Key Organizational and Operational Factors Influencing Environmental Sustainability Practices in Small to Medium-Sized Hotel Enterprises: A Literature Review

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ABSTRACT

Environmental sustainability in small to medium-sized urban hotels depends on both integrated organizational factors (leadership practices, supportive culture, and green HR policies) and operational factors (waste reduction, energy/water conservation, sustainable procurement, digital innovations). This literature review, based on the PRISMA protocol, considered studies spanning 38 diverse urban contexts, which indicate that environmental sustainability in small to medium-sized hotel enterprises depends on integrated organizational and operational factors. Key organizational influences include: 1) Leadership and management practices that forge a clear, shared vision; promote responsible decision‐making; and drive green human resource policies such as targeted training and employee engagement, and 2) A supportive organizational culture that embeds sustainability into core business strategy, emphasizes transparent communication, and aligns staff incentives with environmental goals. Operational factors reported across studies focus on effective resource management. These include robust practices for waste reduction, energy and water conservation, sustainable procurement, and the adoption of digital innovations that enhance process efficiency. External influences such as regulatory standards, customer expectations, and competitive market forces further stimulate the adoption of these practices. In 38 of the reviewed studies, these elements function as enablers, with only isolated cases noting policy limitations or mixed effects.

1. INTRODUCTION

Tourism plays a prominent role in the global economy, being one of the economic sectors that has recovered best after the COVID-19 pandemic, contributing 10% to global GDP [1, 2]. Hospitality is an important link in the chain, with outstanding figures in economic terms. In the United States, for example, spending on accommodation was expected to increase by around US$777 billion by 2025, with the number of jobs recovering to pre-pandemic levels [3].

Associated with its economic growth, there are environmental problems in this sector. By 2008, Tourism was recognized as a contributor to climate change, with an estimated greenhouse gas (GHG) emissions of close to 5%, with 75% coming from transportation [4]. This is in line with the study by Lenzen et al. [5] a decade later, which mentions that the contribution to GHGs increased to 8%. These figures are derived from methodologies calculated by direct or indirect emissions (such as the case of electricity consumption (UN Tourism)). Highlighting the significance and implications of the tourism sector on environmental effects, the Glasgow Declaration on Tourism was created in 2021, which seeks to commit to reducing GHG emissions by half by 2030 and achieving net-zero emissions by 2050 [6]. Other environmental problems related to water use, plastic waste generation, and biodiversity impacts are also significant in this sector [7].

Besides its contribution, it is important to consider the composition of the tourism sector according to the types of companies, by size, given the importance of the environmental effects generated by the sector. For example, in the United Kingdom, it is estimated that 99.6% of accommodation businesses are small and medium-sized enterprises (SMEs) [8]. Similarly, in the United States, it was estimated that in 2018 the sector contributed 8.8 million jobs, equivalent to 15.4% of the total contribution of SMEs in that country [9]. Given their share of the market, SMEs in the hotel sector have a responsibility for the environmental aspects and impacts associated with their activity.

Despite growing academic interest in hotel environmental sustainability, the existing literature shows fragmentation. Some studies focus on large chains [10, 11], are isolated case studies [12, 13], or analyze variables individually [14, 15]. In this regard, there is a lack of comprehensive synthesis that identifies and organizes the key variables (drivers, barriers, and contextual factors) that determine the success of environmental sustainability, specifically in the context of SMEs.

In response to this fragmentation, the main objective of this article is to conduct a systematic review of the literature to identify, categorize, and synthesize the key variables that influence the adoption and implementation of environmental

sustainability in hotel SMEs. The central research question was: "*What are the key organizational and operational factors influencing environmental sustainability practices in small to medium-sized hotel enterprises (SME) in urban settings?*".

To achieve this objective, the article is structured as follows: Section 2 details the review methodology, including search and selection criteria. Section 3 presents the results of the literature analysis. Section 4 discusses the implications of these findings. Finally, Section 5 offers conclusions, limitations, and an agenda for future research.

2. METHODOLOGY

This literature review followed the guidelines of the PRISMA 2020 statement (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) [16]. The methodological procedures used are detailed below.

