

## Identifying Essential Sustainability Knowledge Areas for Master's-Level Hospitality

### Graduates: A Preliminary Study of Thai Industry Perspective

### การศึกษาเบื้องต้นเกี่ยวกับองค์ความรู้ด้านความยั่งยืนที่จำเป็นสำหรับบัณฑิตระดับ ปริญญาโทสาขาวิชาการจัดการการบริการ: มุ่งมองจากภาคอุตสาหกรรมไทย

Received: November 02, 2025  
Revised: November 27, 2025  
Accepted: December 26, 2025

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### บทคัดย่อ

ความยั่งยืนได้กลายเป็นยุทธศาสตร์สำคัญของภาคบริการ ส่งผลให้เกิดความคาดหวังใหม่ต่อบัณฑิตให้มีองค์ความรู้ที่เกี่ยวข้องกับการดำเนินธุรกิจอย่างยั่งยืน แม้ว่าการวิจัยด้านการศึกษาความยั่งยืนที่มีอยู่จะได้เสนอกรอบสมรรถนะสำหรับบัณฑิตในสาขานี้แล้ว แต่ยังขาดงานวิจัยเชิงประจักษ์ที่ระบุเนื้อหาวิชา หรือหัวข้อความรู้ด้านความยั่งยืนที่ควรถูกบรรจุไว้ในหลักสูตรการจัดการการบริการเพื่อให้สอดคล้องกับความต้องการของอุตสาหกรรม งานวิจัยนี้มุ่งเติมเต็มช่องว่างดังกล่าว โดยระบุเนื้อหาความรู้ด้านความยั่งยืนที่ผู้ประกอบการในธุรกิจบริการคาดหวังให้ผู้สำเร็จการศึกษาระดับปริญญาโทเข้าใจ การวิจัยนี้อ้างอิงหัวข้อความยั่งยืนจากบทความวิจัยเป็นกรอบแนวทาง และให้วิธีสัมภาษณ์แบบกึ่งโครงสร้างกับผู้ให้ข้อมูลสำคัญ 10 คนจากภาคการศึกษา ภาคธุรกิจบริการ และองค์กรที่เกี่ยวข้องในประเทศไทย ข้อมูลที่ได้ถูกวิเคราะห์เชิงเนื้อหา และพบประดิษฐ์ขององค์ความรู้ด้านความยั่งยืน 11 ประการที่สำคัญต่อบัณฑิตระดับปริญญาโท สรุปผลการวิจัยซึ่งให้เห็นถึงการบูรณาการของสมรรถนะเชิงกลยุทธ์ เชิงปฏิบัติการ และเชิงระบบโดยเน้นการคิดเชิงระบบ (systems thinking) ความรับผิดชอบต่อการดำเนินงาน (accountability) และการวัดผลกระทบ (impact measurement) ผลลัพธ์ของการวิจัยนี้จึงได้เสนอกรอบแนวคิดสำหรับการออกแบบหลักสูตร เพื่อให้การศึกษาด้านการบริการสอดคล้องกับความคาดหวังของอุตสาหกรรมและแนวทางความยั่งยืนร่วมสมัย ทั้งยังเป็นหลักฐานเชิงประจักษ์ที่สะท้อนมุ่งมองของผู้ประกอบการในบริบทของประเทศไทย

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## ABSTRACT

Sustainability has become an important strategy of the hospitality sector resulting in new expectations towards graduates to have knowledge concerning sustainable business practices. Although existing research in sustainability has proposed a competency framework for graduates in this field, there is no empirical research specifying subject content or knowledge issues regarding sustainability that should be included in the hospitality management program in order to be in congruence with the needs of the industry.

In this research investigation, the researchers focus on fulfilling this gap by identifying sustainability-related contents that business operators in the hospitality business expect master's degree graduates to understand. In this research, the researchers used the reference of the sustainability issue from research articles as a framework. The technique of semi-structured interview was conducted with ten key informants from the education sector, the hospitality business sector, and related organizations in Thailand.

Data were analyzed using the technique of content analysis. Eleven sustainability knowledge issues essential for master's degree graduates were found. Findings showed the integration of strategies, operational, and systematic competencies with an emphasis on systems thinking, accountability, and impact measurement. The research findings propose a conceptual framework for curriculum designs in order to ensure that the study of hospitality is in consonance with the expectations of the industry and an approach of contemporary sustainability. It is also empirical evidence reflecting the perspective of the business operators in the context of Thailand.

