

IMPLEMENTATION OF THE GREEN HOUSEKEEPING CONCEPT TO ENHANCE ECO-FRIENDLY SERVICE QUALITY AT HOTEL TUNJUNGAN SURABAYA

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Abstract:

This study aims to conduct an in-depth analysis of the implementation of the green housekeeping concept at Hotel Tunjungan Surabaya, evaluate its impact on service quality dimensions (tangibles, reliability, responsiveness, assurance, and empathy), and formulate an optimal operational integration model. A qualitative approach with a case study design was employed. Primary data were gathered through in-depth interviews with management, operational staff, and guests using purposive sampling, complemented by secondary data, field observations, and document analysis. The findings indicate that green housekeeping practices at Hotel Tunjungan Surabaya encompass energy and water conservation, the substitution of eco-friendly amenities, the use of eco-friendly chemicals, and a unique solid waste management system. This implementation was rated highly and consistently, adding value to service quality particularly regarding tangibles, reliability, and responsiveness without compromising customer satisfaction, notably through a linen reuse program supported by transparent guest information (compendiums). In conclusion, the transition to eco-friendly operations was successfully aligned with guest comfort expectations through smart material substitution strategies that did not infringe upon basic consumer rights. The primary challenges encountered were external, specifically limited local suppliers and the high cost of eco-friendly products, which were addressed by expanding the network of competitive third-party partnerships.

Keywords: Green Housekeeping, Service Quality, Eco-Friendly, Tourism

INTRODUCTION

The global tourism and hospitality industry is currently undergoing a significant paradigm shift toward sustainable business practices (Agus Tamrin Reni, n.d.). As major contributors to carbon emissions, water consumption, and solid waste generation, hotels are under pressure to move beyond the sole pursuit of economic profitability and actively minimize their environmental impact (Han et al., 2020). Rising environmental awareness among urban travelers has spurred the emergence of the eco-friendly hotel concept. In Indonesia, major cities like Surabaya serve as dynamic hubs for hotel industry growth, yet they simultaneously face serious ecological challenges regarding waste management and energy efficiency (Bersih et al., 2024). Hotel Tunjungan Surabaya, a legendary establishment situated at the heart of the city's business and historical districts, occupies a pivotal position, tasked with balancing its service heritage against the demands of eco-conscious modernization. The housekeeping department plays a vital role in this green transformation through the implementation of green housekeeping practices.

The concept of green housekeeping essentially focuses on operational efficiency through the use of eco-friendly chemicals (biodegradable cleaning agents), the reduction of water and energy



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consumption, and rigorous waste management starting directly from the guest room (Mensah, 2021). However, the greatest challenge in implementing this concept in urban hotels such as Hotel Tunjungan Surabaya lies in perceptions regarding service quality. Conventional housekeeping operations are often associated with the daily, large-scale replacement of pristine white towels, the use of strong chemical fragrances, and an abundance of single-use amenities intended to convey a sense of luxury (VikasSharma et al., 2023). When green principles are applied, for instance, through towel reuse programs or the replacement of plastic amenities with organic alternatives, there is a risk that guests may perceive a decline in service quality if the initiatives are not communicated effectively (Berezan et al., 2013). Consequently, balancing ecological efficiency without compromising customer satisfaction has become a primary challenge facing hotel management today (Agboola et al., 2025).

Although the literature on green hospitality has grown rapidly over the past decade, several significant research gaps underlie the urgency of this study. First, there are conceptual and contextual gaps related to consumer behavior in the Indonesian domestic market. Most previous research on the effectiveness of green hotels has focused on resort landscapes in Bali or international chain hotels, where guests are predominantly international tourists with established environmental concerns (Muliatambunan et al., 2025). Very limited research has explored how green housekeeping implementation affects perceptions of service quality in the independent business hotel segment in a metropolitan city like Surabaya, where guests are predominantly domestic businesspeople who prioritize speed, practicality, and physical comfort over ecological values.