2.1 Eligibility criteria

The study focuses on SMEs in the hotel sector. Regarding the concept of hotel SMEs, those typically defined as having

fewer than 250 employees or fewer than 150 rooms were considered. In the case of studies with different types of company sizes, those that included hotel SMEs as part of their sample were considered. Studies on SMEs in urban environments were also primarily considered. Likewise, the phenomenon of interest was the practices, strategies, or implementation of environmental sustainability.

The criteria for inclusion of sources were peer-reviewed scientific journal articles, high-quality conference proceedings, and book chapters. Theses (undergraduate, master's, or doctoral), editorials, news articles, or other literature review articles were not considered in the review. The sources explored were considered in the English language. Regarding the review period, the search was limited to articles published between 2015 and 2025.

2.2 Sources of information and search strategy

The Scopus, Web of Science, Science Direct, and Google Scholar databases and indexes of scientific articles were consulted to search for articles. The searches of the sources were carried out between January 2025 and September 2025. The search chain logic employed is shown in Table 1.

Table 1. Literature review synthesis

Parameter	Description / Criteria
Databases	Scopus, Web of Science (WoS), Science Direct
Search Fields	Article Title, Abstract, Keywords
Timeframe	2020 to 2025
Language	English, Spanish
Search String (Scopus syntax)	("SME*" OR "Small and Medium Enterprise*" OR "small business*" OR "small firm*") AND ("hotel*" OR "hospitality" OR "accommodation*" OR "lodging") AND ("environmental sustainability" OR "green practice*" OR "environmental factor*")
Google Scholar Strategy	Used as a complementary source. Search limited to the first 100 results sorted by relevance using simplified keywords: "SME hotel sustainability", "green practices small hotels".
De-duplication	Mendeley Reference Manager was used to merge results; duplicates were removed and then verified manually.

To ensure methodological rigor and replicability, a structured search was conducted across Scopus and Web of Science databases. The search string employed Boolean operators (AND/OR) and wildcards (*) to capture variations of key terms related to SMEs, the hotel sector, and environmental sustainability (see Table 1). The search focused on the fields of 'Article Title, Abstract, and Keywords'. Google Scholar was utilized as a secondary source to reduce publication bias, screening the first 100 relevant results. Results were exported to Mendeley for de-duplication.

Three researchers participated in the search for sources, who were responsible for searching, selecting, filtering, and analyzing the selected sources. The results of the database searches were exported to a spreadsheet in Microsoft Excel, organized by the columns: Source type, authors, title, year of publication, abstract, and source database. The results were then consolidated, and duplicates were removed using Mendeley and subsequently through manual review. Afterwards, inclusion and exclusion criteria were applied to perform preliminary filtering. Attempts were made to access the full text of the remaining articles, and those that could not be accessed due to restrictions were removed. The study relied primarily on the systematic database search to ensure reproducibility. Backward referencing was not applied to avoid introducing selection bias towards older publications.

Following the data extraction, a thematic analysis was conducted to categorize the findings into a structured

framework. papers were classified and analyzed using the codebook shown in Appendix 1. This codebook outlines the structure used to categorize data extracted from the selected studies, based on three main dimensions: Operational Indicators, Internal Determinants, and External Factors.

This categorization allowed for a systematic synthesis of the literature. To ensure reliability, the coding process focused on identifying specific keywords within the results and discussion sections of the selected papers. The defined categories in the codebook minimized ambiguity during the classification process.

Three researchers independently pilot-coded a random sample of 5 articles to test the codebook's clarity. Discrepancies in coding were discussed until consensus was reached, leading to a refinement of the code definitions. While a formal Cohen's Kappa was not calculated for the entire dataset due to the qualitative nature of the synthesis, the inter-coder agreement process involved continuous peer debriefing and cross-checking of extracted data to minimize subjective bias and ensure internal consistency [17].

3. RESULTS

3.1 Study selection process

Following the search protocol described in the

Methodology section, the initial search yielded a total of 79 records, extracted from Scopus, Web of Sciences, Science Direct, and Google Scholar. Upon consolidation, a total of 12 records from duplicate sources were removed. After removing duplicates, 67 records were filtered, of which 28 were discarded for not meeting the inclusion criteria (e.g., not focusing on SMEs or not addressing environmental practices), and 6 for not being accessible in full text.

A total of 33 records were considered for full-text review. Of these, 3 were not included due to lack of empirical data. Finally, 30 studies met all eligibility criteria and were included for literature analysis (see Figure 1).