**Keywords:** Hospitality Sector, Sustainability, Higher Education, Instructional Content, Practitioners

### Introduction

Sustainability has become a strategic priority across industries, creating rising demand for professionals with sustainability-related expertise (World Economic Forum, 2024). In hospitality, sustainability is now central to business strategy as hotels and restaurants adopt practices such as energy and water conservation in response to growing consumer preference for environmentally responsible services (EHL Insights, 2025). This trend has increased scholarly attention to sustainability in hospitality, emphasizing education's role in developing the competencies and mindset needed to lead sustainable business transformation (Blanco-Moreno et al., 2025; Nguyen et al., 2024).

However, the integration of sustainability principles in hospitality education still lags behind industry practices. Curricula often lack practical orientation and contemporary relevance, creating a gap between academic preparation and workplace expectations (Munjal & Sharma, 2023; Srivastava et al., 2023). Scholars therefore argue for curricula that are grounded in both research

and industry collaboration to ensure that graduates acquire applicable sustainability knowledge and leadership skills.

Several universities now offer sustainability-oriented programs—such as Florida International University's BA in Global Sustainable Tourism and NIDA's Master of Management in Integrated Tourism and Hospitality Management—yet many remain designed primarily from academic perspectives, with limited disclosure of how practitioner input informs course design. Consequently, empirical evidence remains scarce regarding the specific sustainability-related knowledge areas valued by hospitality employers.

This study addresses that gap by exploring the sustainability-related contents that Thai hospitality practitioners expect Master's-level graduates to understand. The research question is: "What sustainability-related contents do hospitality businesses expect master graduates to know?" Using semi-structured interviews with experts from academia, industry, and related organizations, the study identifies key knowledge areas that should inform curriculum design for sustainability management in hospitality. The research contributes to bridging the academia–industry gap in Asian hospitality education (Piramanayagam et al., 2023) and provides a grounded framework to align sustainability curricula with evolving professional and societal priorities (Pimpa, 2023).

The paper is structured as follows. It first reviews the literature on sustainability and sustainability-related contents in hospitality education. The methodology section then outlines the use of qualitative interviews and thematic analysis. The results present the key sustainability-related areas and contents identified from practitioners and academics. The paper concludes with key insights and implications for curriculum design.

## Literature Review

In sustainability education literature, studies that examine what graduates should be equipped with typically adopt a competency-based approach. Within this field, much of the work has been guided by the frameworks of Brundiers et al. (2010), Brundiers et al. (2021), and Redman and Wiek (2021). Competencies, in their works, are generally described as integrated combinations of knowledge, skills, and attitudes that enable learners to address complex sustainability challenges. These frameworks collectively position the goal of sustainability education as developing holistic capacities that allow graduates to act effectively and responsibly in diverse sustainability contexts.

The same competency-centered trend is evident in the hospitality education literature. When hospitality researchers discuss what graduates should be equipped with, they overwhelmingly refer to competencies. For example, Piramanayagam et al. (2023) describe Education for Sustainable Development as focusing on developing awareness, knowledge, competences, and attitudes toward the Sustainable Development Goals, while Blanco-Moreno et

al. (2025) emphasize the role of sustainability education in equipping professionals with the skills required to implement sustainable practices.

Curricula tailored to sectoral needs (e.g., energy, urban planning, finance) integrate specialized knowledge with general sustainability principles. Case studies in renewable energy, urban climate, and corporate sustainability demonstrate interdisciplinary course designs that are responsive to sectoral challenges and workforce demands. Such specialization supports employability and relevance in diverse sustainability careers (Tavanti, 2023).

Thus, both in the broader sustainability education field and in hospitality-specific contexts, the dominant focus remains on competencies—the abilities, skills, attitudes, and integrated capacities that enable professionals to act sustainably. However, as highlighted in studies such as Munjal and Sharma (2023) and Piramanayagam et al. (2023), existing discussions rarely extend beyond competency frameworks and offer very limited insight into specific contents or topics. This reveals a clear gap in the literature: the lack of empirical research identifying what contents or sustainability-related topics should be included in hospitality programs to align education with practitioners' expectations and real-world sustainability challenges.

