Transforming the Future Guest Experience in the Hotel Industry: A Structured Narrative Review of Intelligent Hospitality

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ABSTRACT

Purpose

This study critically synthesises contemporary hospitality research to examine how intelligent technologies, organisational capabilities, sustainability and human-centred service are reshaping the future guest experience. It addresses the fragmentation of these research streams by developing an integrated conceptual perspective on intelligent hospitality.

Design/methodology/approach

A Structured Narrative Literature Review (SNLR), informed by systematic review principles and PRISMA 2020 reporting guidance, was conducted. Thirty peer-reviewed studies published between 2016 and 2026 were synthesised through qualitative appraisal and thematic analysis, integrating perspectives from hospitality, tourism, information systems, strategic management and sustainability.

Findings

The synthesis indicates that intelligent technologies enhance guest experience when supported by organisational capabilities, responsible governance, employee competencies and sustainable value creation. Technology alone does not generate superior experiences; its value depends on effective integration with human-centred hospitality. The study identifies relationships among technological capabilities, guest-experience mechanisms and organisational outcomes.

Originality/value

The study develops the Future Guest Experience Framework (FGEF), integrating intelligent technologies, organisational capabilities, sustainable value creation and human-centred hospitality within a multi-level framework. It connects previously fragmented research streams and provides testable propositions for future empirical research.

Keywords: Guest experience; Intelligent hospitality; Artificial intelligence; Sustainable hospitality; Future Guest Experience Framework

INTRODUCTION

The global hospitality industry is experiencing rapid transformation driven by technological innovation, evolving guest expectations, increasing environmental awareness and intensified market competition. Technologies such as artificial intelligence (AI), the Internet of Things (IoT), big data analytics, cloud computing and immersive digital platforms are reshaping how hospitality organisations design services, manage operations and engage with guests. At the same time, travellers increasingly expect personalised, seamless, sustainable and technology-enabled experiences across the customer journey. These developments are encouraging hospitality organisations to move beyond conventional service delivery towards more connected, adaptive and experience-oriented hospitality systems.

Guest experience has consequently emerged as an important determinant of organisational competitiveness and long-term value creation. Earlier hospitality research primarily emphasised service quality, customer satisfaction and operational efficiency. Contemporary scholarship increasingly recognises guest experience as a multidimensional phenomenon shaped by interactions among technological innovation, organisational capabilities, employee engagement, sustainability and value co-creation. Within this changing environment, digital technologies can support service personalisation and operational responsiveness, but their contribution depends on how effectively they are integrated with organisational processes and human service.

Research on hospitality transformation has expanded considerably across areas such as artificial intelligence, smart hotels, digital transformation, sustainable hospitality and immersive technologies. However, these streams have largely developed in parallel. Technology-adoption studies frequently emphasise guest acceptance and operational efficiency, sustainability research focuses on environmental and social performance, while organisational studies examine capabilities and digital transformation. Consequently, limited attention has been given to how these dimensions interact across guest, organisational and system/value levels to shape future hospitality experiences. This fragmentation constrains cumulative theory development and limits the ability of existing frameworks to explain intelligent hospitality as an integrated phenomenon.

This study addresses this gap through a Structured Narrative Literature Review (SNLR) informed by systematic review principles. Rather than examining individual technologies or management practices in isolation, the review synthesises evidence across intelligent technologies, organisational capabilities, sustainable value creation and human-centred hospitality. Its central purpose is to clarify the relationships among these domains and explain how their interaction may shape the future guest experience.

Accordingly, the study has four objectives. First, it critically reviews contemporary literature on guest experience, intelligent hospitality, artificial intelligence, smart hotels, digital transformation, sustainable hospitality and immersive technologies. Second, it identifies major theoretical, methodological, empirical and contextual gaps within the existing literature. Third, it develops the Future Guest Experience Framework (FGEF) to integrate technological, organisational, sustainability and human-centred perspectives within a coherent conceptual structure. Finally, it develops a future research agenda and derives implications for hospitality managers, policymakers, educators and technology providers.

The study makes three principal contributions. First, it consolidates fragmented research streams by positioning intelligent hospitality as an interconnected system rather than a collection of independent technological applications. Second, it integrates complementary theoretical perspectives across guest, organisational and system/value levels to explain technology acceptance, value co-creation, organisational adaptation and sustainable value creation. Third, the proposed FGEF distinguishes strategic capability domains, guest-experience mechanisms and outcomes while recognising responsible digital governance as an important cross-cutting condition. In doing so, the framework provides theoretically grounded relationships that can be examined through future empirical research.

The remainder of the paper is organised as follows. Section 2 presents the conceptual and theoretical foundations of the review. Section 3 describes the research methodology. Section 4 critically synthesises contemporary hospitality literature and identifies major research gaps. Section 5 discusses the findings and develops the Future Guest Experience Framework (FGEF). Sections 6 and 7 present managerial implications and the future research agenda, respectively, followed by the limitations and conclusion of the study.

Conceptual and Theoretical Foundations

Understanding the future guest experience requires a multidisciplinary theoretical perspective because intelligent hospitality involves interactions among guest behaviour, technological innovation, organisational adaptation and sustainable value creation. No single theory adequately explains these relationships across different analytical levels. Accordingly, this review draws on six complementary perspectives: the Experience Economy, Service-Dominant Logic (SDL), the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), Dynamic Capabilities Theory (DCT) and the Triple Bottom Line (TBL). Rather than

treating these theories as independent explanations, they are organised across guest, organisational and system/value levels to provide the theoretical foundation for the Future Guest Experience Framework (FGEF).

At the guest level, the Experience Economy explains why memorable and emotionally meaningful experiences have become important sources of hospitality value (Pine & Gilmore, 1998, 1999). Hospitality organisations increasingly compete not only through functional service delivery but also through personalised, engaging and memorable experiences. This perspective establishes guest experience as the principal experiential outcome around which intelligent hospitality strategies are organised.

Service-Dominant Logic complements this perspective by explaining how such value is created. Rather than viewing value as something delivered unilaterally by a hotel, SDL conceptualises it as co-created through interactions among guests, employees, organisations and other resources (Vargo & Lusch, 2004). In intelligent hospitality, digital platforms, AI-enabled services and connected technologies can facilitate this process by enabling guests to participate more actively in service configuration and interaction. The Experience Economy therefore explains the experiential value sought by guests, while SDL explains the interactive process through which that value is co-created.

Technology acceptance provides a further guest-level mechanism because intelligent hospitality depends on whether guests and employees are willing and able to engage with technology-enabled services. The Technology Acceptance Model (TAM) explains adoption primarily through perceived usefulness and perceived ease of use (Davis, 1989). UTAUT extends this perspective by incorporating social influence and facilitating conditions alongside performance and effort expectations (Venkatesh et al., 2003). Although the two models overlap, they serve complementary purposes in this review: TAM provides a parsimonious explanation of individual acceptance, whereas UTAUT captures the broader social and organisational conditions influencing technology use. Together, they help explain why technologically advanced hospitality services may generate different responses across users and service contexts.

At the organisational level, Dynamic Capabilities Theory explains how hospitality organisations convert technological opportunities into sustained service and organisational value. Digital technologies alone do not constitute organisational capability; hotels must be able to sense changes in guest expectations and technological environments, seize emerging opportunities and reconfigure resources, processes and workforce capabilities accordingly (Teece, 2007). Adaptive leadership, organisational learning, employee development and innovation capability therefore function as mechanisms through which technological investments can contribute to guest experience and organisational resilience.

At the system/value level, the Triple Bottom Line broadens the evaluation of hospitality transformation beyond financial and technological outcomes by incorporating economic, environmental and social value (Elkington, 1997). Intelligent hospitality can support resource efficiency, environmental management and operational performance, but sustainable value creation also requires attention to employee well-being, community interests, responsible governance and long-term organisational resilience. TBL therefore positions sustainability as an integral dimension of hospitality transformation rather than as a separate operational initiative.