Second, there is an empirical gap in the form of inconsistent research findings in previous literature regarding the impact of green practices on service quality. On the one hand, research by (Chang et al., 2024) and (Anderson, 2025) shows that the implementation of environmentally friendly concepts significantly improves hotel image and guest emotional satisfaction, which in turn boosts their assessment of overall service quality. Conversely, an experimental study conducted by Baker et al. 2014) showed contradictory results, where restrictions on standard housekeeping services (such as reducing the frequency of room cleaning to save energy) were often perceived by guests as a disguised cost-cutting strategy under the guise of environmental concerns, which ultimately lowered service quality scores. This inconsistency suggests the presence of moderating or mediating variables, such as housekeeping staff communication strategies and guest education, that have not been explored in depth (Han & Chan, 2013).

Third, from an operational perspective, there is a methodological gap. Most previous studies measured green housekeeping solely from a macro-management (top-down) perspective through perception questionnaires, without examining how these green standard operating procedures (SOPs) are internalized by frontline employees in the field (Al-Aomar & Hussain, 2017). Service quality in housekeeping relies heavily on human interaction and staff diligence. When housekeeping staff are burdened with more complex green procedures – such as sorting organic and non-organic waste in trolleys or using alternative chemical dosages that require longer reaction times – this has the potential to increase workload and decrease room cleaning efficiency (Chan & Hawkins Rebecca, 2021)If staff productivity declines, the quality of physical room cleanliness, the most fundamental dimension of housekeeping service quality, is compromised.

Given the strategic location of the Tunjungan Hotel in Surabaya, located in a densely populated central business district, environmental challenges such as clean water supply and solid waste management are significant daily operational issues. Implementing green housekeeping is no longer merely a greenwashing option, but an absolute necessity for long-term business



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sustainability. However, management faces a real dilemma: how to design and implement green housekeeping SOPs that significantly reduce environmental impact while simultaneously raising – or at least maintaining – the level of service quality required by four-star hotel standards. Failure to align these two aspects can result in decreased occupancy rates and damage the hotel's reputation on online review platforms.

Based on the accumulation of research gaps and problematic realities above, this research is crucial to conduct. This research aims to analyze in depth how the implementation of the green housekeeping concept is carried out at the Tunjungan Hotel Surabaya, evaluate its impact on service quality dimensions (such as tangibles, reliability, responsiveness, assurance, and empathy), and formulate an optimal operational integration model. The results of this study are expected to provide theoretical contributions in enriching the literature on green hospitality management in the context of urban hotels in developing countries, while providing practical guidance (managerial implications) for hotel practitioners in Surabaya in executing environmentally friendly operational transitions without sacrificing customer satisfaction expectations.

METHODS

The research method used in this study is a qualitative study with a case study approach. Qualitative methods were chosen because the researcher wanted to explore, understand, and describe contemporary phenomena in depth from the perspectives of those directly involved in the field (Creswell, 2014). The case study approach was deemed most appropriate because this research focuses on a single, bounded system: the operationalization of the green housekeeping concept at the Tunjungan Hotel in Surabaya. Through this design, the researcher not only examined the surface of the phenomenon but also holistically examined how environmentally friendly Standard Operating Procedures (SOPs) were implemented, the cultural and structural barriers faced by staff, and how these dynamics impacted the quality of service perceived by guests at this urban hotel.

Data Sources. This study utilized primary data collected directly through interviews, while secondary data were obtained from internal hotel files in the form of internal reports.

