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SUSTAINABLE HOTEL PRACTICES: A COMPARISON BETWEEN HIGHER AND LOWER RANKING HOTELS

Matúš MARCIŠ[a], Diana KVASNOVÁ[a*], Petra STRNÁDOVÁ[b]

[a] Matej Bel University in Banská Bystrica, Faculty of Economics, Department of Tourism. Tajovského 10, 975 90 Banská Bystrica, Slovakia, matus.marcis@umb.sk*, diana.kvasnova@umb.sk
[b] Matej Bel University in Banská Bystrica, Faculty of Economics, Department of Language Communication. Tajovského 10, 975 90 Banská Bystrica, Slovakia, petra.strnadova@umb.sk

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Abstract

The hospitality sector is increasingly recognising the importance of sustainability due to the growing demand for an environmentally and socially conscious tourism market. This article analyses sustainable hotel practices in Slovakia and identifies differences between higher- and lower-ranking hotels. In the summer of 2021, 108 hospitality managers were surveyed to rate the importance of sustainable practices and their company's performance in implementing them. Factor analysis was used to identify relationships among sustainable hotel practices, based on their importance ratings. Based on the importance and performance ratings, a Mann-Whitney U test has been used to compare the differences in the implementation of sustainability practices between higher- and lower-ranking hotels. The study highlights issues that stakeholders should address to support the sustainable development of the hospitality sector. It suggests that higher-ranking hotels have a greater interest in sustainable practices than lower-ranking ones. Furthermore, Slovak hotels only considered sustainable practices as part of their survival strategy during the pandemic. These findings have relevance beyond Slovakia and can inform tourism policy agendas that better justify the importance and benefits of sustainable practices for the hospitality sector.

Keywords: sustainable hotel practices, factor analysis, importance-performance analysis, higher-ranking hotels, lower-ranking hotels, Slovakia

INTRODUCTION

The debate about sustainable practices has become significant for the tourism industry as it is being driven towards implementation of sustainable practices by consumers, regulations, and competition. Booking.com's 2021 Sustainable Travel Report revealed that 81% of travellers plan to stay in sustainable accommodation in the upcoming years. The European Union's Green Deal aims to reduce emissions by at least 55% by 2030, compared to 1990 levels. Within tourism, the role of the hospitality sector, and hotels in particular, is critical for the achievement of these sustainability goals. The key aspect of sustainability is to balance corporate interests with the needs of stakeholders. Thus, organisations must build a productive management relationship with their stakeholders and understand the implications of their

operations in all dimensions of sustainability. In this context, due to the potential negative environmental, cultural, and social impacts of tourism, hotels have a responsibility to act in a sustainable way (Santos, Méxas, Meiriño, Sampaio, & Costa. 2020).

Sustainable tourism has only recently been recognised as important in Central and Eastern European (CEE) countries, as noted by Novacka, Pícha, Navratil, Topaloglu, & Švec (2019) and Scholz, Linderová, & Konečná (2020). The Slovak hospitality sector is under increasing pressure from consumers, the media, and competition to adopt sustainability initiatives. Examples of such efforts include the development of a national strategy for sustainable tourism and the membership of the Slovak Association of Hotels and Restaurants in the International Hotel Environment Initiative. However, the implementation of sustainable practices in the Slovak hospitality sector is still falling behind (Gúčik & Marciš, 2017; Novacka et al., 2019).

The recent pandemic has also presented challenges and opportunities for hotels of all categories to maintain and improve their sustainability efforts (Jones & Comfort, 2020; Elkhwesky, Salem, & Varmus, 2022). Despite the potential for the pandemic to prompt a shift toward more sustainable practices, the reality is that sustainability is still not sufficiently enforced in the practices of tourism businesses (Aksoy et al., 2022; Mohammed, 2022). From a hospitality perspective, both higher- and lower-ranking hotels have faced an unprecedented crisis that has influenced their attitudes toward sustainability. However, only a few studies have directly compared the differences in sustainable practices between hotels of different ranking. These challenges are not unique to the hospitality sector in Slovakia or other Central and Eastern European countries with similar conditions, but also extend to the broader tourism industry. The tourism industry is expected to bounce back after the pandemic, possibly continuing with unsustainable practices (Ioannides and Gyimóthy, 2020). Therefore, it is essential to understand how hospitality managers perceive the importance of sustainable hotel practices and the performance of their companies in implementing them, as this will be crucial in further promoting a sustainable and resilient post-pandemic industry.