Taken together, these theoretical perspectives form a multi-level explanatory structure. At the guest level, the Experience Economy and SDL explain experiential value and co-creation, while TAM and UTAUT explain acceptance of technology-mediated services. At the organisational level, Dynamic Capabilities Theory explains how technological opportunities are translated into service innovation through organisational adaptation and resource reconfiguration. At the system/value level, the Triple Bottom Line situates these transformations within broader economic, environmental and social value creation. The relationships across these levels are interconnected: technology acceptance influences participation in technology-enabled experiences; organisational capabilities determine how effectively technologies support those experiences; and sustainability and responsible governance shape the long-term legitimacy and value of intelligent hospitality. This integrated theoretical structure provides the basis for the FGEF developed later in the paper.

Table 1. Theoretical Foundations Underpinning Intelligent Hospitality

Analytical Level	Theory	Explanatory role	Contribution to FGEF
Guest	Experience Economy	Explains memorable experiential value	Guest-experience outcomes
Guest	Service-Dominant Logic	Explains value co-creation	Guest-experience mechanisms
Guest/ Technology	TAM	Explains usefulness and ease-of-use perceptions	Individual technology acceptance
Guest/ Organisational	UTAUT	Explains social and facilitating conditions of use	Contextual technology acceptance
Organisational	Dynamic Capabilities Theory	Explains sensing, seizing and resource reconfiguration	Organisational capabilities
System/Value	Triple Bottom Line	Explains economic, environmental and social value	Sustainable value creation

RESEARCH METHODOLOGY

This study adopts a Structured Narrative Literature Review (SNLR) informed by systematic review principles to critically synthesise contemporary research on intelligent hospitality and the future guest experience. The SNLR approach combines a structured literature search, predefined eligibility criteria, transparent study selection and thematic synthesis while allowing the conceptual integration of heterogeneous research across hospitality, tourism, information systems, strategic management and sustainability. This approach is appropriate for multidisciplinary research domains where the objective is theoretical and conceptual synthesis rather than statistical meta-analysis (Torraco, 2005; Grant & Booth, 2009; Snyder, 2019).

PRISMA 2020 reporting principles were used to improve transparency in the identification, screening, eligibility assessment and inclusion of studies (Page et al., 2021). PRISMA was used as a reporting guide rather than to classify the present study as a conventional systematic review. The final review corpus comprised 30 peer-reviewed studies, while foundational theoretical publications were used separately to establish the conceptual framework and were not counted as part of the contemporary review corpus.

Literature Search Strategy

A structured literature search was conducted using Scopus and Web of Science as the principal bibliographic databases because of their multidisciplinary coverage and extensive indexing of peer-reviewed hospitality, tourism, management and technology research. ScienceDirect, SpringerLink, Emerald Insight, Taylor & Francis Online, SAGE Journals and Google Scholar were used as supplementary discovery sources to identify relevant publications and support backward citation searching.

The search focused on contemporary research relating to intelligent hospitality and future guest experience. Search concepts combined hospitality-related terms with technological, organisational, sustainability and guest-experience terms. Representative combinations included:

- “Guest Experience” AND Hospitality
- “Artificial Intelligence” AND Hospitality
- “Smart Hotels” OR “Intelligent Hospitality”
- “Digital Transformation” AND Hospitality OR Tourism
- Hospitality AND Sustainability

- "Immersive Technologies" OR "Virtual Reality" OR "Augmented Reality" OR Metaverse AND Hospitality

Search syntax was adapted to the functionality of individual databases while maintaining consistent conceptual domains. Reference lists of relevant publications were also examined to identify additional eligible studies. The searches covered peer-reviewed publications from 2016 to 2026. The literature search and screening process was conducted over a three-month period from June to August 2026, with the final database search completed in August 2026.

Eligibility Criteria

Predefined inclusion and exclusion criteria were applied to maintain consistency and relevance.

Inclusion criteria

- Peer-reviewed journal articles.
- English-language publications.
- Studies published within the defined contemporary review period.
- Studies directly related to hospitality, tourism, hotel management or guest experience.
- Research examining intelligent hospitality, AI, smart hotels, IoT, digital transformation, sustainability, immersive technologies or related organisational and guest-experience dimensions.

Exclusion criteria

- Non-peer-reviewed publications.
- Conference abstracts without full papers.
- Editorials, news articles, dissertations and opinion pieces.
- Studies without a substantive hospitality or tourism context.
- Duplicate records.
- Publications outside the defined contemporary review period, except foundational theoretical works used separately for conceptual framing.

Foundational works underpinning the Experience Economy, Service-Dominant Logic, TAM, UTAUT, Dynamic Capabilities Theory and the Triple Bottom Line were therefore retained for theoretical development but were not included in the 30-study review corpus.

Study Selection, Quality Appraisal and Data Analysis

Study selection followed four stages: identification, screening, eligibility assessment and final inclusion. Records identified through database searches and supplementary discovery were consolidated and duplicates removed. Titles and abstracts were screened against the eligibility criteria, followed by full-text assessment of potentially relevant publications. Following this process, 30 peer-reviewed studies were retained for the final thematic synthesis.

To strengthen the credibility of the synthesis, eligible studies were assessed for methodological relevance and evidentiary contribution. The appraisal considered clarity of research objectives, appropriateness of research design, transparency of data collection and analysis, relevance to the review questions and the extent to which conclusions were supported by the reported evidence. The appraisal was used to inform interpretation rather than to generate a numerical quality score, recognising the methodological diversity of the literature.

Data extraction captured publication characteristics, study context, research objectives, theoretical perspective, methodological design, technology or sustainability focus, principal findings, limitations and relevance to intelligent hospitality and guest experience. The extracted evidence was organised across the principal thematic domains of guest experience, intelligent hospitality, artificial intelligence, smart hotels and IoT, digital transformation, sustainable hospitality, immersive technologies and responsible governance.

Thematic synthesis involved iterative comparison of findings across the selected studies to identify convergent findings, contrasting perspectives, conceptual relationships and research gaps. Initial coding was guided by the review objectives and theoretical foundations while allowing additional themes to emerge from the literature. The synthesis distinguished relatively established evidence from emerging and prospective technological applications to avoid assigning equivalent evidentiary weight to conceptually and methodologically different studies.