Sampling Technique. The sampling technique used in this study was purposive sampling, selecting individuals deemed to have the best understanding of the problem and possess information-rich cases related to housekeeping operations and service quality. Informants in this study were divided into three, namely (1) Management (Top-Down): Executive Housekeeper and General Manager (or Duty Manager). Information focus: Hotel vision, green policy basis, budget allocation, and managerial constraints. (2) Implementing Parties (Frontline): Housekeeping Supervisor, Room Attendant (room cleaning staff), and Laundry Staff. Information Focus: Actual workload, implementation of eco-chemicals, technical issues in rooms, and direct friction with guest expectations. (3) Consumers (Bottom-Up): Hotel guests who stayed at least two nights and participated or interacted directly with the green program (e.g., responding to the towel-reuse card program). Information Focus: Perceptions of comfort, physical satisfaction with the room, and understanding of the hotel's environmental education messages.

Data Collection Techniques. The first data collection technique used in-depth interviews using semi-structured interview guidelines, and the entire interview process was recorded using an audio recorder with the informant's informed consent. The second was field observation, where the researcher directly observed housekeeping operational activities. Observations included: staff compliance with eco-chemical dosages, the process of sorting organic and inorganic waste in the trolleys, the placement of green educational media in the bedrooms/bathrooms, and guests' verbal



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responses when staff explained the linen efficiency program. Third, in the Documentation Study, researchers analyzed written documents related to internal green housekeeping-based room cleaning procedures and statistical data on waste/energy reduction.

Data Validity. To assess the validity, reliability, and objectivity of the results of this qualitative study, researchers applied four criteria for data validity according to Lincoln and Guba (in Creswell, 2018). First:

1. **Credibility (Internal Validity)** was tested through triangulation techniques. Researchers conducted source triangulation (comparing data from interviews with managers, staff, and guests) and method triangulation (matching staff interview results with field observations and documentary evidence). Furthermore, member checking was conducted, which involved reconfirming interview transcripts with informants to ensure there were no misinterpretations.
2. **Transferability (External Validity):** The researcher compiled the report using a detailed description technique (thick description). The operational context, characteristics of Hotel Tunjungan, and its socio-cultural dynamics are presented in great depth so that the results of this study can be used as a reference or applied to other similar urban hotel contexts.
3. **Dependability (Reliability):** This was conducted through an audit trail process, in which the researcher transparently documented the entire research process, from the initial design, raw field notes, and audio recordings to the draft coding analysis.
4. **Confirmability (Objectivity):** This ensures that conclusions are based purely on field data, not on the researcher's preferences, assumptions, or subjective biases.

Data Analysis Techniques. Using the qualitative data analysis model from Miles, Huberman, and Saldaña (2014), which consists of three stages. First, data condensation refers to the process of selecting, simplifying, focusing, discarding, and transforming raw data obtained from field notes, interview transcripts with management, staff, guests, and internal documents at Hotel Tunjungan Surabaya. Second, data presentation involves descriptively explaining how the green housekeeping operational chain (eco-chemical use, towel reuse policy, and waste sorting) operates at Hotel Tunjungan Surabaya. A matrix is created linking the Green Housekeeping Practice Indicators (X) with the five Dimensions of Service Quality (Y) from the perspectives of hotel management and staff. Third, conclusion drawing and verification involve formulating conclusions from the presented data patterns. The initial conclusions drawn are still tentative and will be continuously tested for accuracy throughout the research.

RESULT AND DISCUSSION

Implementation of the Green Housekeeping Concept at Hotel Tunjungan. Through data condensation, three major clusters of green housekeeping practices were identified at Hotel Tunjungan Surabaya:

1. **Energy and Water Conservation.** Hotel Tunjungan's administration and management confirmed that water and energy efficiency is implemented consistently through preventative measures embedded in staff's daily activities, including turning off the water supply and all electrical appliances (air conditioning, lights, and TVs) in the room immediately after guest check-out or while the Room Attendant is cleaning the room. Energy usage is carefully adjusted based on daily room occupancy rates to avoid waste in corridors or on empty floors.
2. **Substitution of Eco-Friendly Products & Amenities.** The hotel has changed its standard room amenities by replacing plastic toothbrushes with wooden handles. In addition, single-use



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bottled mineral water bottles in rooms have been removed and replaced with dispensers in every corridor to reduce plastic waste drastically.