Regarding the analysis of the study design, it was found that studies using quantitative methods predominated, with 25 of them. It was also found that 4 used mixed methods; 4 used a qualitative approach; 3 studies used descriptive, content analysis, or conceptual approaches; and 2 studies used comparative analysis or review designs.

In terms of geographical context, 5 studies were found in Spain (including Barcelona, Catalonia, Tenerife); three in India (including Uttarakhand); two in China; three in Taiwan; two in Malaysia; two in Turkey; one in Poland, Italy, Zanzibar, South Africa, Scotland/United Kingdom, Portugal, Egypt, Oman, Ethiopia, Malawi, Saudi Arabia, Denmark, Maldives, Greece, New Zealand, and Thailand. One study was multinational (China, Japan, Australia, etc.), and four studies were global or included multiple countries.
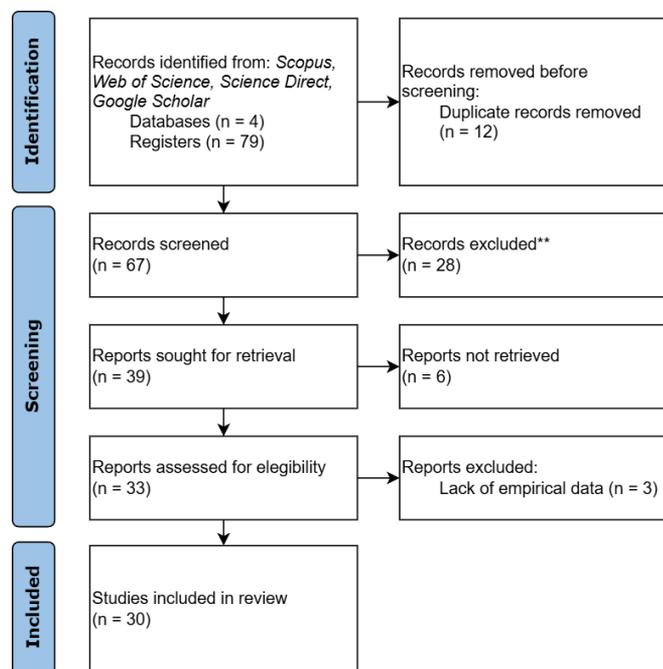

Figure 1. Flow diagram of the literature review

Regarding the main subject area on which the study focused, 12 studies focused on environmental management, greening, or the implementation of environmental management systems; 9 studies focused on innovation, digital transformation, or the circular economy; 7 studies focused on sustainability strategy, policy, or certification; 5 studies focused on human resources, organizational culture, or leadership related to sustainability; 3 studies focused on sustainability reporting, transparency, or communication; and 2 studies focused on the Sustainable

Development Goals or principles of ecological philosophy.

Table 2. Frequency of identified variables across the selected studies (n = 30)

Dimension	Category (Code)	Freq. (%)
Operational	Energy & Emissions (OP-ENE)	83.9%
	Waste Management (OP-WST)	71.0%
	Water Management (OP-H2O)	61.3%
	Monitoring & Reporting (OP-MON)	38.7%
Internal	Leadership & Strategy (INT-LEAD)	45.2%
	Financial & Costs (INT-FIN)	48.4%
	Human Capital (INT-HUM)	35.5%
	Innovation (INT-CAP)	29.0%
External	Market & Stakeholders (EXT-MKT)	51.6%
	Regulatory (EXT-REG)	25.8%

The methodological quality of the 30 empirical studies included was assessed using the MMAT 2018 protocol. The evaluation revealed a generally high quality of evidence, with 65% of studies achieving a perfect score (5/5) (Table 2). However, a recurrent weakness identified in quantitative survey-based studies was the use of non-probability sampling methods (convenience or snowball sampling) or low response rates (< 20%), which introduces a potential non-response bias (Criteria 4.2 and 4.4). Studies utilizing secondary data or web-scraping techniques [16, 28] demonstrated high robustness due to large sample sizes covering nearly the entire target population.

A sensitivity analysis was conducted. Excluding studies with a high risk of bias (Score $\leq$ 3/5) did not alter the main thematic findings regarding the prevalence of energy and waste management practices, suggesting that the lower-quality studies were consistent with the broader body of literature.