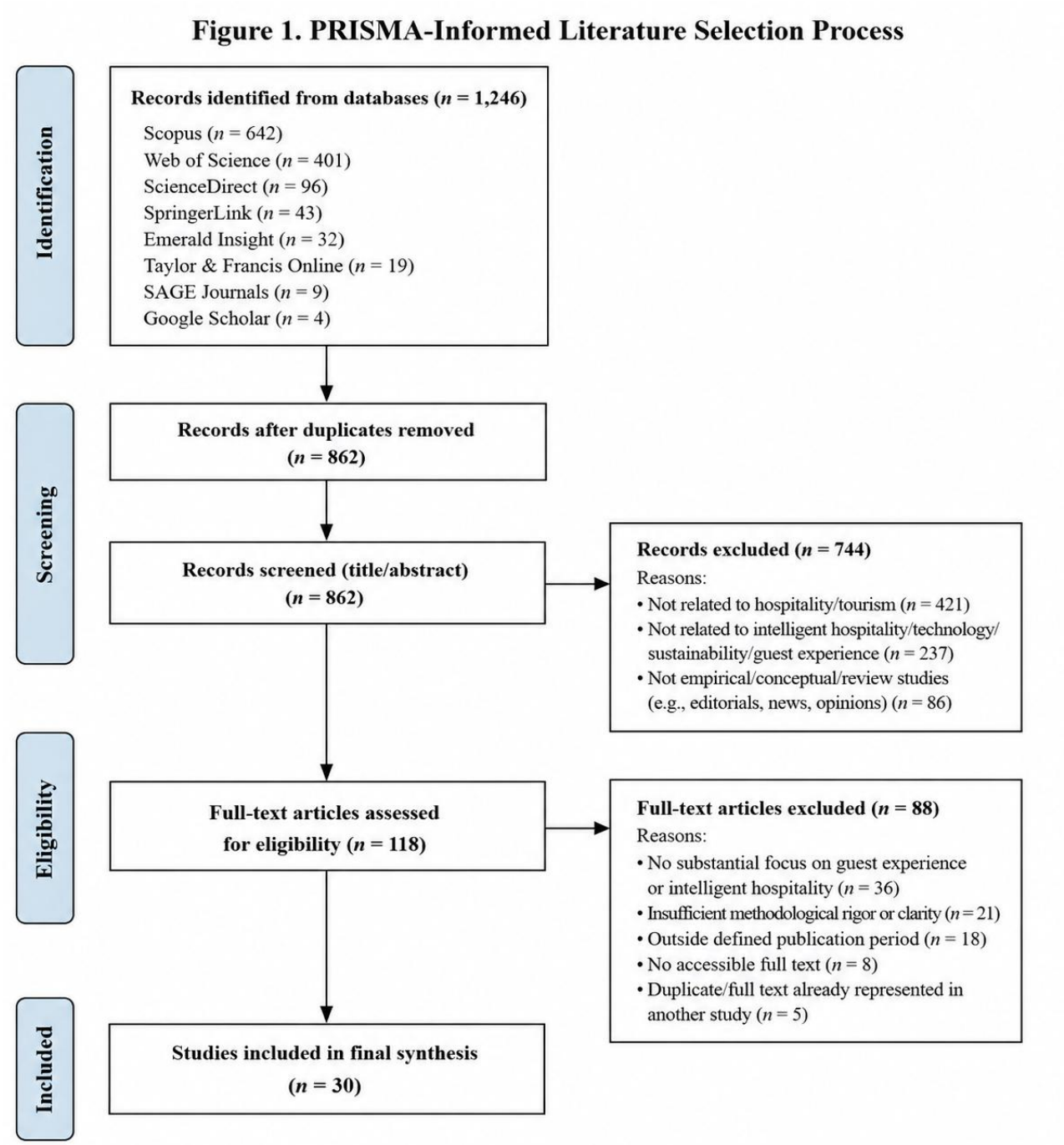
As this was a single-author review, the identification, title and abstract screening, full-text eligibility assessment, data extraction, quality appraisal and thematic coding were conducted by the author. To improve consistency, predefined eligibility and appraisal criteria were applied throughout the review process and potentially ambiguous studies were reassessed against the review objectives before final inclusion. Thematic coding combined a framework-guided approach based on the review objectives and theoretical foundations with an inductive process that allowed additional themes and relationships to emerge from the selected literature. As no second reviewer was involved, inter-reviewer agreement statistics were not applicable; this single-reviewer design is acknowledged as a limitation of the study.

Rather than summarising individual publications sequentially, the analysis integrated findings across themes and analytical levels. This approach enabled the review to examine relationships among technological innovation, organisational capabilities, sustainable value creation and human-centred hospitality and subsequently informed the development of the Future Guest Experience Framework (FGEF).

Table 2. Review Profile

Review Characteristic	**Description**
Review Type	Structured Narrative Literature Review (SNLR) informed by systematic review principles
Reporting Framework	PRISMA 2020-informed reporting
Publication Period	2016–2026
Search and Screening Period	June–August 2026
Principal Databases	Scopus and Web of Science
Supplementary Discovery Sources	ScienceDirect, SpringerLink, Emerald Insight, Taylor & Francis Online, SAGE Journals and Google Scholar
Literature Type	Peer-reviewed journal articles
Language	English
Final Review Corpus	30 peer-reviewed studies
Foundational Literature	Seminal theoretical works retained separately and excluded from the 30-study review corpus
Study Selection	Identification, duplicate removal, title/abstract screening, full-text eligibility assessment and final inclusion
Quality Appraisal	Methodological relevance and evidentiary contribution assessed using predefined qualitative criteria
Analysis Technique	Thematic synthesis and critical conceptual integration
Major Analytical Domains	Guest experience, intelligent hospitality, AI, smart hotels/IoT, digital transformation, sustainable hospitality, immersive technologies and responsible governance

Figure 1. PRISMA-Informed Literature Selection Process



The structured review methodology ensures transparency, consistency and analytical rigour while providing a reliable foundation for the critical synthesis presented in the following section.

Table 3. Characteristics of Studies Included in the Review

S. N.	Author(s) & Year	Context	Study Design / Data Source	Technology / Theme	Principal Contribution to the Review / FGEF
1	Jones et al. (2016)	Hospitality industry	Conceptual/review study	Sustainable hospitality	Positions sustainability as an important strategic hospitality issue involving environmental, organisational and stakeholder responsibilities.
2	Lemon & Verhoef (2016)	Customer/service context	Conceptual review	Customer journey and experience	Conceptualises customer experience across multiple interconnected touchpoints and supports the guest-journey perspective.

3	Chang (2018)	Hospitality and tourism	Quantitative empirical study	Experience Economy	Examines experiential value in hospitality and tourism and supports the positioning of guest experience as a strategic outcome.
4	Buhalis & Leung (2018)	Hospitality	Conceptual study	Smart hospitality	Conceptualises smart hospitality through interconnectivity and interoperability, supporting an ecosystem interpretation of intelligent hospitality.
5	Yang et al. (2021)	Smart hotels / hotel guests	Quantitative empirical study	Smart-hotel technology acceptance	Demonstrates how perceived usefulness, ease of use and technology readiness influence guest acceptance and experience of smart-hotel technologies, strengthening the technology-acceptance dimension of the FGEF.
6	Tussyadiah et al. (2018)	Tourism	Empirical study	Virtual Reality	Demonstrates that virtual presence can influence attitudes and tourism experiences.
7	Flavián et al. (2019)	Customer/service context	Conceptual review	VR, AR and MR	Explains how immersive technologies can alter customer experience and connect physical and digital interactions.
8	Gursoy et al. (2019)	Service/hospitality context	Quantitative empirical study	AI acceptance	Examines consumer acceptance of AI-enabled service devices and supports the technology-acceptance component of intelligent hospitality.
9	Vial (2019)	Cross-industry	Literature review	Digital transformation	Defines digital transformation as organisational change involving technology, structures, processes and value creation.
10	Warner & Wäger (2019)	Organisational context	Longitudinal qualitative research	Dynamic capabilities / digital transformation	Demonstrates how organisations develop sensing, seizing and transforming capabilities during digital transformation.
11	Wei (2019)	Tourism and hospitality	Critical literature review	VR and AR	Reviews developments in VR/AR research and identifies hospitality and tourism applications and gaps.
12	Merli et al. (2019)	Eco-labelled hotel / guest context	Quantitative empirical study	Sustainable hospitality	Links guests' perceptions of green practices with satisfaction and loyalty, supporting the guest-facing value of sustainability.
13	Yadav et al. (2019)	India / travellers	Quantitative empirical study	Green-hotel choice	Examines psychological and contextual factors influencing travellers' propensity to select green hotels.
14	Loureiro et al. (2020)	Tourism	Bibliometric/text-mining review	VR and AR	Maps the evolution and major themes of immersive-technology research in tourism.
15	Tussyadiah (2020)	Tourism	Critical review	AI, automation and robotics	Highlights opportunities and implications of automation for tourists, employees and tourism service systems.
16	Li et al. (2021)	Hospitality and tourism	Systematic review	AI-enabled service encounters	Synthesises research on AI technology-based service encounters and their implications for hospitality operations and guest experience.
17	Verhoef et al. (2021)	Multidisciplinary/business	Conceptual review	Digital transformation	Identifies strategy, organisational capabilities, structure and performance as interconnected dimensions of digital transformation.
18	Lin & Mattila (2021)	Full-service hotels	Mixed-method study	Service robots	Shows that functional benefits, novelty, privacy and robot appearance influence guests' attitudes and experiences with service robots.
19	Luo et al. (2021)	Robot hotels	Online-review sentiment analysis	Service robots	Finds that customer sentiment toward robotic-service attributes is associated with hotel-