3. Use of Eco-Chemicals. Hotel Tunjungan Surabaya demonstrates an ecological commitment to green procurement, and all products required by housekeeping are environmentally friendly and use low-carbon chemicals. This is crucial for preventing hotel wastewater pollution and maintaining healthy in-room air quality for both guests and staff.
4. Solid Waste Management. Hotel Tunjungan Surabaya implements a unique solid waste management method. In addition to collaborating with a third party for separate collection of hotel waste, the hotel has an environmentally philanthropic policy for linen management: linen or towels that no longer meet star-rated hotel standards but are still functional are not immediately thrown away as waste (a zero-waste effort), but are instead donated to those in need.

Eco-Friendly Based Hotel Service Quality at Tunjungan Hotel. The results of the study found that the quality of eco-friendly services at the Tunjungan Hotel Surabaya was considered very good, stable, and did not reduce customer satisfaction. (First) The quality of room cleanliness is maintained where the implementation of the environmentally friendly concept (green) is proven not to reduce the physical cleanliness standards of the rooms at the Tunjungan Hotel and the cleanliness aspect is an absolute thing that must be maintained, in addition to that, room cleanliness is still well maintained even though the hotel minimizes the use of harsh chemicals and switches to low-chemical cleaning products (eco-chemical). (Second) Positive guest response to the Linen Reuse Program, namely the reuse of towels or bed sheets (linen reuse), is often a critical point of complaint in other hotels. However, at the Tunjungan Hotel Surabaya, the quality of this dimension of service is responded to very well by consumers, where guests have no problem and accept the policy well. (Third) The balance between the efficiency of eco-friendly service quality and guest satisfaction at the Tunjungan Hotel is considered successful in maintaining service quality by aligning operational efficiency without reducing the basic rights or comfort of guests. Management also explained that maintaining this balance involves not reducing guests' physical needs, but rather simply replacing supporting materials or amenities with eco-friendly versions. With this strategy, the eco-friendly transition does not hinder customer satisfaction. Furthermore, management carefully implements efficiency measures by monitoring daily room occupancy rates. (Fourth) Minimal Negative Feedback or Complaints.

The lack of negative feedback or specific complaints from guests regarding the green policy reinforces the success of Hotel Tunjungan's eco-friendly service. Guests generally already have a good understanding, supported by the hotel's inclusion of written information about the green program in the room guidebook (compendium).

Influence on Service Quality Dimensions. Based on the research results, the implementation of eco-friendly operations does not reduce the standard of service quality at all, but rather provides added value where the quality of Cleanliness is still guaranteed (Tangibles Dimension): Despite using low chemical cleaning materials, the quality of physical cleanliness of the rooms is reported to be very well maintained. Good Acceptance of Linen Reuse Program: The towel/sheet reuse program has received a positive response from customers. Administrative and management staff confirmed that so far guests have not felt any problems and have received this policy well and effective education through the compendium. The key to the success of stable service quality at Hotel Tunjungan is transparency of information. The hotel provides a "Go Green" program notification



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sheet in the room guidebook (compendium), so that almost all guests understand and support the movement.

The Impact of Green Practices on Service Quality. The results of the analysis show interesting dynamics of perception between management, operational staff, and guest expectations in the implementation of green housekeeping (Low Chemical, Linen Reuse, Energy, Product Substitution & Environmentally Friendly Amenities,) which has a positive impact (reputation) consisting of (1) Eco-Friendly Education, (2) Room cleanliness is maintained to the maximum, (3) Hotel image is improved and challenges (Limitations) consisting of (1) Complaints about Missing/Not Replaced Linen, (2) The cost of environmentally friendly chemicals is more expensive.