An extensive literature review on sustainability-related topics was conducted. The search focused on curricular contents, defined as topics or subject matter areas that can be directly taught to meet industry expectations. This excludes skills, attitudes, or mindsets that many researchers have emphasized, as discussed above. A suitable point of departure for identifying such contents in hospitality education was the work of Blanco-Moreno et al. (2025), which provides a comprehensive bibliometric and thematic review of sustainability research within the hospitality sector. Their study systematically maps the evolution of sustainability topics across more than a decade of academic literature, offering an evidence-based overview of the key themes informing both industry practice and educational research. Because their analysis aggregates findings from multiple empirical and conceptual studies, it captures the dominant sustainability areas currently addressed in hospitality scholarship. Using this paper as a starting point ensures that the identification of sustainability contents is grounded in an objective synthesis of the sector's existing research landscape rather than in anecdotal or institution-specific curricula, while also allowing comparisons with practitioner expectations to be situated within the broader trajectory of how sustainability has been conceptualized academically in hospitality management.

To extract the knowledge contents from Blanco-Moreno et al.'s work, the findings section of the publication was analyzed to identify sustainability-related content, which was then conceptualized as topical material for teaching. Moreover, other publications (mentioned earlier) that reported relevant knowledge were also included, using the same procedure. One observation was that some identified knowledge areas were deemed procedural knowledge, such as problem-solving and decision-making processes. These were often originally classified as competencies or skills but were interpreted in this study as procedural knowledge because such knowledge is

a fundamental component of competence, integrated with other attributes to enable effective action (Redman & Wiek, 2021). Procedural knowledge is linked to how to perform domain tasks, and a cognitive/procedural memory system supporting skill learning and fluency (Sahdra & Thagard, 2003). In addition to disciplinary knowledge, which are content-dependent, procedural knowledge is crucial for advancing sustainability transformations (Redman & Wiek, 2021). This implies that knowledge is a foundational element within the broader concept of competence, although the term "knowledge competency" itself is not explicitly used as a distinct category within the primary framework of key competencies, which focuses more on integrated skills and abilities.

In this study, selected publications were used to extract teaching areas which serve as the analytical basis. Collectively, these studies highlight a broad range of sustainability content spanning environmental operations (e.g., energy, waste, and food management), social and ethical dimensions (e.g., CSR, responsible consumption), technological innovation (e.g., AI, big data, eco-innovation), and managerial or pedagogical themes (e.g., SDGs, sustainability marketing, and applied learning). This synthesis provides representative examples that inform the identification of sustainability-related contents for the study's methodological analysis.

## Methodology

Given the study's aim to explore the needs of practitioners and hospitality businesses, a stakeholder analysis was conducted to identify potential employers across various sectors. This study recruited ten informants representing diverse sectors related to sustainability and hospitality management in Thailand. The ten informants selected for the interviews represented a diverse cross-section of expertise. They included academic chairs from hospitality programs, CEOs of non-governmental organizations, managers from hotel businesses and the Stock Exchange, and consultants from the retail sector, ensuring a comprehensive range of perspectives on sustainability in hospitality.

The study focused on identifying contents, modules, or curricular elements suitable for teachable subject matter, not abstract competencies. Semi-structured interviews were conducted using a predefined set of open-ended probing questions, allowing flexibility for deeper exploration (Bryman, 2016). The interview questions comprised two sections: the first covered organizational background and the informants' involvement in sustainability practices, while the second addressed (1) experiences with sustainability graduates and their competencies; (2) trends in sustainability management; (3) the demand for graduates from a master-level program; and (4) recommendations for curriculum development. These questions were non-directive and encouraged participants to express, in their own terms, what sustainability-related knowledge or topics they expected hospitality graduates to possess. Follow-up questions were used only to clarify or expand on specific content areas raised by the interviewees. The informants were briefed on the study's purpose, ethical approval, interview questions, and schedule. With their consent,

the interviews were conducted and audio-recorded, accompanied by memo-taking. Each session lasted 60–75 minutes. The recordings were transcribed in Thai, translated to English using back-translation, and reviewed for accuracy and consistency.

The interview data were analyzed using content analysis, a systematic and replicable technique for identifying, categorizing, and interpreting patterns of meaning within textual data (Neuendorf, 2017). The analysis began with the identification of keywords and phrases based on the sustainability-related contents while allowing for the emergence of new contents or teachable sustainability topics. Coders independently reviewed the transcripts after a calibration session, during which they discussed and familiarized themselves with the predefined content categories to ensure shared understanding. Each coder then applied the content keywords to the data, and coding results were compared to assess consistency. Initial codes were drawn from the quotations of informants which discuss similar knowledge areas. Afterward, the themes emerged from the grouping of the initial codes. These themes which are discussed further represent teaching areas or subjects in sustainability management as recommended by the potential employers of graduates of the hospitality master's degree program. Discrepancies among the coders were resolved through discussion and consensus to enhance the validity of the final coding scheme.