					service satisfaction and identifies weaker areas of robot interaction.
20	Papagiannidis et al. (2022)	Peer-to-peer accommodation	Quantitative empirical study	Smart accommodation	Examines drivers of consumers' intentions to stay in technology-enabled smart accommodation.
21	Kim & So (2022)	Hospitality and tourism	Bibliometric and thematic review	Customer/guest experience	Maps two decades of hospitality and tourism customer-experience research and identifies major thematic directions.
22	Dwivedi et al. (2022)	Multidisciplinary	Conceptual review	Metaverse	Identifies opportunities, risks, policy issues and future research needs associated with emerging virtual environments.
23	Chi et al. (2023)	United States and China	Cross-cultural quantitative study; 491 US and 495 Chinese respondents	AI service robots, trust and culture	Demonstrates that trust and cultural context influence consumer acceptance of AI-enabled service robots.
24	Khan et al. (2024)	Hospitality and tourism marketing	Empirical/conceptual study	Generative AI	Identifies benefits, risks and policy implications associated with Generative AI in hospitality and tourism marketing.
25	Peng et al. (2024)	Hospitality industry	Bibliometric review	Digital transformation	Maps hospitality digital-transformation research and identifies its intellectual development and future research directions.
26	Liu et al. (2024)	Smart-hotel scholarship	Bibliometric review	Smart hotels, AI and IoT	Maps the development of smart-hotel research and the growing role of AI, IoT and related digital technologies.
27	Song et al. (2024)	Smart hotels / online reviews	AI-enabled aspect-level sentiment analysis	Smart-hotel competitiveness	Uses online-review evidence to identify competitive strengths and weaknesses of smart hotels rather than relying only on managerial perceptions.
28	Marghany et al. (2025)	UK hotel guests	Quantitative empirical study; 358 hotel guests	Service robots / technology acceptance	Shows that trust, facilitating conditions, social influence and robot-related attributes help explain intention to use hotel service robots.
29	Zhang et al. (2026)	Hospitality and tourism	Systematic review	Generative AI	Synthesises emerging evidence on Generative AI and hospitality/tourism consumers and identifies priorities for future empirical research.
30	Wang et al. (2023)	Hotel front-desk services	Mixed-method study: interviews and quantitative surveys	Consumer resistance to service robots	Shows that service-robot adoption also faces consumer resistance and barriers, adding a critical counterpoint to predominantly positive technology-adoption research.

Critical Synthesis of Contemporary Hospitality Literature

Evolution of Guest Experience

Guest experience has evolved from a predominantly service-evaluation concept towards a multidimensional process encompassing cognitive, emotional, sensory, behavioural and relational responses across the customer journey. Lemon and Verhoef (2016) conceptualise customer experience across interconnected touchpoints, while Chang (2018), drawing on the Experience Economy perspective, demonstrates the strategic importance of experiential value in hospitality and tourism. These perspectives suggest that guest experience extends beyond

satisfaction with individual service encounters to include the cumulative value created throughout interactions with hospitality organisations.

Digitalisation has expanded this experiential environment by introducing technology-mediated touchpoints before, during and after the stay. Intelligent technologies can support personalised recommendations, responsive service and more seamless interactions; however, their contribution depends on guest acceptance and the quality of human–technology interaction (Gursoy et al., 2019). Guest experience should therefore not be interpreted as an automatic consequence of technological sophistication.

The literature nevertheless remains dispersed across customer experience, technology adoption, service innovation and sustainability research. Kim and So (2022) demonstrate the thematic diversity of hospitality and tourism customer-experience research, while smart-hospitality and digital-transformation studies indicate that experience is increasingly shaped by the technological and organisational systems supporting service delivery (Buhalis & Leung, 2018; Verhoef et al., 2021). This fragmentation supports the need for an integrated perspective connecting technological innovation, organisational capabilities, sustainable value creation and human-centred hospitality.

Overall, guest experience emerges as a continuous and multidimensional outcome shaped by experiential, technological and relational factors. This provides the foundation for examining intelligent hospitality as a system in which technologies and organisational capabilities interact to support personalised, adaptive and human-centred experiences.

Intelligent Hospitality: From Digital Services to Intelligent Ecosystems

Digital hospitality is increasingly shifting from stand-alone technologies towards interconnected, data-enabled service ecosystems integrating artificial intelligence (AI), the Internet of Things (IoT), mobile technologies, cloud-based systems and data analytics. Buhalis and Leung (2018) conceptualise smart hospitality through interoperability and connectivity among technological systems and stakeholders, enabling more coordinated service delivery and value creation. Recent smart-hotel research similarly reflects the convergence of connected technologies and digitally enabled services (Liu et al., 2024). Intelligent hospitality is therefore better understood as the capacity to integrate technological resources within coherent service and organisational systems rather than simply the adoption of advanced technologies.

Guest responses demonstrate, however, that technological sophistication does not automatically produce positive experiences. Perceived usefulness, ease of use and technology readiness influence acceptance of smart-hotel technologies (Yang et al., 2021), while research on service robots identifies both functional benefits and concerns involving privacy, communication quality and interaction design (Lin & Mattila, 2021; Luo et al., 2021). Cross-cultural evidence further indicates that trust and cultural context influence acceptance of AI-enabled service robots (Chi et al., 2023). These findings reinforce the importance of human–technology complementarity and suggest that intelligent hospitality should accommodate human, automated and hybrid service preferences.

Organisational capability is equally important. Digital-transformation research shows that leadership, learning, employee skills and resource reconfiguration are necessary for technological investments to generate sustained value (Vial, 2019; Warner & Wäger, 2019; Verhoef et al., 2021). This requirement may be particularly significant for smaller hospitality organisations facing constraints in finance, expertise and systems integration.

Despite growing research, evidence remains fragmented across individual applications such as service robots, smart accommodation and connected-hotel technologies. Questions concerning interoperability, privacy, accessibility, employee adaptation, investment returns and applicability across organisational and geographical contexts remain insufficiently resolved. Intelligent hospitality should therefore be examined as a socio-technical system involving technologies, organisations, employees and guests rather than as a collection of independent digital applications.

Overall, the literature indicates a progression from isolated digital services towards interconnected hospitality ecosystems whose value depends on technological integration, organisational readiness, user acceptance and

appropriate human interaction. Within these systems, AI has become particularly significant because of its potential to support prediction, automation, personalisation and decision-making.

Artificial Intelligence and Hyper-Personalisation in Hospitality

Artificial intelligence (AI) has become an important component of hospitality innovation, supporting service automation, customer interaction, forecasting, recommendation and decision-making. Research on AI-enabled service encounters indicates that its effects depend on the technology, service context and user response rather than technological capability alone (Huang & Rust, 2018; Gursoy et al., 2019; Li et al., 2021). AI is therefore better understood as a set of capabilities supporting different stages of hospitality service and organisational decision-making.

Personalisation represents one of its most significant applications. Data generated through reservations, loyalty programmes, digital platforms and connected systems can enable more tailored recommendations, communications and services. AI-supported analytics can strengthen this process by identifying behavioural patterns and supporting responsive decisions. However, movement towards hyper-personalisation requires extensive customer data, making data quality, consent, privacy and organisational capability central implementation conditions.

AI also supports operational functions such as demand forecasting, revenue management, workforce planning, recommendation systems and predictive maintenance. Yet digital-transformation research demonstrates that technological capability does not independently generate organisational value; implementation also requires appropriate skills, organisational learning and integration with managerial processes (Vial, 2019; Verhoef et al., 2021).

Conversational AI and service robots make AI particularly visible within guest interactions. Such applications can improve speed, availability and consistency, but guest acceptance remains conditional on usefulness, trust, privacy and the quality of interaction (Gursoy et al., 2019; Lin & Mattila, 2021; Chi et al., 2023). Consequently, AI is more appropriately viewed as complementing human service in contexts where empathy, judgement, creativity and service recovery remain important rather than as a universal substitute for employees.

More recent Generative AI applications extend these possibilities to conversational assistance, content generation and personalised communication, but hospitality-specific empirical evidence remains comparatively limited. Emerging applications should therefore be distinguished from more established forms of AI-enabled service rather than treated as equally mature (Khan et al., 2024).

Overall, AI can strengthen personalisation, operational responsiveness and decision support, but its contribution to guest experience depends on organisational capability, responsible data practices, user acceptance and appropriate human–technology integration. These conditions position responsible governance and human-centred service as essential components of intelligent hospitality rather than secondary considerations.