Hence, this article aims to analyse sustainable hotel practices and identify differences between higher- and lower- ranking hotels in Slovakia. To achieve this objective, we conducted the following research. First, we took a survey of 108 hotels in Slovakia, where hospitality managers rated the importance of sustainable hotel practices and their implementation in their respective companies. Then we applied factor analysis to identify the components that explain the relationships among sustainable hotel practices based on their importance ratings. Importance performance analysis was used to uncover sustainable

practices that Slovak hoteliers consider important and evaluate their firm performance. Using the importance and performance ratings, we conducted the Mann-Whitney U test to compare the differences in the implementation of sustainability practices between higher- and lower-ranking hotels. In light of the recent pandemic, we sought the input of hospitality managers regarding the impact of Covid-19 on their sustainable hotel practices.

After the introduction, the second section reviews sustainable hotel practices. The third section describes our methodology, including the data collection process, the design of exploratory factor analysis, and the application of IPA. In the fourth section, we present the findings of our study. Finally, the fifth section outlines our conclusions and provides managerial implications based on the results.

THEORETICAL BACKGROUND

Sustainable tourism takes into account economic, social and environmental impacts, with the objective of reducing negative effects and increasing positive ones. It strives to preserve natural resources, protect cultural heritage, and support local communities while providing tourists with a quality experience (UNWTO, 2013). To achieve this, a delicate balance between the needs of tourists, the tourism industry, and the environment and communities impacted by tourism must be maintained (Streimikiene, Svagzdiene, Jasinskas, & Simanavicius, 2020). Furthermore, sustainable tourism emphasises responsible practices such as reducing carbon emissions, conserving water and energy, minimising waste and pollution, and supporting local businesses and communities (Kummitha, 2020).

Tourism has become a strong catalyst for economic development. This is demonstrated on a global scale as, before the pandemic, the tourism industry was responsible for 10% of economically active jobs, 10% of GDP, 28 % of service exports and was the third largest export category in the world after fuels and chemicals, and ahead of automotive products and food (UNWTO, 2020). Despite obvious positive effects of tourism, existing practices result in numerous negative impacts, such as increased consumption of energy, water, and disposable products, increased CO_2 production rates, commoditisation of local culture rather than maintaining its authenticity, and disruption of local economic systems, among others (Santos, Méxas, & Meiriño, 2017).

These negative impacts further highlight the need for managerial and operational challenges in the tourism industry. The hospitality sector is known to place great emphasis on good environmental and social management, compared to other sectors within the tourism

industry (Santos et al., 2017; Elkhwesky, Salem, & Varmus, 2022). This is because sustainability has several benefits for hotels and other hospitality businesses. By implementing sustainable practices, these businesses can reduce their operating costs, improve their efficiency and ultimately, their profitability (Kularatne, Wilson, Månsson, Hoang, & Lee, 2019). In addition to financial benefits, sustainability also has a positive impact on the environment and local communities. By implementing sustainable practices, hotels can minimise waste, conserve natural resources, and reduce their carbon footprint. This helps to foster social responsibility, creating a positive reputation among guests and the local community (Babu, Kaur, & Rajendran, 2018; Raub & Martin-Rios, 2019; Chan, 2021).