## Results

The analysis revealed eleven distinct themes representing the essential sustainability knowledge areas expected of Master's-level hospitality graduates. These themes emerged from the consolidation of the initial codes, collectively capturing the integrated environmental, social, and governance (ESG) knowledge areas and contents that the industry expects new leaders to possess in the hospitality sector. The initial codes were drawn from informants' quotations that similar knowledge areas. Afterwards, the themes emerged from grouping of the initial codes. These themes which are discussed further represent teaching areas or subjects in sustainability management as recommended by the potential users of graduates of the hospitality master's degree program.

The most frequently occurring codes relate to sustainable reporting, encompassing sustainability measurements, documentation, and disclosure. A hospitality practitioner explained: "At this stage, it's about planning at a strategic level-envisioning the future, developing prototypes, testing them in practice, and then measuring the real impact. If we can measure it properly, we can report it and link it to indicators in the GRI report. For example, in terms of carbon substitution, most reports now ask: how much energy is converted? How much is the carbon footprint?"

The next two themes address stakeholder engagement—an inclusive process involving the community and related stakeholders and stakeholder capitalism, a governance framework creating value for stakeholders. An academic lecturer illustrated this with a rooftop vegetable garden initiative: "Such a business establishment can also contribute to regenerating their

neighborhoods. One project I particularly like is the 'rooftop vegetable garden' initiative. The idea was to share the produce with local residents, allowing city people to access fresh, chemical-free vegetables."

A non-profit staff member elaborated on stakeholder capitalism: "The essence of this work is the ability to embrace sustainability within the business itself. There is already knowledge available, but it should be adapted to fit into educational curricula. Essentially, we must assess context comprehensively, conduct stakeholder engagement, and understand all dimensions—local, national, and global. From there, we analyze ourselves through value chain and supply chain analysis to identify our materiality issues."

The 4<sup>th</sup> theme, sustainability strategy, addresses integrating sustainability into core business operations. A business case illustrates this: "Our brand now has a policy called X Impact, which is divided into two teams: First pillar is called Empower team, focusing on community engagement, and the other is Impact team focusing on sustainability initiatives." This quote reveals connections between stakeholder engagement and strategic sustainability implications.

The 5<sup>th</sup> theme encompasses sustainable operations which involve implementing responsible daily practices. A tourism business staff member noted: "Recently, we've designed tourism programs that increasingly use public transportation — moving away from private vans toward partially or fully public tours, like BTS-based itineraries."

The 6<sup>th</sup> theme captures holistic processes, reflecting comprehensive understanding of environmental, social, and economic systems. A non-profit staff member emphasized: "It's important to show that understanding sustainability is not a linear process. It requires holistic thinking to truly grasp complex interconnections."