Smart Hotels and the Internet of Things: Enabling Connected Hospitality

Smart hotels represent a key manifestation of intelligent hospitality in which connected technologies, digital platforms and physical infrastructure interact to support guest services and hotel operations. The Internet of Things (IoT) enables devices, sensors and management systems to exchange data, creating interconnected service ecosystems in which interoperability and information exchange can generate operational and experiential value (Buhalis & Leung, 2018).

Guest-facing applications include automated room controls, digital access, mobile service requests and personalised environmental settings. However, technological availability does not ensure acceptance. Perceived usefulness, ease of use and technology readiness influence responses to smart-hotel technologies (Yang et al., 2021), indicating that functionality must be accompanied by usability, accessibility and appropriate guest control.

At the operational level, IoT-enabled systems can integrate information on occupancy, equipment performance, energy consumption and service requirements, supporting monitoring, resource efficiency and more responsive operations. The evolution of smart-hotel research reflects increasing convergence among IoT, AI, analytics and connected digital services (Liu et al., 2024). Yet the value of these technologies depends on interoperability and organisational capacity to translate data into service and operational decisions.

Smart accommodation research further indicates that consumer intentions depend on perceived benefits and acceptance conditions rather than technological novelty alone (Papagiannidis et al., 2022). This reinforces a broader limitation in smart-hotel research: connected technologies are frequently examined as individual applications, while their combined effects on guest experience, operational performance and sustainability remain less established.

Overall, smart hotels demonstrate how IoT and connected technologies can link physical environments, digital services and organisational processes. Their contribution to future guest experience, however, depends on system integration, usability, organisational capability and responsible data management rather than connectivity alone.

This keeps the evidence from Buhalis & Leung, Yang, Papagiannidis and Liu.

Digital Transformation: Redefining Hospitality Organisations

Digital transformation in hospitality extends beyond technology adoption to encompass changes in organisational processes, structures, capabilities and value creation. Vial (2019) conceptualises digital transformation as organisational change triggered by digital technologies, while Verhoef et al. (2021) emphasise the interconnected roles of strategy, organisational capabilities, structure and performance. Hospitality-specific research similarly indicates that digital transformation is developing as a broader organisational phenomenon rather than a series of isolated technology investments (Peng et al., 2024).

From a dynamic-capabilities perspective, organisations must be able to identify technological opportunities, mobilise resources and reconfigure existing capabilities as market and technological conditions evolve. Warner and Wäger (2019) demonstrate the importance of sensing, seizing and transforming capabilities in digital transformation. In hospitality, this implies that investment in AI, IoT or smart-hotel systems is unlikely to generate sustained value without complementary leadership, employee competencies, organisational learning and process adaptation.

Human capabilities are particularly important because digital transformation alters rather than eliminates the role of employees. Technology can automate routine activities and support decision-making, while employees continue to contribute empathy, judgement, creativity and service recovery. Effective transformation therefore requires workforce development alongside technological investment and an organisational culture capable of supporting human–technology collaboration.

The literature also reveals contextual limitations. Much digital-transformation research operates at broad organisational or cross-industry levels, while hospitality-specific evidence remains comparatively fragmented across technologies and applications. Smaller and resource-constrained hospitality firms may face additional barriers involving finance, technological expertise, employee skills and systems integration.

Overall, digital transformation should be understood as an organisational capability-building process rather than a technology-acquisition exercise. Its contribution to intelligent hospitality depends on the ability to align technological resources with leadership, learning, employee capabilities and organisational adaptation.

Sustainable Hospitality: Balancing Innovation, Responsibility and Resilience

Sustainability has become increasingly integrated into hospitality strategy as environmental pressures, stakeholder expectations and resource constraints encourage organisations to reconsider how value is created. From the Triple Bottom Line perspective, sustainable hospitality involves balancing economic performance with

environmental and social responsibilities rather than treating environmental practices as isolated operational initiatives (Elkington, 1997).

Guest-oriented research demonstrates that sustainability can also contribute to experiential and behavioural outcomes. Merli et al. (2019) associate guests' perceptions of green-hotel practices with satisfaction and loyalty, while Yadav et al. (2019) show that psychological and contextual factors influence travellers' intentions to choose green hotels. These findings suggest that sustainability can form part of the guest value proposition when environmental practices are credible, visible and aligned with customer expectations.

Digitalisation creates further opportunities to connect sustainability with intelligent hospitality. IoT-enabled monitoring, analytics and automated systems can support energy management, resource optimisation and operational efficiency. However, technological efficiency should not be equated automatically with sustainability, as digital infrastructures also involve financial, environmental and governance implications. Sustainable value therefore depends on how technological capabilities are integrated with broader organisational priorities and responsible management practices.

The literature nevertheless remains divided between studies examining sustainability primarily through environmental practices and research focused on technological transformation. Less attention has been given to how sustainability, intelligent technologies, organisational capabilities and guest experience interact within a unified hospitality system. This separation limits understanding of whether sustainability functions merely as an operational practice or as a strategic capability contributing simultaneously to guest value, organisational resilience and long-term competitiveness.

Overall, the evidence supports positioning sustainable value creation as a strategic capability within intelligent hospitality. Its contribution extends beyond resource efficiency to include guest perceptions, organisational resilience and long-term value creation, while requiring credible implementation rather than symbolic environmental positioning.

Immersive Hospitality: Extending Guest Experience Beyond Physical Boundaries

Immersive technologies, including virtual reality (VR), augmented reality (AR) and mixed reality (MR), are extending hospitality experiences beyond conventional physical service environments. These technologies can support virtual destination and hotel previews, interactive information, immersive marketing and digitally enhanced experiences, thereby influencing guest engagement across pre-visit, on-site and post-visit stages.

Research indicates that virtual presence can influence attitudes and tourism experiences (Tussyadiah et al., 2018), while Flavián et al. (2019) demonstrate how VR, AR and MR can reshape customer experiences by connecting physical and digital interactions. Reviews of immersive-technology research similarly identify growing tourism and hospitality applications while highlighting the continuing need for stronger empirical evidence regarding behavioural and organisational outcomes (Wei, 2019; Loureiro et al., 2020).

More recent developments associated with virtual environments and the Metaverse extend these possibilities towards persistent and interactive digital spaces. Such environments may support virtual exploration, marketing, social interaction and new forms of service engagement, but the literature remains comparatively emergent. Dwivedi et al. (2022) identify substantial opportunities alongside technological, ethical, governance and policy challenges, indicating that claims concerning their long-term hospitality impact should remain cautious.

Immersive technologies therefore appear most valuable when they complement rather than substitute physical hospitality experiences. Their effectiveness depends on usability, perceived value, accessibility and their integration with the broader guest journey. Questions concerning adoption costs, technological readiness, privacy and the extent to which virtual engagement translates into actual guest behaviour also require further investigation.

Overall, immersive technologies expand the spatial and temporal boundaries of hospitality experience by connecting digital and physical touchpoints. However, compared with established digital platforms and

increasingly mature AI applications, evidence concerning their sustained effects on guest behaviour, organisational performance and long-term value creation remains less developed.

Research Gaps in Contemporary Hospitality Literature

The increasing use of AI, connected systems and guest data has made responsible digital governance central to intelligent hospitality. Personalisation and automated decision-making depend on extensive data collection and processing, creating concerns regarding privacy, informed consent, cybersecurity, transparency, algorithmic bias and accountability. Emerging Generative AI applications add further issues involving reliability, intellectual property and explainability (Khan et al., 2024; Zhang et al., 2026). The literature therefore indicates that technological capability must be accompanied by governance mechanisms capable of protecting guest interests and organisational legitimacy.

Human-centred hospitality is equally important because guest responses to automation are heterogeneous. Research on AI-enabled devices and service robots demonstrates that usefulness, trust, cultural context, privacy and interaction quality influence acceptance (Gursoy et al., 2019; Lin & Mattila, 2021; Chi et al., 2023; Wang et al., 2023). These findings challenge assumptions that technological advancement should necessarily lead to fully automated service environments. The reviewed evidence similarly supports human–technology complementarity rather than straightforward substitution.

Responsible implementation therefore requires hospitality organisations to balance automation with guest choice and meaningful human support. Routine and information-intensive functions may be suitable for automation, whereas interactions involving empathy, judgement, complex problem-solving and service recovery may continue to benefit from employee involvement. Accessibility is also important because guests differ in technological familiarity, ability and willingness to engage with digitally mediated services.

