hospitality Quarterly*, 53(3), 229–241.