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Knowledge and attitudes of hotel managers in Seville on smart hospitality

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ABSTRACT

New communications technologies can enhance both the tourist experience and the efficiency of tourism organisations and destinations. Even though smart hospitality can contribute to brand differentiation, improved performance, and increased client satisfaction, its study has been neglected in previous, fundamentally quantitative and consumer-centred investigations within non-European contexts. Despite the key role of smart hospitality in the tourism ecosystem, the supplier perspective has mainly been ignored. In order shed light on such supplier perspective, hotel managers were interviewed in depth, at a mature tourism destination. Their different views on smart hospitality and the implications for practitioners, governmental agencies, and academia are all brought to light. The conclusions are that greater effort at all levels is needed to incentivise smart hospitality.

KEYWORDS

Smart hospitality; Hotel managers; Qualitative research; In-depth interviews; Mature destination.

RESUMEN

Las nuevas tecnologías de la comunicación pueden mejorar tanto la experiencia turística como la eficiencia de las organizaciones y destinos turísticos. Si bien la hospitalidad inteligente puede contribuir a la diferenciación de marca, a un mejor rendimiento y a una mayor satisfacción del cliente, su estudio se ha desatendido en investigaciones previas, fundamentalmente cuantitativas y centradas en el consumidor, en contextos no europeos. A pesar del papel clave de la hospitalidad inteligente en el ecosistema turístico, la perspectiva del proveedor se ha ignorado en gran medida. Para arrojar luz sobre dicha perspectiva, se entrevistó en profundidad a gerentes de hotel en un destino turístico maduro. Se pusieron de manifiesto sus diferentes perspectivas sobre la hospitalidad inteligente y sus implicaciones para los profesionales, las agencias gubernamentales y el mundo académico. Las conclusiones son que se necesita un mayor esfuerzo a todos los niveles para incentivar la hospitalidad inteligente.

PALABRAS CLAVE

Hospitalidad inteligente; Gerentes de hotel; Investigación cualitativa; Entrevistas en profundidad; Destino maduro.

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1. INTRODUCTION

Over recent decades, both advances within the field of information technologies and continuous Internet penetration have been observed. Users of Internet services are now close to 5.56 billion people throughout the world (67.9% of the global population) (We are social, 2025). Thus, the development of virtual/augmented reality, the Internet of Things, cloud computing and blockchain, data mining, and artificial intelligence have opened up a new universe of possibilities with repercussions both at an individual level and within society as a whole in the area of security, urban management, and governance (Knieps, 2024; Kobusińska, Leung, Hsu & Chang, 2018; Nag, Hassan, Das, Sinha et al., 2024; Sabri & Witte, 2023).

More recently, the term "smart" has been popularised (e.g., smart watch and smart television) to refer to technologies that in intuitive and automatic ways facilitate interaction between humans and devices (Buhalis, O'Connor & Leung, 2022). Briefly, as Alter (2019, p. 384) affirmed, a "purposefully designed entity X is smart to the extent to which it performs and controls functions that attempt to produce useful results through activities that apply automated capabilities and other physical, informational, technical, and intellectual resources for processing information, interpreting information, and/or learning from information that may or may not be specified by its designers" (Alter, 2019, p. 384).

Likewise, the concepts of smart tourism, smart destinations, and smart hospitality all emerge when the accent is placed on enhancing both the tourist experience in the field of tourism and the efficiency of tourism organisations and destinations thanks to technology-based management devices and practices (Buhalis *et al*., 2023). Smart hospitality, in particular, is fertile ground for the use of a wide range of high-technology tools that permit improvement through cost reductions (Stylos, Fotiadis, Shin & Huan, 2021). Higher levels of client satisfaction (whose preferences and expectations are far from static) are therefore achieved, through the provision of more personalised and contextualised services, which at the same time mark out differences between competitors (Law, Ye & Chan, 2022).

However, despite the potential of smart technologies, few hospitality organisations have been capable of taking full advantage of the use of ICT. In the academic field, that observation is supported by the scant investigation published on smart hospitality (in comparison with smart tourism), which hinders a deeper understanding of the key concepts (Buhalis *et al*., 2023).

In geographic terms, most studies on smart hospitality and tourism research have been centred on the United States, China, and South Korea, employing quantitative (mainly survey-based) methodologies. Those studies have been approached through the perspective of the consumer, overlooking the supplier perspective (Law *et al*., 2022).