Table 1 Thematic Analysis Results from Interviews

No.	Key Theme	Definition	Initial Codes
1	Sustainable Reporting	The systematic documentation, measurement, and disclosure of environmental, social, and governance (ESG) performance to internal and external stakeholders through standardized frameworks and transparent communication practices	Accounting and finance, Audit, GRI, TCFD, Impact reporting, Public disclosure, ESG report, Carbon footprint
2	Stakeholder Engagement	The inclusive process of identifying, involving, and maintaining dialogue with individuals and groups affected by or influencing organizational activities to build mutually beneficial relationships and inform decision-making	CSR, Community engagement, Stakeholder mapping and assessment, Project-based learning, HR management, Civic participation
3	Stakeholder Capitalism	A governance system where organizations create value for all stakeholders—including employees, customers, suppliers, communities, and shareholders—rather than maximizing shareholder value alone	TBL, Project-based learning, Equity, Inclusion
4	Sustainability Strategy	The integration of environmental and social considerations into core business strategy, creating long-term value through systematic planning, implementation, and monitoring of sustainability initiatives	Corporate strategy, Sustainability branding, ESG, Cost-benefit analysis
5	Sustainable Operations	The implementation of environmentally and socially responsible practices in day-to-day business activities to minimize negative impacts while maintaining operational efficiency and service quality	Operational expertise, Sustainability upskill, Integration of sustainability knowledge in operation, Health certificate
6	Holistic Process	A comprehensive worldview that recognizes the interconnectedness of environmental, social, and economic systems, enabling integrated thinking and decision-making for sustainability challenges	Holistic mindset, Sustainability mindset, Holistic perspective
7	Carbon Management	The systematic approach to measuring, monitoring, reducing, and offsetting greenhouse gas emissions throughout organizational operations and value chains	Carbon credit, Carbon footprint, Environmental Law, Reporting
8	Sustainable Design	The creation of products, services, and systems that minimize environmental impact and maximize social well-being throughout their lifecycle while maintaining functionality and aesthetic appeal	Eco-Design, Maximizing resource use, Minimizing waste, Water and waste management, Resource efficiency, Health and well-being
9	Sustainable Business Models	Innovative organizational structures and value propositions that create, deliver, and capture value while contributing to sustainable development and regenerative practices	Core business strategy, Social innovation for sustainability, Regeneration
10	Shared Value Creation	The business approach that generates economic value while simultaneously addressing societal needs and challenges, creating measurable benefit for both business and society	Return on investment, Triple bottom line, Interdisciplinary integration, Project-based learning
11	Sustainability Awareness	The knowledge and consciousness of sustainability issues, coupled with the ability to communicate sustainability narratives that inspire action and behavioral change among diverse audiences	Purpose-driven narrative, Public awareness development

The 7<sup>th</sup> theme addresses carbon management—procedural knowledge for measuring and reducing emissions. A hotel director observed: "When we look abroad, these practices have already become mandatory under the law. Airlines and hotels must include sustainability measures, and you can even see carbon charges clearly displayed when booking international flights. In Thailand, however, this remains unclear and inconsistent."

Sustainable design, the 8<sup>th</sup> theme, involves creating environmentally and socially conscious products and services. One participant explained: "When participants join our program and later return to their workplaces, they tend to have more ideas and can develop better, more innovative projects. Compared with those who have worked in the same department for many years — for instance, engineers in hotels who are responsible for wastewater systems, ventilation, air conditioning, or staff in the food, kitchen, housekeeping, or laundry departments. Even supervisors or heads of departments who have long relied on experience to respond to managerial expectations can now design projects with clearer purpose and broader understanding."

The 9<sup>th</sup> theme encompasses sustainable business models—innovative organizational structures and value creation. One respondent noted: "Employees who study sustainability must also learn to adapt and remain flexible amid constant change. Organizations with flatter structures can respond faster — for example, in my company, the CEO makes decisions directly, so adjustments happen rapidly."

The 10<sup>th</sup> theme addresses shared value creation, a business approach generating economic value while addressing societal needs. A participant illustrated this point : "We can also visualize data to demonstrate how sustainability actions affect costs — for example, showing that using certain materials can reduce expenses without cutting staff. Linking these insights to profit margins helps business leaders see the tangible benefits, which then encourages them to continue exploring broader sustainability strategies."

The final theme represents sustainability awareness — knowledge communication affecting behavioral change. A hospitality talent and development professional stated: "it's also about building public awareness in multiple dimensions, both online and onsite, so that sustainability becomes embedded." This comprehensive scope reflects the Thai hospitality industry's recognition that sustainability leadership requires multifaceted knowledge competencies.

## Discussion

These identified eleven themes can be organized into three distinct categories that represent different dimensions of sustainability knowledge required for master's-level hospitality graduates.

### *Operational and Strategic Balance*

The findings reveal a dual emphasis on operational implementation (sustainable operations, sustainable design) and strategic thinking (stakeholder capitalism, shared value creation). This balance suggests that industry stakeholders expect graduates to bridge the gap between sustainability theory and practice, translating high-level concepts into actionable initiatives within hospitality contexts. For

sustainability education, this prominence of findings is consistent with results from Blanco-Moreno et al. (2025) in that sustainability knowledge must focus on management methods and strategies, not treat it as an add-on CSR function.

The practitioner insights demonstrated a clear shift from focusing merely on operational compliance (e.g., waste management) to strategic business integration (e.g., shared value and sustainable business models). Content should cover organizational design, change management, and strategic planning processes.