Tangible Dimensions (Physical Facilities) and Room Cleanliness. One of the most crucial findings of this study is that an eco-friendly approach does not compromise the physical cleanliness of the cleaning room, even when using products with lower chemical content. This refutes concerns that eco-friendly cleaning formulas are inferior to conventional harsh chemicals.

Responsiveness and Reliability Dimensions through the Linen Reuse Program. The implementation of the Linen & Towel Reuse Program (reusing towels and bed linens during guest stays) has generated varied responses. Research data shows that.

1. **Reliability Dimension Through the Linen Reuse Program.** The Reliability dimension measures a hotel's ability to deliver promised services accurately, consistently, and reliably. At Hotel Tunjungan Surabaya, the reliability of this program is shaped by several factors, including: First, standardized staff training on a regular basis; operational staff reliability is maintained through regular training directly from the corporate side regarding environmentally friendly practices. This ensures that all front-line staff have consistent skill standards in implementing green housekeeping practices. Second, the reliability of Information Management (Compendium): The hotel does not immediately reduce the intensity of linen changes unilaterally, but rather builds information reliability by placing an official notification sheet of the "Go Green" program in the compendium (room guidebook). This makes the promise of environmentally-based services transparent and clearly understood by guests from the moment they first enter the room. Third, the consistency of cleanliness quality, implementing a program limiting washing or daily linen changes, the hotel's reliability in providing clean rooms remains a top priority that cannot be negotiated and is reported to be well maintained.
2. **Responsiveness Dimension Through the Linen Reuse Program.** The Responsiveness dimension measures the staff's alertness, speed, and accuracy in responding to guest needs, as well as the hotel system's readiness to minimize service conflicts when environmental programs are implemented. These include: First, seamless communication reception, where the current implementation of the linen reuse program at Hotel Tunjungan Surabaya is considered highly adaptive and responsive. The administration and management confirmed that hotel guests tend to receive this program very well. Second, flexibility of service based on field needs, where management emphasized that their main principle in saving water/detergent use through linen reuse is carried out carefully and does not reduce guest needs. This means that if a guest requests a replacement for reasons of physical comfort, housekeeping staff will still respond promptly without delay. Third, intelligent substitution, where the hotel's responsiveness is realized not by reducing the portion of amenities provided to guests, but by changing or substituting supporting materials towards environmentally friendly ones. With this tactical approach, changes in cleaning operations at Hotel Tunjungan Surabaya do not become a stumbling block that sacrifices customer satisfaction or the speed of fulfilling needs.



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Assurance Dimension (Guarantee and Trust) Through Green Housekeeping Practices. The assurance dimension measures the staff's ability to foster trust, security, and confidence in the minds of guests through demonstrated knowledge, competence, and friendliness. At Hotel Tunjungan Surabaya, this assurance dimension is significantly strengthened through product standardization and transparent education, including (1) Room Health and Safety Guarantee (Eco-Safety). Through a management policy that requires the use of environmentally friendly cleaning materials with low chemical content, the hotel provides a guarantee of physical protection for guests. The use of these certified environmentally friendly cleaning products indirectly ensures that the air quality in the room is free from exposure to hazardous chemical residues. This provides a high sense of security, especially for family or business guests who are sensitive to strong odors or allergens from conventional cleaning products. In addition, there is (2) Staff competency assurance through corporate training; namely, guest trust is built from the professionalism of staff's actions in the field. The analysis results explain that this competency assurance is conditioned through regular corporate training. The regular training ensures that all front-line staff have in-depth knowledge (product knowledge) to answer all guest questions convincingly regarding the reasons behind the implementation of environmentally friendly operational standards.

Furthermore, (3) Transparency of Information via the Room Compendium. Guaranteed service certainty is also realized by placing written information about the "Go Green" program in the room guidebook (compendium). This strategic step eliminates guest suspicions or misperceptions – such as the assumption that the hotel is deliberately reducing bed linen changes to cut operational costs (cost-cutting under the guise of environmental concerns). The presence of this official information guarantees the hotel's legality and seriousness in carrying out its ecological mission.