This scarcity of previous studies on the supplier perspective, despite the key role that supplier plays, is surprising, given that technology alone is not enough to promote the introduction of smart hospitality. Thus, Buhalis, O'Connor and Leung (2023) highlighted the importance of agility: "agility is required not only for the management of innovation, operations, back-office functions, corporate headquarters and top management of one organisation, but across the entire network" (p. 371) in such a way that the management mindset and organisational business models are converted into the two pillars of agility. The aim is to reach cooperation and communal value creation, moving beyond the perspective of isolationistic competition. It might be thought that the need for an agile mindset is the most relevant aspect at a mature rather than at an emergent destination, as the sector can be subject to inertias that constrain smart developmen, although there is a lack of empirical data to confirm such premises. In fact, Chen, Tian, Law and Zhang (2022) highlighted the scant investigation developed to date on the application of smart tourism at mature destinations.

Finally, although of no less importance, some of the constraints on the development of smart hospitality are behavioural and attitudinal reservations towards the adoption of smart technologies (Stylos *et al*., 2021) among the hospitality stakeholders (top and mid-level hotel managers, owners and employees), a topic on which investigation is also scant (Leung, 2019).

In view of the above, it is therefore necessary to investigate knowledge of smart hospitality at mature European destinations, which have been neglected in the previous literature in such a way that the findings of Kruja, Hysa, Duman & Tafaj (2019) on younger and educated small-medium size hotel owners in Tirana (Albania) revealing lower levels of reluctancy to adopt SaaS and, likewise, the analysis of Yağmur, Demirel & Kiliç (2024) of 5-star hotel managers' perspectives on smart tourism and smart technologies performed in Antalya (Turkey) are notable exceptions.

Therefore, our main aim is to investigate knowledge of smart hospitality at mature destinations in Europe. To do so, in-depth qualitative investigation, called for by Buhalis *et al.* (2023), is particularly appropriate for the analysis of the

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knowledge and the attitudes of hotel managers towatds smart hospitality. Thus, the present investigation in the context of a mature destination and adopting a micro-perspective (hotel managers), sets out to provide responses to the following research questions:

RQ1. What is smart hospitality?

RQ2. What benefits are attached to becoming a smart hotel?

RQ3. What is the importance of digitalisation, data management, and sustainability?

RQ4. What information would a hotel manager be willing to share?

2. LITERATURE REVIEW

2.1. Smart cities and smart tourism

The 'smart city' concept, understood as "a harmonized city where ICT-driven technology enhances city services such as business, transportations, health care, communication and energy supplies" (Chang, 2021, p. 2), has gained greater popularity since its appearance, especially in the communications media, and it has generated immense expectations both in the business world, in politics, and even in the academic arena.

The potential benefits of smart cities are relevant and numerous: improvements to services and sustainable living models, resource utilisation that contributes to reduced wastage (of time and resources) and increased transparency and openness, which imply information sharing, interoperability, open-plan cities, pedestrianised zones with less traffic, improvements to waste management, transport services, crime-fighting, etc. (Al Nuaimi, Al Neyadi, Mohamed & Al-Jaroodi, 2015; Lata, Jasrotia & Sharma, 2022). Along these lines, the 2024 call for collaborative projects of the European Union Mission on Climate-Neutral and Smart Cities (Cities Mission) funded projects for a total amount of EUR 98 million under four headings: a) Rethinking urban spaces towards climate neutrality; b) Zero-pollution cities; c) Mobility management plans and behavioural change; d) Integrated peri-urban areas in the transition towards climate neutrality.

The smart city is a new urban development paradigm that unites service efficiency and quality-of-life improvements with a reduction in the environmental impacts generated by the city (Duygan, Fischer, Pärli & Ingold, 2022), although there are significant challenges to their development. Perhaps one of the most relevant is data security and privacy, as it relies on ICT technologies such as sensors, cloud computing, electronic objects, machine learning, etc. (Ismagilova, Hughes, Rana & Dwivedi, 2022)- which must be resolved, so that a better standard of living is achieved for coming generations (Razmjoo, Østergaard, Deanï, Nezhad & Mirjalili, 2021). Being aware of that type of risk, in the area of Artificial Intelligence (AI), the European Union AI Act (Regulation EU 2024/1689) "sets out risk-based rules for AI developers and deployers regarding specific uses of AI" in order to have a trustworthy AI in Europe.