Today's travellers are increasingly aware of societal and environmental issues and are looking for sustainable options when travelling. Many consumers now demand that today's hotels develop a higher level of 'green consciousness'. Therefore, it is imperative that hotels apply more sustainable solutions to reduce pollution, increase customer satisfaction, and avoid reputational challenges (Wong, Kim, Lee, & Elliot, 2021). By offering sustainable practices, hotels can attract environmentally conscious customers willing to pay a premium for environmentally friendly services and products (González-Rodríguez, Díaz-Fernández, & Font, 2020; Nelson, Partelow, Stäbler, Graci, & Fujitani, 2021). Furthermore, governments around the world are implementing regulations and policies that aim to promote sustainable practices and reduce carbon emissions (Siakwah, Musavengane, & Leonard, 2020).

The literature on this topic is extensive and researchers focus on best practices related to 'greening' of the hospitality sector (Baker & Mearns, 2017; Kim, Barber, & Kim, 2019). For example, recent studies have explored sustainability innovations (Dias, Costa, Pereira & Santos, 2021), environmentally sustainable policies (Khatter, McGrath, Pyke, White & Lockstone-Binney, 2019) and green human resource management practices (Nisar et al., 2021). Several studies focus on the impact of sustainability certifications on hotel performance (Bianco, Bernard, & Singal, 2023), as well as the impact of hotel star rating on the sustainable hotel performance (Santos, Veiga, Águas, & Santos, 2019; Pereira, Silva, & Dias, 2021).

Santos et al. (2019) and Pereira et al. (2021) have also discussed the relationship between hotel star rating and the implementation of sustainable and environmentally friendly practices. Hotels classified as luxury or upscale ones providing a higher level of service and amenities are typically considered as higher ranked (luxury and first-class hotels). These hotels are usually located in prime locations such as city centres or main resorts and provide guests with a variety of facilities, such as restaurants, bars, fitness centres and spas. With larger budgets

and more resources at their disposal, higher-ranking hotels are more likely to invest in sustainable practices (Santos et al., 2019). They may be using renewable energy sources such as solar panels, invest in LEED certification for their buildings, or apply energy management systems to implement expensive but effective measures. On the other hand, hotels that offer a basic level of service and amenities are considered lower-ranking (standard, economy, and tourists class). These hotels can be smaller, have fewer rooms, and be located in non-prime areas, i.e. rural or peripheral locations. Lower-ranking hotels may have smaller budgets and more limited resources (Pereira et al., 2021). They can focus on simple, low-cost measures like installing low-flow faucets and showerheads, using LED lighting, or implementing a recycling programme. Additionally, they may be more dependent on educating and training employees to promote sustainable practices.

However, only a few studies have specifically compared the differences in sustainable practices between higher and lower-ranking hotels. An exception is the approach taken by Stylos & Vassiliadis (2015), who investigated the perceived importance of sustainability practices and policies in Greek hotels with four and five stars. Their findings indicated that a hotel star rating has a significant impact on the importance attributed to economic measures and socially responsible practices in respective hotels.

The COVID-19 pandemic has brought attention to changes that may be necessary to transition to a more sustainable future in the tourism industry (Jones & Comfort, 2020). An increasing number of authors (Santos et al., 2017; Bianco et al., 2023; McKinsey & Company, 2023) and international organisations (e.g., UNWTO, WTTC, EU) argue that sustainability in the hospitality sector must be the top priority for the next decades. The pandemic has caused that consumers are even more concerned about the environment when making purchasing decisions than before. Therefore, the question remains whether there are notable differences in the importance and performance of sustainable practices between these two categories of hotels considering the new challenges caused by the pandemic.