Table 2 illustrates the prevalence of each thematic category within the analyzed literature. The code refers to the definitions established in the Thematic Codebook (See Appendix 1). This analysis reveals a clear hierarchy in the variables addressed by the literature.

Dominance of Operational Practices: The results indicate a heavy focus on operational efficiency, with Energy Management (OP-ENE) appearing in 83.9% of the studies, followed closely by Waste Management (71%) and Water Conservation (61.3%). This high frequency suggests that for hotel SMEs, environmental sustainability is primarily operationalized through tangible, cost-saving measures rather than abstract policies.

The Driver of Competitiveness: In terms of drivers, Market & Stakeholder Pressure (EXT-MKT) appears in over half of the studies (51.6%), often linked to financial determinants (48.4%). This confirms that the adoption of green practices in SMEs is largely driven by the dual need to satisfy customer demands and achieve economic efficiency, rather than purely regulatory compliance (which appears in only 25.8% of studies).

The Emerging Role of Leadership: While less dominant than operational factors, Leadership & Strategy (45.2%) emerges as a critical enabler, particularly in recent studies, highlighting a shift from viewing sustainability as a technical task to strategic management capability.

Table 3. Descriptive overview of analyzed studies

Study	Study Design	Geographic Context	Sample Size/Type	Primary Focus Area
Teruel Gutiérrez [18]	Quantitative	Barcelona, Spain	Small and medium-sized enterprises (fewer than 10 employees)	Internal elements of ecological hotels, performance comparison
Calisto et al. [19]	Qualitative	Portugal	40 chains, 18 interviews	Sustainability strategies, chain size
Dey et al. [20]	Quantitative	India	300 small and medium-sized enterprise hotel executives	Circular economy adoption, internal capabilities
Kusa et al. [21]	Quantitative	Poland	101 one- and two-star hotels	Greening, performance, flexibility, cooperation
Shashi et al. [22]	Quantitative	India	312 managers	Sustainability policy, environmental/financial performance
Ak et al. [23]	Quantitative	Antalya, Türkiye	572 employees/managers	Responsible leadership, green culture
Parpairi [24]	Descriptive case studies	Greece	No mention found	Energy saving, environmental policies
Song and Wei [25]	Quantitative	Global (29 countries)	No mention found	National culture, environmental practices
Pérez López et al. [26]	Quantitative	Spain	1,175 small and medium-sized enterprise hotels	Classification of sustainability practices
Seow et al. [27]	Quantitative	Malaysia	288 small and medium-sized enterprise green hotels	Strategy agility, digital capability, open innovation
Hamzah et al. [28]	Quantitative	Malaysia (Klang Valley)	252 small and medium-sized enterprise hotels	Environmental Management System implementation, institutional influences
Iraldo et al. [29]	Quantitative	Italy	317 HORECA (Hotel, Restaurant, Catering) small and medium-sized enterprises	Pro-environmental strategies, competitiveness
Mdoda et al. [30]	Mixed methods	Cape Town, South Africa	30 hotels	Water/waste management, Sustainable Development Goals
Mu et al. [31]	Quantitative	China	163 small and medium-sized enterprises (482 responses)	Corporate Social Responsibility orientation, strategic business performance
Hsu and Pao [32]	Mixed methods	Taiwan	No mention found	Food waste, environmental sustainability
Bratton [33]	Qualitative case study	Scotland	1 National Health Service conference center	Talent development, environmental management
Horng et al. [34]	Mixed methods	Taiwan	No mention found	Sustainable service innovation framework
Aznar et al. [35]	Quantitative	Barcelona, Spain	No mention found	Sustainability commitment, performance
Piya et al. [36]	Quantitative	Oman	No mention found	Green management practice indicators
Bekele et al. [37]	Quantitative	Ethiopia	No mention found	Digital transformation, environmental sustainability
Khonje et al. [38]	Qualitative	Malawi	2 hotels	Governance, policy enforcement
Ho et al. [39]	Quantitative	Taiwan	No mention found	Green marketing orientations, COVID-19
Rubio-Mozos et al. [40]	Conceptual, qualitative	Tenerife, Spain	1 small and medium-sized enterprise, focus group	Ecosophical values, Sustainable Development Goals
Alhemimah et al. [41]	Quantitative	Saudi Arabia	408 employees (5-star hotels)	Green management, barriers/drivers
Moosa and He [42]	Quantitative	Maldives	116 operations	Environmental management, regulation
Hawela et al. [43]	Quantitative	Turkey	346 employees (5-star hotels)	Green Human Resource Management, eco-friendly behavior
Sun and Nasrullah [44]	Quantitative	China	309 employees	Market/customer pressures, green innovation
Guruge [45]	Content analysis	New Zealand	10 hotel groups (208 providers)	Environmental sustainability policies, Global Reporting Initiative comparison
Dani et al. [46]	Descriptive	Uttarakhand, India	No mention found	Ecological approach, green hotels
Rodríguez et al. [47]	Comparative analysis	Global	100 hotel companies	Sustainability certifications