Smart cities are understood as "an integrated living solution that links many life aspects such as power, transportation, and buildings in a smart and efficient manner to improve the quality of life for the citizens" (Al Nuaimi *et al*., p. 2), which thereby lays the foundations for smart tourism. In the same way as technology in smart cities can improve infrastructural and resource management that will impact on quality-of-life improvements, these same technologies applied to the field of tourism offer tourists enhanced experiences at all stages of their relation with the destination (gathering information before the journey, personalised services during their stay at the destination, and sharing post-travel experiences). Decision-making can also be improved, having collected information on tourist behaviour, which may ultimately improve destination competitiveness (Sun, Ye, Law & Hsu, 2022).

Liu, Hall, Zhu and Ting Pong Cheng (2025) defined smart tourism as "a tourism that involves technology, innovation, sustainability, accessibility, and is tourist-centred" (p. 566) and the European Commission as "a destination facilitating access to tourism and hospitality products, services, spaces and experiences through ICT-based innovative solutions, making tourism sustainable and accessible, and fully leveraging their cultural heritage and creativity" (European Commission, 2022b, p. 13).

Thus, smart tourism is a catalyst for change (Buhalis *et al*., 2023; Neuhofer, Buhalis & Ladkin, 2015) that facilitates "dynamic service encounters, agile consumer profiling", and "co-creation practices" (Buhalis *et al*., 2023, p. 372). Without a doubt, technology is key to smart tourism, but its mere existence (*e.g*., Internet of Things (IOT), smart phones, and cloud computing) and its application with no interconnection (spaces where tourism stakeholders can process and share the information that is collected) will not lead to smart practices (Arenas, Goh & Urueña, 2019; Buhalis *et al*., 2023; Xiang, Stienmetz & Fesenmaier, 2021) that can "integrate, analyze, and ultimately support optimized decisions based on collective knowledge. which in turn, enhances the tourist experience, offers new business opportunities, and improves

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destination governance in an intelligent way" (Xiang *et al*., 2021, p. 4).

At an international level, Spain is a pioneer of smart tourism thanks to the National and Comprehensive Tourism Plan (Plan Nacional e Integral de Turismo) 2012-2015 which sets smart destinations as one of the priority actions to be coordinated by Segittur – the state company for the management of tourism of the Spanish Ministry of Tourism) (European Commission, 2022b).

Smart destinations are those in which better environments are generated for all destination stakeholders (tourists, residents, and businesses) (Xiang *et al*., 2021). Nevertheless, technology must be used in such a way to create the right context: in which, a) the level of satisfaction and loyalty of the tourist towards the destination increases, thanks to the organisation of memorable tourist experiences; and b) operational efficiency, cooperation, competitiveness, and resource management all increase, as well as sustainability, thanks to real-time information exchange between the various stakeholders (tourists, suppliers, DMOs, and governments) (Buhalis *et al*., 2023).

Thus, converting an intelligent city into an intelligent tourism destination, briefly put, implies transposing and integrating the components of tourism activity and stakeholder perspectives and needs into the design of an intelligent city. As noted by Cerdá-Mansilla, Tussyadiah, Campo & Rubio (2024, p. n.a), "smart destination is a space in which all agents involved with the destination collaborate in efficient management of infrastructure and use technology to increase the quality of life of both locals and tourists".

2.2. Smart hospitality and smart hotel

Smart hospitality refers to the interconnectivity and the interoperability of integrated technologies within the hospitality ecosystem (Buhalis & Leung, 2018). In other words, smart hospitality is "the integration of data and information from a hospitality corporation's stakeholders and ecosystem with the utilization of technologies and then the analysis and transformation of these data automatically and intelligently into better physical and virtual experiences for customers, fluent personalized service and efficient business operations" (Hsu & Tseng, 2022, p. 505).

The benefits associated with the transformation of hospitality into smart hospitality, thanks to advanced decision-support systems, mining web sources, robotic technologies, and virtual reality among others, are multiple. Both in terms of a) the offer (process automatisation, demand forecasting, crisis management, and value co-creation, for example, that improve management effectiveness); and b) demand for the guest/tourist, who will enjoy an enhanced experience through which it will be possible to anticipate their needs and make context-specific customised recommendations (Osei, Ragavan & Mensah, 2020; Yağmur *et al.*, 2024).