The Dimension of Empathy (Empathy and Caring) Through Green Housekeeping Practices. The empathy dimension relates to the willingness of management and staff to provide sincere, genuine, and individualized attention to customers by understanding their specific needs. In the green hospitality ecosystem, empathy is tested when hotels must implement savings without making guests feel neglected in their right to comfort. At Hotel Tunjungan Surabaya, empathy is implemented very elegantly through the approach of (1) The Principle of Substitution Without Reducing Guest Comfort Rights. (2) Flexibility of Service that Prioritizes Guests: Empathy is also demonstrated by not enforcing environmental rules rigidly. Although the Linen Reuse Program (reusing towels/bedsheets) is implemented, its implementation still relies on the individual comfort of customers. (3) Environmental Philanthropy Approach (Social Empathy). Hotel Tunjungan Surabaya's sincere concern does not stop at guest service, but extends to the social realm. The practice of managing fabric waste at this hotel is considered very humane: old linen or towels that are replaced by new linen are not immediately thrown into industrial waste piles, but are collected and then donated to those in need. This management pattern shows that the spirit of the green housekeeping movement at Hotel Tunjungan is based on a deep sense of concern (empathy), both for the preservation of Surabaya's natural environment and the social welfare of the surrounding community.

Strategy to Maintain Balance between Efficiency and Guest Satisfaction. Tunjungan Hotel Management applies careful principles in balancing operational cost savings and guest satisfaction, including substitution without reducing guest rights, which emphasizes that management does not reduce basic guest needs, but only replaces supporting materials with environmentally friendly materials. Thus, guest comfort remains intact. Furthermore, there is sensitivity to occupancy levels



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where efficiency is carried out flexibly by monitoring room occupancy levels daily to optimize energy allocation and staff labor. Finally, regular training on the quality of staff reliability is strengthened through periodic special training from the corporate level (corporate training) so that understanding of green practices remains consistent.

Key Management Challenges and Solutions. Although internally operations run smoothly and there are minimal obstacles from the HR side, the biggest challenges faced by Hotel Tunjungan Surabaya are external, namely the lack of environmentally friendly products or suppliers of materials in the local market, as well as the relatively higher cost of procuring eco-friendly products.

Management Efforts. To address this issue, management is actively expanding its collaboration with various alternative suppliers to obtain more economical and competitive prices for environmentally friendly raw materials in the market.

CONCLUSION

Based on the analysis and discussion, this study concludes that the implementation of the green housekeeping concept at the Tunjungan Hotel in Surabaya has been carried out in a mature and structured manner through four main clusters: energy and water conservation, substitution of environmentally friendly amenity products, the use of eco-chemicals, and a unique solid waste management method. The implementation of this ecologically based operation has been proven to have a significant positive impact in boosting the hotel's image and reputation without reducing the standard of service quality perceived by customers.

From a service quality perspective, the tangibles remain optimally clean despite the use of a low-chemical formula. Service reliability is reinforced through standardized, regular corporate-level staff training and accurate information on environmentally friendly programs. Meanwhile, responsiveness and empathy operate adaptively, with linen reuse programs and the replacement of environmentally friendly raw materials tactically executed, prioritizing flexibility, individual guest comfort, and socio-philanthropic commitments. This operational balance is achieved through a smart material substitution strategy and careful monitoring of room occupancy levels. The main challenges faced are purely external, namely the limited supply of environmentally friendly products from local vendors and high procurement costs. These obstacles were successfully addressed managerially by expanding the network of partnerships with alternative suppliers to obtain economical and competitive raw material prices. For further research agenda, it is recommended that subsequent researchers expand the scope of the study by combining quantitative methods (mixed-methods approach) to statistically measure the level of guest emotional experiences and their impact on long-term consumer loyalty in urban hotel types in other large city areas.

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