Governance and human-centred service are consequently interconnected. Transparent data practices, accountability, accessible service alternatives and opportunities for human intervention can support trust, while employee capabilities remain important for managing situations in which automated systems are inappropriate or fail. Responsible digital governance should therefore be treated as a cross-cutting condition of intelligent hospitality rather than a separate technological concern.

Overall, the literature suggests that the future guest experience will depend not on maximising automation but on balancing technological capability with trust, responsibility and meaningful human interaction. This provides the basis for positioning responsible digital governance across the relationships proposed in the Future Guest Experience Framework (FGEF).

Discussion and Development of the Future Guest Experience Framework (FGEF)

The literature synthesis indicates that the future guest experience cannot be adequately explained through technological adoption alone. Across the reviewed studies, guest outcomes emerge from interactions among technological capabilities, organisational readiness, sustainability considerations and the quality of human service. Research on AI and smart hospitality demonstrates the potential of intelligent technologies to support personalisation, automation and responsive service, while digital-transformation research emphasises the organisational capabilities required to translate technological investments into value. Sustainability research further broadens this perspective by incorporating environmental, social and long-term organisational considerations, while studies of technology acceptance and service robots demonstrate that guest responses remain conditional on trust, usefulness, accessibility and the nature of human–technology interaction.

These findings suggest that intelligent hospitality is best understood as a socio-technical and organisational system rather than as a collection of independent technologies. The Future Guest Experience Framework (FGEF) is therefore proposed to integrate four strategic capability domains identified through the synthesis: Intelligent Technologies, Organisational Capabilities, Sustainable Value Creation and Human-Centred Hospitality. Their interaction shapes a set of guest-experience mechanisms—personalisation, convenience, trust, engagement, co-creation and perceived value—which subsequently influence guest and organisational outcomes.

The theoretical contribution of the FGEF does not rest on claiming that its individual components are entirely new. Intelligent technologies, organisational capabilities, sustainability and human-centred service have each been examined within existing hospitality and management research. The contribution lies instead in their integration within a multi-level explanatory structure and in specifying how these domains interact to shape future guest experience. The framework connects guest-level perspectives on experience, value co-creation and technology acceptance with organisational-level capabilities and system/value-level sustainability considerations. In doing so, it addresses the fragmentation identified across the reviewed literature.

Strategic Capability Domains of the FGEF

Intelligent Technologies represent the technological capability domain of the framework and include AI, IoT, data analytics, smart-hotel systems, service automation and immersive technologies. Their principal role is to provide information, connectivity, prediction and service-support capabilities that can enable more responsive and personalised hospitality. However, the synthesis demonstrates that technological capability should be treated as an enabling condition rather than a direct guarantee of improved guest experience.

Organisational Capabilities represent the organisation's capacity to identify technological and market developments, mobilise appropriate resources and adapt processes accordingly. Digital leadership, organisational learning, employee development, innovation capability and change management are central to this domain. Consistent with Dynamic Capabilities Theory, these capabilities influence whether technological opportunities are successfully translated into operational and experiential value.

Sustainable Value Creation incorporates environmental, social and economic considerations into hospitality transformation. This domain includes resource efficiency, responsible consumption, employee and community considerations, organisational resilience and long-term value creation. Sustainability is therefore positioned not as a separate operational initiative but as a strategic consideration influencing how hospitality organisations design and evaluate technological and organisational change.

Human-Centred Hospitality recognises that hospitality remains fundamentally relational despite increasing automation. Empathy, interpersonal interaction, service recovery, accessibility, employee expertise and meaningful guest engagement remain important where automated technologies cannot adequately address emotional, complex or context-sensitive needs. Human-centred hospitality also recognises differences in guests' technological preferences and supports appropriate combinations of human, automated and hybrid service.

Guest-Experience Mechanisms

The four strategic capability domains do not necessarily influence guest outcomes directly. Their effects are proposed to operate through several guest-experience mechanisms identified across the literature.

Personalisation reflects the ability to adapt services, recommendations and interactions to guest preferences. Convenience captures reductions in effort, waiting time and service friction enabled through appropriately designed technologies and processes. Trust reflects confidence in the organisation, its employees and its technological systems, particularly in relation to reliability, privacy and responsible data use. Engagement refers to cognitive, emotional and behavioural involvement across physical and digital touchpoints. Co-creation captures active guest participation in configuring and shaping service experiences, while perceived value reflects guests' overall assessment of the benefits received relative to the financial, cognitive, emotional and other costs associated with the experience.

These mechanisms clarify why identical technologies may produce different outcomes across hospitality contexts. A technologically advanced service may offer operational efficiency but fail to improve guest experience if it is difficult to use, perceived as intrusive or removes valued human interaction. Conversely, relatively simple technologies may create substantial guest value when they reduce friction, strengthen personalisation or complement employee service effectively.

Outcomes of the FGEF

At the guest level, the framework proposes outcomes including guest satisfaction, memorable experience, loyalty, trust and behavioural intention. At the organisational level, potential outcomes include service innovation, operational adaptability, organisational resilience and long-term value creation. These outcomes should be interpreted as theoretically proposed consequences rather than automatic results of technology adoption.

The framework also recognises feedback relationships. Guest responses, behavioural data and service evaluations can generate information that informs organisational learning and subsequent service redesign. Hospitality organisations may consequently refine technological applications, employee capabilities and sustainability practices in response to changing guest expectations and operational evidence. The FGEF is therefore conceived as a dynamic rather than strictly linear framework.

Responsible Digital Governance as a Cross-Cutting Condition

Responsible digital governance operates across the FGEF rather than as an isolated capability domain. As intelligent hospitality increasingly relies on guest data and automated decision-making, privacy, cybersecurity, transparency, informed consent, algorithmic fairness and accessibility can influence trust and technology acceptance. Governance therefore conditions the relationships between technological capabilities and guest-experience mechanisms.

This cross-cutting role is particularly important because the same technological capability may create value or generate resistance depending on how it is implemented. Personalisation based on transparent and consensual data practices may enhance perceived relevance, whereas intrusive data collection can undermine trust. Similarly, automated services may improve convenience for some guests while creating accessibility barriers for others. Responsible governance consequently provides an important boundary condition for intelligent and human-centred hospitality.

Integrated Logic of the FGEF

The FGEF can be summarised through the following conceptual sequence:

Strategic Capability Domains → Guest-Experience Mechanisms → Guest and Organisational Outcomes

The four capability domains intelligent technologies, organisational capabilities, sustainable value creation and human-centred hospitality provide the strategic conditions through which hospitality experiences are designed and delivered. These capabilities influence personalisation, convenience, trust, engagement, co-creation and perceived value, which in turn shape guest and organisational outcomes. Responsible digital governance operates across these relationships, while feedback from guest and organisational outcomes contributes to organisational learning and subsequent capability development.

The framework therefore moves beyond a technology-centred interpretation of future hospitality. It proposes that intelligent technologies generate meaningful guest value when they are integrated with organisational capabilities, responsible and sustainable value creation and appropriate human service. This integrated logic provides a theoretically grounded basis for future empirical testing of the relationships proposed within the FGEF.

Managerial Implications

The findings of this review suggest that hospitality managers should approach intelligent hospitality as an integrated organisational strategy rather than as a series of independent technology investments. The FGEF indicates that technological capabilities create guest value when they are aligned with organisational capabilities, sustainable value creation, human-centred service and responsible digital governance. Several managerial implications follow from this integrated perspective.

Shift from Technology Acquisition to Strategic Integration

Hospitality organisations should evaluate technological investments according to the guest and organisational problems they are intended to address rather than adopting technologies primarily because of their novelty. AI, IoT, smart-hotel systems and immersive technologies should be integrated with existing service processes, employee roles and organisational objectives. Managers should therefore assess interoperability, implementation capability, usability and expected guest value before committing resources to new technologies.

Design Technology Around the Guest Journey

Technology implementation should be guided by its contribution to specific stages of the guest journey. Digital applications can reduce service friction, improve access to information and support personalisation, but their value depends on perceived usefulness, ease of use and trust. Managers should identify where automation improves convenience and where guests continue to value direct human interaction. Providing alternative service channels is particularly important for guests who may be less comfortable with digital technologies or require additional assistance.