Financial benefits for businesses are perhaps the most evident positive type of effect for smart hospitality (Osei *et al*., 2020) derived from, among other things, "greater control on purchasing, procurement needs", and improvements to "decision making" (Buhalis & Leung, 2018, p. 46), labour turnover, and seasonal employment improvements, operational and employee efficiency, customer service quality, supply chain efficiency, digitalisation of operations, and the creation of new jobs. Nevertheless, obstacles such as financial costs, employee resistance related to loss of job positions and customer resistance to the adoption of advanced systems will all logically have to be negotiated (Osei *et al*., 2020).

Among the three foundations of the hospitality industry, *i.e*., a) accommodation, b) food and drinks, and c) travel and tourism (Gupta, Modgil, Lee, Cho & Park, 2022), all of them can potentially benefit from the application of technology within smart frameworks (see, for example, Wong, Huang, Lin and Jiao (2022) for smart dining, and Buhalis, Papathanassis and Vafeidou (2022) for cruise tourism). Smart hotels, the epicentre of the tourism industry (Stylos *et al*., 2021), can apply technology to provide wide arrays of high value services (room services, housekeeping, etc.), as well as improved understanding of client satisfaction (Gupta *et al*., 2022). For example, the integration of sustainable buildings with smart management will consistently provide sustainability benefits (Wong & Loo, 2026).

So far, the developmemt of smart technologies has prompted a) new paths for interaction with customers to provide them with more personalized services thanks to a more holistic and precise customer profile due to a deep real-time deep understanding of habits, tastes and desires; and b) their development has become relevant in order to effectively manage resources allocation reducing wasted efforts and increasing operational efficiency (O'Connor, Hsu & Leung, 2025; Yağmur *et al*., 2024).

Unfortunately, the hospitality ecosystem is slow (Osei *et al*., 2020) and unwilling (O'Connor *et al*., 2024) to adopt smart technologies. The adoption of smart technologies, particularly in the accommodation sector, depends not only upon "their relative benefits, but also the perception of involving

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a low-risk and low-cost implementation" (Stylos *et al.*, 2021, p. 3). In a more concrete way, Stylos *et al.* (2021) identified four obstacles to the adoption and assimilation of smart hotel technologies: a) technological barriers due to technology immaturity (that might cause instability in the system) or the vast infrastructural modifications that are required to further connectivity and interoperability; b) financial barriers commonly due to scarce resource allocation; c) different hospitality stakeholder reluctancy to adopt smart technologies; and d) external factors such as the lack of governmental norms and/or regulations (particularly, on data privacy and security area). In the case of smart hotels, Leung (2019) showed that Taiwanese hotel stakeholders identified financial constraints, technological barriers, and employee and manager reluctancy to adopt modern technologies as obstacles to adopting smart practices.

Law *et al.* (2022), after an analysis of the content of the previous literature on smart hospitality and tourism research, found that suppliers were lent scant little attention from a general viewpoint (despite their key role in the development and implementation of smart services) and called for studies from a micro-perspective. In that context, smart hospitality is worth studying as a different field to smart tourism (Law *et al.*, 2022), to understand how the aforementioned barriers work in the hospitality ecosystem (Stylos *et al*., 2021).

If attention is focused on both behavioural and attitudinal barriers, it may be said that the new technologies are not always warmly received, neither by the employees nor by the owners/managers (Leung, 2019; Stylos *et al*., 2021), which raises the need to study the supplier perspective, as it is key for the implantation and the development of smart hospitality and to convert it, in the words of Buhalis *et al.* (2023, p. 379) into a "functioning concept". However, despite the relevant role of suppliers, the supplier perspective has been neglected in previous investigations and, if not neglected, it has been approached from a general point of view. It must therefore be studied from a micro-perspective too, as Law, Ye and Chan (2022) maintained, in their literature review on smart hospitality and tourism research. In this context, the study of hotel managers and smart hospitality is approached with the aim of knowing: a) what idea they have of it; b) what they see as the benefits that it could provide; c) what role they think that digitalisation, data management, and sustainability could play; and, finally, d) what information within the framework of the necessary interconnectivity would be available to share.