#### *Systems Thinking Emphasis*

The emergence of holistic perspectives as a distinct theme, alongside the interconnected nature of other themes, underscores the industry's expectation for systems-level thinking. Graduates must understand how various sustainability dimensions interact within complex hospitality ecosystems, from local community impacts to global supply chain considerations. Our findings are aligning with Redman and Wiek's (2021) holistic processes in that understanding of conceptual relationships may need to integrate with system-thinking methodologies. Students need frameworks to understand how environmental, social, and economic dimensions interact rather than treating them as separate topics.

#### *Measurement and Accountability*

The prominence of sustainable reporting and carbon management themes indicates strong industry demand for quantification and accountability skills. Thai hospitality stakeholders recognize the increasing importance of evidence-based sustainability practices, requiring graduates who can measure, monitor, and communicate sustainability performance using internationally recognized frameworks. These findings are supported by previous works (Blanco-Moreno et al., 2025; Piramanayagam et al., 2023), including certifications and procedural knowledge in sustainability operation. These findings provide a comprehensive framework for developing sustainability curricula in master's-level hospitality programs, ensuring alignment with industry expectations and preparing graduates for leadership roles in sustainable hospitality management.

#### **Recommendation for Future Research**

From the perspective of Thailand's industrial sector, a notable paucity of research exists on the integration of knowledge necessary for curricula development at the intersection of hospitality management and sustainability. The majority of scholarship tends to concentrate on the implementation of sustainability within the industry or on the development of sustainability-related curricula (Pasupa, 2016). Consequently, there is a obvious gap in research that synthesizes these two critical domains. As the hospitality industry constitutes a cornerstone of the national economy, addressing this gap is crucial for driving substantial growth and development across Thailand's industrial landscape.

While this study has identified essential sustainability knowledge requirements for hospitality graduates from practitioners' perspectives, future research and professionals should consider systematically reviewing and applying the Knowledge, Skills, Ethics, and Character (KSEC) framework to curriculum development in sustainability management programs because a curriculum in Thailand is

expected to be designed based on the four domains of learning outcomes regulated by the Ministry of Higher Education, Science, Research, and Innovation (MHESI) (MHESI, 2022). The KSEC framework offers a comprehensive scaffold for designing educational interventions that transcend traditional knowledge-transfer approaches by integrating cognitive competencies with ethical foundations and the character development essential for sustainability leadership. Future studies should empirically examine how the KSEC framework can be operationalized across different cultural and institutional contexts, investigating the optimal pedagogical approaches for developing each dimension simultaneously.

### Contributions, Limitations, and Conclusion

This study contributes to education literature by identifying eleven distinct themes that collectively define the essential sustainability knowledge domains expected of Master's-level hospitality graduates in Thailand. These themes represent an integrated framework of environmental, social, and governance (ESG) knowledge that reflect the industry's expectation for future hospitality leaders. The findings demonstrate that sustainability knowledge for hospitality professionals extends beyond environmental practices to encompass integrated strategic, operational, and systemic domains. The informants emphasized the importance of balancing strategic foresight with practical implementation, underscoring that sustainability should be embedded as a core management competency rather than an auxiliary corporate social responsibility function. Furthermore, the prominence of systems thinking and measurement and accountability skills reflects the growing demand for leaders who can quantify, communicate, and manage sustainability performance through globally recognized frameworks.

Practically, these insights might redefine sustainability education for hospitality management. The study positions sustainability not as a specialized niche but as a unifying lens for organizational innovation, competitiveness, and long-term resilience that create measurable environmental impact, social value, and economic viability in Thailand's evolving hospitality sector.

This study has a limitation about its extensive literature review on sustainability-related contents. Its key sources were solely derived primarily from academic publications. Other sources such as textbooks can provide curricular content and should be considered in future review studies, to increase the coverage of the review on sustainability-related contents.

### Acknowledgments

This study was funded by the International College for Sustainability Studies, Srinakharinwirot University, Bangkok, Thailand (Contract No. 070/2567) and received ethical approval from the Research Ethics Review Committee at Srinakharinwirot University (Certificate of Approval No. SWUEC672019). The authors declare no commercial or financial conflicts of interest. Data supporting the findings of this study are available from the corresponding author upon reasonable request. The authors express their sincere gratitude to the institution for its support and to the anonymous reviewers for their constructive feedback, which substantially improved the quality of this article.