By adapting to new conditions and finding ways to prioritise sustainability, hotels can help create a more resilient and sustainable future for the tourism industry. These challenges are relevant not only for the Slovak hospitality sector or CEE countries with similar conditions but also for the wider tourism industry, which has been booming again after the pandemic, even with habitual unsustainable practices. Therefore, this article aims to answer the following questions:

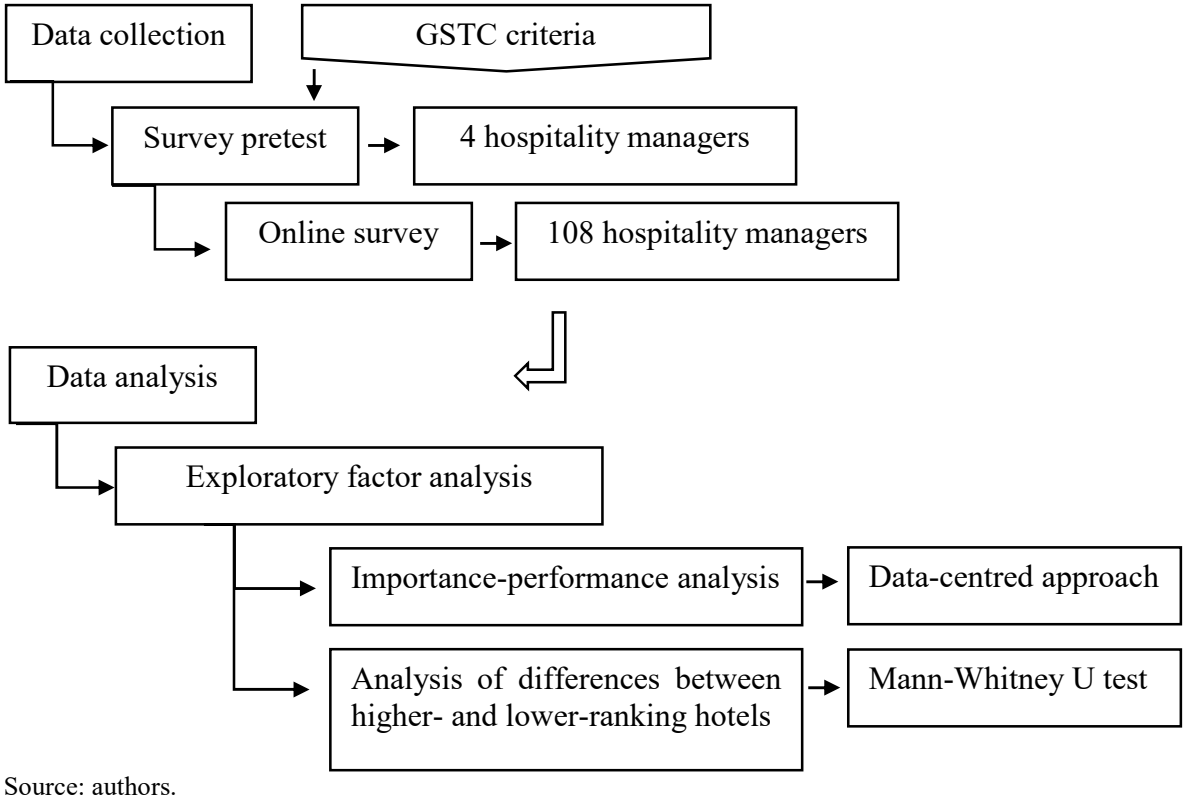
1) How do hospitality managers perceive the importance of sustainable hotel practices and the performance of their companies in implementing them?

2) What are the differences in implementing sustainability practices between higher- and lower-ranking hotels?

DATA AND METHODS

The objective of this article is to examine sustainable hotel practices and to distinguish variances between higher- and lower-ranking hotels in Slovakia. This study focuses on Slovakia, a destination situated in the Central and Eastern European region (CEE). The CEE countries are favoured with an exceptional natural and cultural heritage (Miskolczi, Jászberényi, Munkácsy & Nagy, 2022) but have so far experienced only a moderate number of visitors. The practices of tourism businesses in these countries can offer valuable information about the sustainable development of tourism. Another reason why the researchers chose Slovakia are their physical and personal connections, which guided their focus on local hotels. The research process is illustrated in Figure 1.

Figure 1 Research process



Source: authors.