3. METHODOLOGY

Various countries have committed themselves to smart tourism through a strategy at a national level (*e.g*., South Korea, United Arab Emirates, Spain) (Ye & Chan, 2022). In Europe, the European Commission fosters smart destinations through different initiatives: a) publishing the "EU guide on data for tourism destinations" (European Commission, 2022a), among others; b) sharing best practices with "Leading examples of Smart Tourism Practices in Europe" (https://smart-tourism-capital.ec.europa.eu/leading-examples-smart-tourism-practices-europe_en); and c) rewarding innovative and smart tourism practices in European cities and naming European Capitals of Smart Tourism (https://smart-tourism-capital.ec.europa.eu/index_en).

In particular, smart tourism in Spain has been part of the National Integrated Tourism Plan since 2012 and has a Network of Intelligent Tourism Destinations consisting of 328 destinations, 63 institutions, 89 collaborative firms, and 3 international observers (Gobierno de España, 2022). Besides, several Spanish cities have been named European Capital of Smart Tourism (Malaga in 2020, Valencia in 2022 and Sevilla in 2023).

Seville, more specifically, has been recognized as a city with Best Practices in Accessibility (Accessible City Guide, Accessibility through Digital Innovations), Best Practices in Sustainability (Sustainable Action Plans, Urban Water Management, Sustainable Urban Transformation), Best Practices in Digitalisation (Digital Tours and City Exploration, Augmented Reality in Tourism, Open Data for Improving Tourism) (European Commission, 2023). Particularly, an assessment in the area of Digitalisation established whether the city is "supporting tourism businesses in the development and use of digital skills and tools" so that it offers "innovative tourism and hospitality information, products, services, spaces and experiences adapted to the needs of the consumers through ICT-based solutions and digital tools" (European Commission, 2023, pp. 6-7).

It is important to consider the stakeholders of tourism ecosystems when analysing smart tourism, without whom it could not become a reality. Considering the role of hospitality from the point of view of the stakeholder, the lack of attention paid to the role of hotels and, more specifically, the hotel managers, is surprising. It has relegated the supplier perspective to a secondary level, despite the need to know the perceptions of practitioners from a micro-perspective (Stylos *et al*., 2021; Ye & Chan, 2022). In fact, Mehraliyeve, Choi and Köseoglu (2019) highlighted an important methodological gap in

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investigation into smart tourism: the fact that there are all-too-few qualitative studies with human participants.

Qualitative investigation is appropriate to respond to questions such as *why* and *how* with a view to understanding and to exploring more than explaining or manipulating the variables, so as to respond to *how much* or *to what extent*, for which purpose non-numerical data is used through rich narrative material (words) (Chandra & Shang, 2019; Nassaji, 2020; Haven & Van Grootel, 2019). In contrast to quantitative research, qualitative research "does not introduce treatments, manipulate or quantify predefined variables" but, instead, it "aims to provide in-depth insights and understanding of real-world problems" (Moser & Korstjens, 2017, p. 1). Thus, thanks to qualitative investigation, novel research topics can be thoroughly examined, given that this branch of research is particularly appropriate for describing, explaining, and interpreting phenomena (Dunwoodie, Macaulay & Newman, 2022).

Qualitative research is crucial for deepening our understanding of the tourism sector (Vaz, de Carvalho, Teixeira & Castanho, 2025) and has been proven relevant when the hospitality industry is researched to delve into hotel managers' (Akel & Noyan, 2024; Yağmur *et al*., 2024) and other stakeholders' perspectives (Pergelova, Beck, Stylos & Zwiegelaar, 2026; Putra & Law, 2024).

Hence, in-depth interviews were held with general managers of hotels within Seville (Spain), in order to understand the concept that the practitioners hold of smart hospitality, its benefits, and what roles digitalisation, data management, and sustainability play, as well as from a more concrete point of view, what information they would be willing to share. Semi-structured and open-ended questions were formulated: Q1. What is a smart hotel for you? Q2. What benefits are attached to becoming a smart hotel? Q3. What is the importance of digitalisation, data management, and sustainability? Q4. What information would a hotel manager be willing to share with hotels at a Smart Tourism Destination and other stakeholders within the hotel ecosystem?