## References

Blanco-Moreno, S., Aydemir-Dev, M., Santos, C. R., & Bayram-Arlı, N. (2025). Emerging sustainability themes in the hospitality sector: A bibliometric analysis. *European Research on Management and Business Economics*, 31(1), Article 100272. <https://doi.org/10.1016/j.iedeen.2025.100272>.

Brugha, R., & Varvasovszky, Z. (2000). Stakeholder analysis: A review. *Health Policy and Planning*, 15(3), 239–246. <https://doi.org/10.1093/heapol/15.3.239>.

Brundiers, K., Barth, M., Cebrián, G., Cohen, M., Diaz, L., Doucette-Remington, S., Dripps, W., Habron, G., Harré, N., Jarchow, M., Losch, K., Michel, J., Mochizuki, Y., Rieckmann, M., Parnell, R., Walker, P., & Zint, M. (2021). Key competencies in sustainability in higher education—Toward an agreed-upon reference framework. *Sustainability Science*, 16(1), 13–29. <https://doi.org/10.1007/s11625-020-00838-2>.

Brundiers, K., Wiek, A., & Redman, C. L. (2010). Real-world learning opportunities in sustainability: From classroom into the real world. *International Journal of Sustainability in Higher Education*, 11(4), 308–324. <https://doi.org/10.1108/14676371011077540>.

Bryman, A. (2016). *Social research methods*. Oxford University Press.

EHL Insights. (2025, July 1). *Sustainability trends in hospitality: Strategies and examples*. <https://doi.org/10.5194/icuc12-116>.

Galleli, B., Hourneaux, F., & Munck, L. (2020). Sustainability and human competences: A systematic literature review. *Benchmarking: An International Journal*, 27(7), 1981–2004. <https://doi.org/10.1108/BIJ-12-2018-0433>.

Munjal, S., & Sharma, S. (2023). Driving the sustainability agenda: A wakeup call for hospitality education. *Worldwide Hospitality and Tourism Themes*, 15(3), 322–327. <https://doi.org/10.1108/WHATT-03-2023-0028>.

Neuendorf, K. A. (2017). *The content analysis guidebook* (2nd ed.). SAGE Publications.

Nguyen, L. T. V., Cleveland, D., Nguyen, C. T. M., & Joyce, C. (2024). Problem-based learning and the integration of sustainable development goals. *Journal of Work-Applied Management*, 16(2), 218–234. <https://doi.org/10.1108/JWAM-06-2023-0059>.

Pasupa, S. (2016). *Sustainable development in Thailand supported by industrial design education*. <https://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.706192>.

Peloza, J., White, K., & Shang, J. (2013). Good and guilt-free: The role of self-accountability in influencing preferences for products with ethical attributes. *Journal of Marketing*, 77(1), 104–119. <https://doi.org/10.1509/jm.11.0454>.

Pimpa, N. (2023). Sustainability training in business education in Thailand. *Cogent Education*, 10(2), Article 2245627. <https://doi.org/10.1080/2331186X.2023.2245627>.

Piramanayagam, S., Mallya, J., & Payini, V. (2023). Sustainability in hospitality education: Research trends and future directions. *Worldwide Hospitality and Tourism Themes*, 15(3), 256–266. <https://doi.org/10.1108/WHATT-03-2023-0030>.

Redman, A., & Wiek, A. (2021). Competencies for advancing transformations towards sustainability. *Frontiers in Education*, 6, Article 785163. <https://doi.org/10.3389/feduc.2021.785163>.

Sahdra, B., & Thagard, P. (2003). Procedural knowledge in molecular biology. *Philosophical Psychology*, 16(4), 477–498. <https://doi.org/10.1080/09515080310001606135>.

Srivastava, S., Dey, S. K., Sharma, S., & Ratilla, M. (2023). Adoption of sustainable practices by Asian hotels: Gaps in academia. *Worldwide Hospitality and Tourism Themes*, 15(3), 220–230.  
<https://doi.org/10.1108/WHATT-01-2023-0009>

Tavanti, M. (2023). Sustainability management across sectors. In *Developing sustainability in organizations* (pp. 217–254). Palgrave Macmillan. [https://doi.org/10.1007/978-3-031-36907-0\\_8](https://doi.org/10.1007/978-3-031-36907-0_8).

World Economic Forum. (2024, January 26). *Why 2024 is the year sustainability develops a creditable business case*. <https://www.weforum.org/stories/2024/01/why-2024-is-the-year-of-the-business-case-for-sustainability-davos/>