3.2 Identification and categorization of key variables

The identification of key variables related to environmental sustainability in hospitality SMEs encompasses both the specific environmental practices they implement and the internal and external factors that drive or limit such adoption [20, 28, 41]. The key variables extracted from the literature review are presented in Table 3.

3.2.1 Operational environmental impact indicators

These variables reflect the areas of operation where hotel SMEs should focus their efforts to reduce their environmental impact, often with the aim of achieving efficiency and reducing operating costs. The variables can be summarized in the five categories listed below:

Energy and Emissions Management:

Energy Consumption and Efficiency: Energy conservation is a fundamental practice. It is measured by energy consumption per occupied room (kWh/occupied room) [18, 19, 21-24, 41].

Investments in Renewable Energy: Use of alternative energy sources such as solar or wind power, and consumption of renewable energy [21].

Polluting Gas Emissions: Reduction of emissions, including direct and indirect emissions of CO_2 equivalent per occupied room (kg CO_2e/occupied room) [21, 25].

Water Management:

Water Consumption and Conservation: Reducing water consumption is a crucial environmental indicator. It is measured in liters of water consumption per occupied room (l/occupied room) [18, 19, 21, 23, 30, 41, 45].

Effluent Management: This includes the disposal of water as waste and the control of water withdrawal and discharge. Pay attention to water leaks [23, 45].

Waste Management:

Solid Waste Minimization, Recycling, and Reuse: Practices to reduce waste generation [21, 23, 30, 32, 41]. Recycling of plastics, glass, and other materials. Waste generation is measured in kg/occupied room [23].

Procurement and Products:

Use of Eco-Friendly/Green Products: Investment in the use of green food and non-food products. Reduction in the purchase of non-renewable materials and chemicals [21, 29].

Monitoring and Reporting:

Environmental Performance Monitoring: Efforts to keep management levers under control, collect data and indicators to support effective environmental management [21, 29, 36].

Environmental Reporting: Measures such as identifying environmental costs in cost accounting and reporting on voluntary initiatives and regulatory approaches [42].

3.2.2 Internal determinants and capacities

These organizational elements are crucial for SMEs to adopt and maintain environmental sustainability practices:

Leadership and Management Strategy:

Senior Management/Entrepreneur Commitment: A strategic commitment by senior management to environmental issues is a key determinant of competitive success and the implementation of the Environmental Management System (EMS) [28, 29, 43].

Responsible Leadership: This has been shown to positively affect environmental performance and organizational green culture [23, 31].

Financial Resources and Costs (Barriers):

Implementation Costs: Costs are a significant obstacle for SMEs, including investment in environmentally friendly products and machinery, as well as the costs of inspection and eco-certification [21, 41].

Resource Constraints: SMEs face greater difficulties in adopting green innovations due to financial limitations and resource scarcity [20, 28].

Company Size: The minimum size requirement is a factor in applying for certifications such as ISO 14001 due to administrative and operational costs [35].

Human Capital and Culture:

Employee Awareness and Training: Employee awareness, knowledge, and training are vital to the implementation of environmental management practices (EMPs) [20, 22, 23, 28, 33, 41].

Employee Eco-Friendly Behavior: Eco-friendly employee behavior amplifies the influence of green culture on environmental outcomes [23, 43].

Green Human Capital (GHC): This relates to employees with high environmental competence and motivation to support sustainability [20, 43].

Green Organizational Culture: Acts as a mediator between responsible leadership and environmental performance [22, 23, 46].