Semi-structured interviews were chosen because, at the same time as they provide flexibility, so that the interviewees can present their views on any topic that is covered, they also ensure that data on the key areas of research interest are collected. The use of interviews casts light on the way that smart hospitality can be interpreted as a concept, as it is a particularly suitable sort of research when investigating individuals who may be reluctant to respond to surveys. It may also, through wholistic description, shed light on "how people attribute meaning to their social experiences […] (and) allow for depth and nuance in research findings that quantitative approaches alone would not facilitate" (Dunwoodie *et al*., 2022, pp. 2-3).

All the interviews, conducted in Spanish (the native language of the interviewees), lasted between 15-20 minutes, were face-to-face interviews held in the hotel of the interviewee for convenience, and were recorded, for calm analysis of the responses at a later point in time. No information on the interview content (not even a general clue on smart tourism) had previously been provided to the interviewees, because the aim was firstly to know what was understood as smart hospitality. Both the lack of previous explanation and the recording process reinforced the construct validity of the study; besides, the review of the previous literature helped maintain the internal validity of the study, as did careful sharing of the findings without adding comments to the interviewees' responses (Yağmur *et al.*, 2024). Investigator triangulation to "eliminate the bias that may occur when a single researcher conducts a study" (Morgan, 2024, p. 1848) was chosen.

All participants gave their informed consent to record the interview for analysis and their anonymity was guaranteed. Descriptive analysis (i.e., summarizing and interpreting the data) was chosen in order to understand who, what, where, when and to what extent (Akel & Noyan, 2024; Yağmur *et al*., 2024).

Given the relevant role of a hotel general manager both in the start-up and in the smooth running of a smart hotel, non-probability purposeful sampling was used and the researcher adopted the role of an observer, limiting any comments to encouraging the interviewees to speak freely. A summary of participant features is shown in Table 1 (75% situated within the city centre and 62% with between 51 and 100 rooms).

It is not possible to rely upon a general formula to set the sample size in tourism qualitative interview research (Czernek-Marszałek & McCabe, 2024) and, therefore, "rather than an increasingly large or representative sample size as typically favored with quantitative methods, scholars should instead focus on data saturation" (McGinley, Wei, Zhang & Zheng, 2021, p. 9), as the aim is not statistical generalizability. Data saturation was reached in this research when no new information/insight was possible to be collected from the participants.

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Table 1. Sample features

HOTELS	AFFILIATION	TYPE	CATEGORY	ROOMS	LOCATION
Hotel 1	Independent	Boutique	Four stars	<50	City centre
Hotel 2	Independent	Leisure/ Business	Four stars	51-100	City centre
Hotel 3	Chain	Leisure/ Business	Four stars	>200	Outskirts
Hotel 4	Independent	Leisure/ Business	Three stars	51-100	City centre
Hotel 5	Independent	Leisure/ Business	Tourism Apartments	51-100	City centre
Hotel 6	Independent	Leisure	Four stars	51-100	City centre
Hotel 7	Independent	Leisure/ Business	Four stars	51-100	City centre
Hotel 8	Chain	Leisure/ Business	Four stars	151-200	Business district

4. RESULTS

4.1. What is a smart hotel?

The interviewees differed with regard to what they understood as a smart hotel. For example, GM1 stated that "to be a smart hotel implies the application of technological tools and digital applications that can be of significant help to us with the monitoring and the control of operations, especially with tourist apartments and catering", while GM2 explained that "to be a smart hotel implies adapting product intelligence (knowledge of what intervenes in the operations) to the needs of the client".

From the analysis of the set of responses, a greater convergence of opinion was only observed in so far as a smart hotel covered data management (big data) (GM1, GM2, and GM5), although it was something that only 3 out of the 8 interviewees mentioned.

Other interviewees mentioned such aspects as the use of technologies (GM1 and GM4), interaction with the destination (GM1 and GM2), monitoring of operations (GM1), application of common sense, and use of information (GM4). Some interviewees offered more detailed responses: GM6 mentioned improvements to client services through technology and reduction of energy expenditure, water consumption, and waste recycling; GM2 referred to the anticipation of demand, cost reduction, and the availability of on-line technology for the client, in line with GM3, so that smart hospitality services are offered to the client through technological applications ("not by people"), which will lead to savings (on personnel, energy, etc.) for the hotel.