Develop Organisational and Employee Capabilities

Digital transformation requires corresponding investment in people and organisational learning. Hospitality organisations should strengthen digital leadership, employee training, data literacy and change-management capabilities alongside technological investment. As AI and automation alter routine tasks, employee development should increasingly emphasise competencies that complement technology, including empathy, judgement, creativity, problem-solving and service recovery. This approach positions employees as participants in intelligent hospitality rather than treating technology primarily as a substitute for labour.

Establish Responsible Digital Governance

The increasing use of guest data and automated decision-making makes responsible digital governance a managerial priority. Organisations should establish clear practices relating to data collection, informed consent, privacy, cybersecurity, transparency and accountability. Guests should understand when they are interacting with automated systems and should have access to human assistance where appropriate. AI-enabled personalisation should also be monitored to minimise intrusive practices, discriminatory outcomes and erosion of guest trust.

Integrate Sustainability with Digital Strategy

Sustainability and digital transformation should be managed as complementary strategic priorities. Connected systems, analytics and intelligent building technologies can support monitoring of energy, water and other resources, but technology investments should be evaluated against measurable environmental and operational outcomes. Managers should also incorporate social dimensions such as employee well-being, accessibility, ethical sourcing and community relationships into sustainability strategies. Transparent measurement and reporting are important for reducing the risk of unsupported sustainability claims and strengthening stakeholder confidence.

Adopt a Balanced Human–Technology Service Model

The evidence does not support a uniform movement towards fully automated hospitality. Guest preferences vary according to service context, technological familiarity, culture and the complexity of the interaction. Routine and information-intensive tasks may be appropriate for automation, whereas emotionally sensitive interactions, complex problem-solving and service recovery may continue to benefit substantially from employee involvement. Managers should therefore design flexible service systems in which human and technological resources complement one another.

Evaluate Emerging Technologies According to Evidence Maturity

Hospitality organisations should distinguish established applications from emerging technological possibilities. AI-supported analytics, selected service automation, smart-hotel systems and VR/AR have a developing evidence base, whereas hospitality applications of GenAI, MR/XR, Digital Twins and the Metaverse remain comparatively emergent. Pilot projects, controlled experimentation and systematic evaluation may therefore be more appropriate than large-scale implementation where evidence regarding guest value, organisational returns and governance implications remains limited.

Measure Outcomes Beyond Operational Efficiency

Evaluation of intelligent hospitality should extend beyond cost savings and process efficiency. Consistent with the FGEF, managers should monitor guest-experience indicators such as convenience, trust, engagement, perceived value and satisfaction alongside organisational indicators including employee capability, service innovation, resource efficiency and adaptability. Such multidimensional assessment can help organisations determine whether technological initiatives are creating meaningful value rather than simply increasing the level of digitalisation.

Overall, the managerial implication of the FGEF is that future hospitality competitiveness is likely to depend less on the quantity of technology adopted than on the quality of its integration. Hospitality organisations that align intelligent technologies with organisational capabilities, responsible governance, sustainable value creation and meaningful human interaction will be better positioned to develop adaptive and guest-centred service systems.

Future Research Agenda

The synthesis and the proposed Future Guest Experience Framework (FGEF) identify several priorities for advancing research on intelligent hospitality. Future studies should move beyond examining individual technologies in isolation and investigate the relationships among intelligent technologies, organisational capabilities, sustainable value creation, human-centred hospitality and guest-experience mechanisms. Particular attention is required to empirical validation, longitudinal change, contextual diversity, responsible digital governance and the varying maturity of emerging technologies.

Empirical Validation of the FGEF

A primary research priority is the empirical examination of the relationships proposed within the FGEF. Future studies should test whether intelligent technologies, organisational capabilities, sustainable value creation and human-centred hospitality influence guest outcomes directly or through mechanisms such as personalisation, convenience, trust, engagement, co-creation and perceived value. Structural equation modelling, multilevel modelling and mixed-method designs could be used to examine these relationships across different hospitality settings.

Research should also investigate potential interaction effects among the four capability domains. For example, the contribution of intelligent technologies to guest experience may depend on organisational readiness or the availability of appropriate human support. Similarly, responsible digital governance may strengthen the relationship between technology-enabled personalisation and guest trust. Testing such relationships would help determine whether the FGEF provides explanatory value beyond existing technology-adoption or customer-experience models.

Longitudinal Examination of Digital Transformation

Much of the existing hospitality technology literature captures guest perceptions and organisational conditions at a particular point in time. Future research should adopt longitudinal designs to examine how technology adoption, organisational capabilities and guest responses evolve. Such research could investigate whether initial

novelty effects associated with smart-hotel technologies, service robots or immersive experiences persist as users become more familiar with them.

Longitudinal organisational studies are also needed to understand how hotels develop digital capabilities, restructure employee roles and realise value from technological investments over time. This would provide stronger evidence concerning the relationship between digital transformation, organisational learning and resilience.

Human - Technology Collaboration and Workforce Transformation

Future research should examine how intelligent technologies reshape rather than simply replace hospitality work. Particular attention should be given to changing employee competencies, job design, emotional labour, digital skills, employee well-being and perceptions of automation. Comparative studies could evaluate guest and employee responses to human-only, technology-only and hybrid service configurations.

Research should also identify which service encounters are most appropriate for automation and which continue to benefit from direct human involvement. Service recovery, complaint management, emotionally sensitive interactions and complex decision-making provide particularly relevant contexts for investigating human–technology complementarity.

Responsible AI, Privacy and Digital Trust

As hospitality organisations increasingly use AI and customer data for personalisation and automated decision-making, responsible digital governance requires greater empirical attention. Future studies should investigate how privacy concerns, informed consent, cybersecurity, algorithmic transparency and perceived fairness influence guest trust and technology acceptance.

Research should also examine whether guests respond differently to AI-enabled services when organisations explain how data are collected and used. Experimental studies could test alternative levels of transparency, personalisation and human oversight to identify conditions under which intelligent services enhance rather than undermine trust.

Sustainability and Intelligent Hospitality

The relationship between digital transformation and sustainable hospitality remains insufficiently established. Future research should examine whether AI, IoT, analytics and smart-building technologies produce measurable reductions in energy consumption, water use, waste or other environmental impacts rather than relying primarily on anticipated benefits.

Research should also examine the social consequences of digitally enabled sustainability, including employee well-being, accessibility, community relationships and responsible sourcing. Longitudinal studies could investigate whether the integration of digital and sustainability capabilities contributes to organisational resilience during environmental, economic or market disruptions.

Cross-Cultural, Emerging-Economy and SME Research

Greater contextual diversity is required within intelligent-hospitality research. Technology acceptance, trust, privacy expectations and preferences for human interaction may differ substantially across cultural and institutional environments. Cross-cultural studies should therefore examine whether the relationships proposed within the FGEF remain stable across countries and customer segments.

Greater attention should also be given to emerging economies and small and medium-sized hospitality enterprises. Much of the discussion surrounding intelligent hospitality assumes access to sophisticated technological and financial resources. Research involving smaller organisations can identify alternative pathways to digital transformation and clarify how resource constraints, infrastructure, skills and institutional conditions affect adoption and outcomes.

Digital Inclusion and Accessibility

Future hospitality research should examine whether increasing digitalisation creates barriers for particular guest groups. Age, disability, digital literacy, language, access to devices and technological familiarity may influence the ability to use automated and digitally mediated services.

Accessibility should consequently be treated as an important dimension of human-centred hospitality rather than solely as a technical design requirement. Future studies could examine how universal design, multilingual interfaces, assistive technologies and access to human service influence convenience, trust and perceived value across diverse guest populations.

Emerging Technologies and Evidence Maturity

Research on emerging technologies should distinguish technological possibility from demonstrated hospitality outcomes. VR and AR have a comparatively developed research base, whereas GenAI, MR/XR, Digital Twins and Metaverse-related hospitality applications require further empirical validation. Future research should evaluate actual guest behaviour, organisational performance, implementation costs and long-term value rather than relying predominantly on intention-based or conceptual evidence.