Capabilities and Innovation:

Technological Support/Innovation: The need to adopt innovations to successfully implement new GPAs [25, 34, 37, 41].

Green Absorptive Capacity (GAC): An important factor that involves observing the legislative environment, consumer behavior, and competitors' actions with regard to sustainability [20, 26].

Green Dynamic Capabilities (GDC): Essential for adaptive Circular Economy (CE) strategies and have the greatest effect on CE practices [20].

Entrepreneurial Competence and Open Innovation: These have a positive impact on sustainable competitive advantage [27].

3.2.3 External factors (Pressures and influences)

Hotel SMEs are subject to external influences, which are key variables in their environmental commitment:

Regulatory Influences and Laws (Institutional Environment):

Government Regulations and Laws: The existence of laws, regulations, and regulatory frameworks drives the implementation of green practices [28, 41, 42, 44].

Environmental Regulation and Reporting: These factors positively mediate the effect of environmental management practices on corporate sustainability [42].

Market and Stakeholder Pressures:

Customer Influence/Demand: Customer pressure significantly encourages green innovation and sustainability. Customers are increasingly willing to pay a premium for eco-friendly accommodations [28, 44].

Competitor Pressure: Competitive pressure promotes green innovation and sustainability [28].

Stakeholders (General): These include governments, owners, investors, and customers. They consider non-financial indicators such as energy/water use and waste generation to be important [38, 40].

Environmental sustainability in hotel SMEs depends on specific operational actions (energy and water consumption, waste management), internal drivers (leadership, innovation

capabilities, resources), and external pressures (regulation and market demand).

4. DISCUSSION

The literature review identified the key variables for environmental sustainability related to small and medium-sized enterprises. The studies analyzed showed that both organizational and operational factors are important for advancing environmental sustainability in small and medium-sized hotel businesses in urban environments. In this regard, four aspects to be analyzed with respect to SMEs and their environment were identified in relation to the environment: the organization's behavior in addressing environmental issues; the pressure exerted by the environment; operational factors; existing barriers; and the diversity of organizations.

In terms of commitment to leadership, a culture of support, and employee engagement, these are fundamental to the adoption and effectiveness of environmental sustainability. This is relevant even in small organizations, where culture plays a key role in achieving the internalization of environmentally friendly practices. Likewise, employee

ownership and the impression they can convey of environmental commitment can affect customers' perceptions of the organization's sustainability.

On the other hand, external pressures, including regulation, customer demand, and competition, are strong motivators for sustainability practices. The promotion of sustainable practices by the government, on the one hand, as well as more environmentally demanding customers, ultimately motivates small organizations to promote environmentally friendly practices. In this same vein, operational factors such as waste, energy, and water management, sustainable procurement, and digital innovation are fundamental to effective sustainable practices, in addition to providing SMEs with better financial sustainability management.

In addition, Table 4 shows the findings of the systematic review with the five strategic pathways of the Glasgow Declaration on Climate Action in Tourism. The results reveal that while hospitality SMEs are active in the 'Decarbonize' (energy efficiency) and 'Regenerate' (waste/water) pathways due to cost-saving incentives, significant gaps remain in 'Measure' and 'Finance'. This suggests that policy interventions should prioritize subsidizing measurement tools and providing green financing specifically for smaller operators.

Table 4. Mapping of identified variables to the Glasgow Declaration pathways

Glasgow Pathway	Associated Review Variables (Codes)	Key Findings / Implications for SME Hotels
1. Measure	OP-MON (Monitoring & Reporting) OP-ENE (Energy/Carbon Metrics)	Evidence Gap: Only 38.7% of studies address monitoring. SMEs lack standardized tools to measure carbon footprints, relying mostly on basic utility bills rather than sophisticated indicators.
2. Decarbonize	OP-ENE (Renewable Energy) OP-PRO (Green Procurement)	Core Focus: Energy efficiency is the most reported practice (83.9%). However, deep decarbonization (e.g., transition to solar/wind) faces financial barriers (INT-FIN) in SMEs compared to large chains.
3. Regenerate	OP-H2O (Water) OP-WST (Waste/Circular Economy)	Operational Shift: Strong emphasis on waste reduction (71%) and water conservation. SMEs focus on efficiency (cost-saving) rather than ecosystem regeneration, indicating a maturity gap.
4. Collaborate	EXT-MKT (Stakeholder Pressure) INT-LEAD (Leadership)	Critical Enabler: Leadership (INT-LEAD) and stakeholder pressure (EXT-MKT) are vital drivers. Success depends on collaborating with local suppliers (OP-PRO) and engaging staff (INT-HUM).
5. Finance	INT-FIN (Financial Resources) EXT-REG (Regulations)	Major Barrier: Financial constraints (INT-FIN) are the primary hurdle. SMEs require external incentives or a clear ROI demonstration to fund the transition.