4.2. What benefits are attached to becoming a smart hotel?

On the question of the benefits linked to a smart hotel, the interviewees showed a higher degree of agreement. From the perspective of demand, four of the general managers who were interviewed thought that becoming a smart hotel could improve client satisfaction (GM2, GM4, GM5, and GM6). Moreover, GM1 pointed out that that more time could be dedicated to client relations and GM2 highlighted its role in differentiation. However, the majority of the benefits that were mentioned referred to aspects related to the offer: automatisation of processes and the improvement of internal and external communication (GM1), improvement of productivity (GM1 and GM2), improvement of occupancy (GM4) and, above all, the efficient use of databases (GM1, GM5, and GM6).

Only one interviewee referred to the benefits within the field of branding and positioning through quality environmental management seals (GM6).

4.3. What is the importance of digitalisation, data management, and sustainability?

The diversity of responses to the above question is striking, as only three interviewees referred to data management as a highly important matter (GM1, GM3, and GM6): "they are the fundamental underpinning of hotel management", in the words of GM6, as well as its high cost (GM2 and GM4). However, GM2 also pointed out that "it keeps us abreast of market tendencies and the needs of our clients". Although GM5 highlighted that sustainability had become less of a priority due to the COVID-19 pandemic and other more peremptory matters that needed attention, GM1 made clear the need to integrate those concepts into the culture of the hotel. GM3 expressed a somewhat more pessimistic view, making it clear that "neither the hotels in general nor the destination have been able to become sustainable".

In particular, with regard to data management, GM6 indicated that it is of assistance in decision-making to improve hotel occupancy and the average price, although GM5 responded that there is greater data availability than is at times necessary.

4.4. What information would you be willing to share?

Although GM2 qualified the sector as "untransparent" because it is "scared of sharing tools and data", three interviewees were willing to share all information except for financial data (GM1, GM2, and GM3): "Sharing, for example, the name and track-record of a good supplier can help to improve its performance, impacting positively on the group of competitor hotels", affirmed GM2.

In a more specific way, GM4, GM5, and GM6 would share data on occupancy, average prices, commercial areas, and suppliers. GM6, in

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fact, highlighted that the hotel establishment was already sharing data through the Asociación de Hoteles de Sevilla (AHS) [Seville Hotel Association] and the Tourism Board.

5. DISCUSSION

It is surprising that, despite the effort invested in promoting smart tourism in Europe and Spain, it appears that a clear concept of what smart hospitality is has yet to crystallise in the minds of hotel managers, despite their key role in the emergence of smart tourism and the selection of Seville as the 2023 Capital of Smart Tourism. It is equally surprising that at no time did any of the interviewees make mention of UNE norm 178504:2019 "Digital smart hotel connected to smart tourism destination or smart city platforms. Requirements and recommendations".

The general managers of the hotels who were interviewed expressed some of the defining aspects of a smart hotel *(e.g.*, data management and online customer service access), although the lack of a wholistic understanding of the concept was appreciated, as none of them connected the integration of data with the use of technologies to achieve both better (physical and virtual) experiences of customers and greater efficiency in their business operations (Hsu & Tseng, 2022). However, although no lack of consistency in the responses was observed, such as in the case of Leung (2019) with regard to the definition of smart hospitality by key Taiwanese hotel stakeholders, it was indeed noted that their responses only partially encompassed the concept of a smart hotel, which therefore highlights that there is still some way to go until a deeper understanding of the concept and all of its implications is achieved.

In this sense, the renewed efforts to promote smart hospitality in Spain, such as the recent publication of UNE 178504:2022 "Digital smart hotel connected to smart tourism destination or smart city platforms. Requirements and recommendations" (replacing the previously mentioned norm UNE 178504:2019), must be praised. The norm establishes that a smart hotel is "a hotel that meets with the general aspects of tourism that are service, sustainability, and accessibility, and in addition it has the capability to interact with its environment (city and/or tourism destination), using digital technologies and incorporating physical and logical infrastructure with which the integral monitoring of the things and the tourists may be implemented" (p.9) where the requirements are defined with which the hotel must comply.