Generative AI requires particular attention because of its rapid development and potential applications in customer communication, recommendation, marketing and organisational knowledge management. Research should investigate reliability, hallucination risk, privacy, intellectual property, employee use and the conditions under which GenAI contributes meaningfully to guest experience.

From Conceptual Relationships to Testable Propositions

The FGEF provides a foundation for developing testable relationships in future empirical studies. Illustrative propositions include:

P1: Intelligent-technology capability is positively associated with guest-experience outcomes when mediated by personalisation and convenience.

P2: Organisational capabilities strengthen the relationship between intelligent-technology capability and effective service innovation.

P3: Human-centred hospitality strengthens the positive relationship between technology-enabled service and guest trust.

P4: Responsible digital governance strengthens the relationship between technology-enabled personalisation and guest trust.

P5: Sustainable value-creation capability is positively associated with perceived guest value and organisational resilience.

P6: Guest trust and perceived value mediate the relationship between integrated intelligent-hospitality capabilities and loyalty-related behavioural intentions.

These propositions are intended as theoretically derived directions for empirical investigation rather than as hypotheses tested within the present review.

Overall, future hospitality research should progress from technology-specific adoption studies towards more integrated, longitudinal and context-sensitive examination of intelligent hospitality systems. Empirical testing of the FGEF across different organisational, cultural and technological environments would help establish the conditions under which intelligent technologies, organisational capabilities, sustainability and human-centred service collectively contribute to future guest experience.

Limitations

This study has several limitations that should be considered when interpreting its findings and the proposed Future Guest Experience Framework (FGEF). First, although the Structured Narrative Literature Review (SNLR) was informed by systematic review principles and PRISMA 2020 reporting, it was designed primarily for conceptual integration rather than exhaustive systematic evidence synthesis or meta-analysis. The findings should therefore be interpreted as a structured critical synthesis of the selected literature rather than a comprehensive representation of all research on intelligent hospitality.

Second, the contemporary review corpus was limited to 30 peer-reviewed English-language studies published between 2016 and 2026. While this period captures significant developments in artificial intelligence, smart hospitality, digital transformation, sustainability and immersive technologies, relevant research published outside the defined period or in other languages may not have been represented. Foundational theoretical publications preceding the review period were incorporated separately for conceptual development but were not counted within the 30-study corpus.

Third, the literature search primarily relied on Scopus and Web of Science, supplemented by additional academic discovery sources and backward citation searching. Although this strategy provided multidisciplinary coverage, differences in database indexing and publication availability may have resulted in the omission of relevant studies.

Fourth, the reviewed literature is methodologically and contextually heterogeneous. The corpus includes empirical, conceptual, bibliometric and review-based studies examining different technologies, hospitality settings, geographical contexts and analytical levels. This diversity supports conceptual integration but limits direct comparison across studies and does not permit statistical estimation of pooled effects.

Fifth, the evidence base for emerging technologies is uneven. Research concerning AI, smart hospitality, service robots, VR and AR is comparatively more developed, whereas Generative AI, MR/XR, Digital Twins and Metaverse-related hospitality applications remain at earlier stages of empirical investigation. Consequently, conclusions regarding these emerging technologies should be regarded as provisional and subject to further empirical validation.

In addition, study screening, quality appraisal, data extraction and thematic coding were conducted by a single reviewer; although predefined criteria and repeated assessment were used to enhance consistency, the absence of independent duplicate screening and coding may have introduced reviewer subjectivity.

Finally, the FGEF is a conceptually derived framework developed from the synthesis of existing literature and has not been empirically tested within the present study. The proposed relationships among intelligent technologies, organisational capabilities, sustainable value creation, human-centred hospitality, guest-experience mechanisms and outcomes therefore require validation across different hospitality organisations, markets and cultural contexts. Future longitudinal, cross-cultural and mixed-method research can further assess, refine and extend the framework.

CONCLUSION

The hospitality industry is undergoing significant transformation as intelligent technologies, evolving guest expectations, sustainability priorities and organisational change increasingly converge. This Structured Narrative Literature Review synthesised 30 peer-reviewed studies published between 2016 and 2026 to examine how these developments are reshaping the future guest experience. The synthesis indicates that technological innovation alone does not determine hospitality outcomes; rather, its contribution depends on how effectively technology is integrated with organisational capabilities, sustainable value creation, responsible governance and human-centred service.

The review further demonstrates that contemporary hospitality research remains distributed across several interconnected but often separately examined streams, including artificial intelligence, smart hotels and IoT,

digital transformation, sustainable hospitality, immersive technologies and guest-experience research. Bringing these streams together reveals that personalisation, convenience, trust, engagement, co-creation and perceived value provide important mechanisms through which technological and organisational capabilities may influence guest outcomes.

Building on this synthesis, the study proposes the Future Guest Experience Framework (FGEF). The framework integrates four strategic capability domains Intelligent Technologies, Organisational Capabilities, Sustainable Value Creation and Human-Centred Hospitality and connects them with guest-experience mechanisms and subsequent guest and organisational outcomes. Responsible digital governance operates across these relationships as a cross-cutting condition. The contribution of the FGEF therefore lies not in presenting its individual components as entirely new, but in integrating them within a multi-level structure that connects guest, organisational and system/value perspectives.

The framework also reinforces the continuing importance of the human dimension of hospitality. As AI, automation and connected technologies become increasingly embedded in service systems, their value will depend partly on whether they complement rather than unnecessarily displace empathy, judgement, accessibility and meaningful interpersonal interaction. Similarly, sustainability and responsible data practices should be integrated into hospitality innovation rather than treated as peripheral considerations.

The FGEF remains conceptually derived and requires empirical validation. Future research should test its proposed relationships across different hospitality settings, cultural contexts and organisational scales and examine how these relationships evolve as technologies and guest expectations change. In this respect, the framework provides a foundation for moving hospitality research beyond technology-specific adoption towards a more integrated understanding of intelligent, sustainable, responsible and human-centred guest experience.

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APPENDIX A. DATABASE SEARCH STRATEGY

The literature search covered peer-reviewed publications from **2016 to 2026** and was conducted between **June and August 2026**, with the final searches completed in August 2026. Scopus and Web of Science were used as the principal bibliographic databases. ScienceDirect, SpringerLink, Emerald Insight, Taylor & Francis Online, SAGE Journals and Google Scholar were used as supplementary discovery sources and for backward citation searching.

The searches combined hospitality-related terms with the principal conceptual domains examined in the review. Search syntax was adapted to database functionality while maintaining equivalent conceptual coverage.

Core search structure

("hospitality" OR "hotel*" OR "guest experience") AND ("artificial intelligence" OR AI OR "smart hotel*" OR "intelligent hospitality" OR "Internet of Things" OR IoT OR "digital transformation" OR sustainability OR "virtual reality" OR "augmented reality" OR "immersive technolog*" OR metaverse)

Additional targeted searches included:

- "guest experience" AND hospitality
- "artificial intelligence" AND hospitality
- "smart hotel*" OR "intelligent hospitality"
- "digital transformation" AND (hospitality OR tourism)
- hospitality AND sustainability
- ("virtual reality" OR "augmented reality" OR "immersive technolog*" OR metaverse) AND hospitality

Scopus: Searches were conducted within available title, abstract and keyword fields using the above conceptual domains, restricted to the defined publication period, English language and relevant peer-reviewed journal literature.

Web of Science: Equivalent topic searches were undertaken using the same conceptual domains and eligibility restrictions.

Supplementary sources: ScienceDirect, SpringerLink, Emerald Insight, Taylor & Francis Online and SAGE Journals were used to identify potentially relevant journal publications not captured during the principal database screening and to support backward reference searching.

Google Scholar: Google Scholar was used only as a supplementary discovery source rather than as the principal systematic database. Screening was restricted to records relevant to the predefined review concepts and eligibility criteria and potentially eligible studies were checked against the principal database results to minimise duplicate inclusion.

All identified records were consolidated before screening and duplicate records were removed prior to title and abstract assessment. The complete search process is summarised in the PRISMA-informed literature-selection flow presented in Figure 1.