Despite the existence of factors that promote environmental sustainability in SMEs, barriers remain, especially in terms of resources, training, and policy coherence, but specific interventions—such as leadership development, human resource management integration, stakeholder engagement, and digital adoption—can improve sustainability outcomes.

Regarding the limitations of the study, it is important to consider the contextual diversity in which SMEs operate. The heterogeneity of contexts and study designs warrants caution when generalizing the findings, but the overall trends are robust across diverse settings.

5. CONCLUSIONS

The literature review systematizes a set of critical variables that shape environmental sustainability in hotel SMEs, integrating operational, organizational, and contextual dimensions. This categorization provides a conceptual framework for understanding the interaction between

environmental practices, internal capabilities, and external pressures, offering a basis for the development of explanatory and comparative models in heterogeneous environments. The identification of indicators such as energy efficiency, water management, and waste minimization, together with factors such as responsible leadership and dynamic green capabilities, reinforces the need for comprehensive approaches that transcend mere technological adoption.

Likewise, the findings show that sustainability in this sector does not depend solely on the availability of resources, but on the articulation between organizational culture, innovation, and environmental governance. This framework opens opportunities for future research aimed at evaluating the effectiveness of public policies, the role of the circular economy, and the influence of stakeholders in the transition to resilient models. In this regard, we propose moving toward empirical studies that validate these relationships and explore mechanisms of interorganizational collaboration as catalysts for sustainability in the hotel industry.

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APPENDIX

Appendix 1. Thematic Codebook was developed for the systematic review

Dimension	Category (Theme)	Code	Description & Key Indicators
1. Operational Environmental Impact Indicators	Energy and Emissions Management	OP-ENE	Practices focused on efficiency and reduction of carbon footprint. Indicators: Energy consumption (kWh/room), Renewable energy investments (solar/wind), CO_2 emissions (kg CO_2e/room).
	Water Management	OP-H2O	Strategies for conservation and effluent control. Indicators: Water consumption (l/room), disposal management, leak detection, withdrawal and discharge control.
	Waste Management	OP-WST	Activities to minimize solid waste generation. Indicators: Recycling (plastic, glass), reuse practices, waste generation metrics (kg/room).
	Procurement and Products	OP-PRO	Sourcing of sustainable materials. Indicators: Green food/non-food products, reducing non-renewable materials and chemical purchases.
	Monitoring and Reporting	OP-MON	Measurement and disclosure systems. Indicators: Data collection levers, environmental cost accounting, reporting on voluntary/regulatory initiatives.
2. Internal Determinants	Leadership &	INT-	The role of top-level decision-making. Indicators: Senior management

& Capacities	Management Strategy	LEAD	commitment, responsible leadership styles affecting green culture.
	Financial Resources & Costs	INT-FIN	Economic barriers and enablers. Indicators: Implementation costs (machinery, eco-certification), resource scarcity, company size constraints (ISO 14001 costs).
	Human Capital & Culture	INT-HUM	Workforce-related factors. Indicators: Employee awareness/training, eco-friendly behavior, Green Human Capital (GHC), Green Organizational Culture.
	Capabilities & Innovation	INT-CAP	Organizational ability to adapt and innovate. Indicators: Technological support, Green Absorptive Capacity (GAC), Green Dynamic Capabilities (GDC), Entrepreneurial competence.
3. External Factors (Pressures)	Regulatory Influences	EXT-REG	Institutional and legal environment. Indicators: Government regulations, reporting mandates, and legal system development level.
	Market & Stakeholder Pressures	EXT-MKT	Commercial and social drivers. Indicators: Customer demand/willingness to pay, competitor pressure, investor/owner requirements.