With regard to the implications of the smart hotel, the responses made it quite clear that the hotel managers were aware above all of its effect on client satisfaction, in line with the results of Leung *et al.* (2019), but are less aware of its effects on the operations of the hotel (*e.g.*, productivity, database use, automation of processes, improvements to communication). Whereas the key Taiwanese hotel stakeholders in the study of Leung (2019) were unanimous with regard to the benefits that the smart hotel could bring with it, not all of the Seville hotel general managers who were interviewed shared the same perception. In fact, no common vision with regard to the importance of digitalisation, data management, and sustainability was observed between the general managers of the hotels, perhaps also due to the lack of deep knowledge of what a smart hotel actually is.

However, the fact that the interviewees were aware of the need to share data and information and were ready to do so must be highlighted as an encouraging and positive result. On that point, no reticence was perceived that could be due to inertia inherited from (individual) management practices (limited to each hotel) prior to the smart era at a mature destination. Given the key role of this interconnection, that is, the creation of spaces in which tourism stakeholders may process and share the information that is gathered, so that collective knowledge may be generated, these results give reason to continue working to turn smart hospitality into a reality. Considering that the levels of interoperability and interconnectivity for most of the core systems in hospitality are to date quite low (O'Connor *et al.*, 2025), the willingness to share data and information is encouraging. However, such optimism must be moderated by the consideration that the willingness that is expressed to share information might be due to a poor understanding of the amount and the type of information that must be provided, as a consequence of the limited understanding of the smart hotel concept.

Finally, it is worth mentioning that, unlike the results obtained by Leung (2019) in which Taiwanese hotel stakeholders identified financial constraints, technological barriers, and employee and managerial reluctancy to adopt modern technologies as obstacles to becoming smart, the interviewees never mentioned any type of barrier to the adoption and the assimilation of smart hotels identified by Stylos *et al.* (2021). In other words, they made no mention of technological immaturity, no mention of financial barriers, nor stakeholder reluctancy, nor governmental limitations, nor norms of any type. Although it is true that they were not directly asked to comment on the obstacles to smart hospitality, if they had been concerned by the matter, the roles that digitalisation, data management, and

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sustainability play might well have been mentioned in some way or other.

6. CONCLUSIONS

In this study, the differing knowledge levels of smart hospitality among practitioners and both governmental entities and academia have been brought to light.

If knowledge of the concept of smart hospitality and its implications is insufficient among hotel managers at a tourism destination where national and European policies favour the incentivisation of not only smart hospitality, but also smart destinations, and smart tourism, then more effort may reasonably be expected at all levels to drive smart hospitality at all destinations. It must be pointed out, however, that it is important not to create false expectations with regard to the advantages that smart hospitality may bring with it, given that not achieving those advantages could entail a level of frustration that might equate with the rejection of smart hospitality.

Buhalis *et al.* (2023) highlighted the need for training to change the mindset with respect to technology and called for urgent training at all levels with a view to helping managers to acquire the necessary skills to draw on all the potential for technological advances applicable to the smart hospitality framework. Being in agreement with them, from a practical point of view, this implies a key preliminary step is considered necessary: the training has, in the first place, to be centred on managers who can learn the concept of smart hospitality properly in all of its aspects, its scope, its implications, and limitations. If this first step is not guaranteed, then all the efforts from different public and private spheres are bound to fail. Moreover, training in the basic aspects of the smart hospitality concept must not be exclusively circumscribed to hotel managers, but must be extended to the whole hospitality ecosystem without whose mutual collaboration, smart hospitality could never be converted into what Buhalis *et al.* (2023) called a "functioning concept" (p. 379).

However important it may be for successful smart hospitality, which fully relies on shared, interoperable, and interconnected systems, to invest in enabling technologies, both management perception and awareness remain the biggest challenge for training and education in the short term (O'Connor, *et al.*, 2025).

6.1. Limitations

This investigation has been centred on the micro-perspective of a concrete type of supplier, which implies a limitation and, in consequence, its results need to be completed by other investigations of the same type at other tourist destinations. On the other hand, although the results of this investigation cannot be generalised, they do manage to cast light on the smart hospitality concept at a key point in the hospitality ecosystem: hotel managers who are, in short, those who have to implement it. Finally, a limitation of this investigation must be underlined, in that only 4-star hotels have fundamentally been incorporated and information on other categories of hotel could be gathered in future investigations.

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