The first step was identifying a set of sustainable hotel practices. Various frameworks have been proposed to evaluate the implementation of sustainable management in the hospitality sector (see e.g. Santos et al., 2017; Santos et al., 2020), reflecting its varying nature. Worldwide, the Global Sustainable Tourism (GSTC) Industry Criteria for Hotels represents recognised standards that define the minimum requirements for hotels to operate sustainably.

Therefore, a set of sustainable hotel practices was identified for this study based on the GSTC (2016) Industry Criteria. The list of criteria was pretested with four hospitality managers. In an online call, they provided feedback that led to some adjustments and a reduction in the number of attributes. Managers considered the applicability and suitability of the criteria for the hotels in Slovakia. Ultimately, hoteliers made a list of 20 practices that they consider essential for sustainable hotel management, as shown in Table 1.

Table 1 Sustainable hotel practices

Focusing on local purchasing	Encouraging guests to use efficient transport alternatives
Supporting local employment	Offering alternative fuel sources
Offering sustainable (green) tourism products	Minimizing the use of harmful substances
Legal compliance with regulations	Supporting biodiversity conservation and preservation
Guest education and information about sustainable management	Applying environmental management scheme
Performing staff training on sustainable management	Protecting natural and cultural heritage
Providing alternative transport services	Managing energy conservation
Community support activities	Managing water conservation
Monitoring customer satisfaction	Solid waste reduction actions
Offering products and services for visitors with special needs	Applying cost-effective technology

Source: adapted from GSTC, 2016.

The second step of the study involved collecting data from hospitality managers. Between June and September 2021, an online questionnaire was used to collect data from the Slovak hoteliers. According to the Statistical Office of the Slovak Republic (2022), there were 713 hotels, but only 563 publicly available email addresses were found. The sample was chosen based on the hotels´ star rating (higher ranking: four- to five-star or luxury and first-class hotels; lower ranking: one- to three-star or standard, economy and tourists class hotels). The questionnaires addressed to middle and top-level managers were distributed in Slovak and English in two rounds over a four-month period. Due to the pandemic-related restrictions, the return rate of the questionnaires was negatively affected as many tourism businesses were inaccessible. However, after two rounds of email distribution, 108 questionnaires were returned, resulting in a response rate of 19.2%. Pech & Kopova (2022) obtained a similar response rate of 19% in their study that analysed the activities of microbreweries in the Czech Republic during the COVID-19 pandemic.

To test the representativeness of the sample, a chi-square goodness of fit test was performed to examine the relationship between the sample and the population of hotel establishments in Slovakia. The obtained p-value of 0.481 indicates that the sample does not

differ significantly from the population, suggesting that the sample can be considered representative (Pallant, 2007). Table 2 summarises the sample, coverage, and results of the chi-square goodness-of-fit test.

Table 2 Survey sample

Hotel category	No	Sample	Coverage %
Higher-ranking hotels (HR) ▲	209	28	13.40
Lower-ranking hotels (LR) ▼	504	80	15.87
Total	713	108	15.15
Chi-Square .496			
df 1			
Asymp.Sig. .481			

Note: ▲ higher-ranking: four- to five-star (luxury and first class) hotels; ▼ lower-ranking: one- to three-star (standard, economy and tourist class) hotels.

Source: Statistical Office of the Slovak Republic, 2022; authors.

In the survey, hotel managers were asked to assess the significance of 20 sustainable hotel practices using a seven-point Likert scale (ranging from 1 for "not important" to 7 for "very important" in terms of sustainable hotel management). They were also asked to rate their hotel's performance in terms of addressing these practices, using a scale ranging from 1 for "well below the target" to 7 for "well above the target". An open-ended question on how Covid-19 has influenced their sustainable hotel practices was also included in the survey.

In the third step, we used data reduction techniques to identify the underlying structure of the set of 20 practices and to reveal a set of components that could explain the variances between these attributes. We used exploratory factor analysis (EFA) with a varimax method rotation and Kaiser Normalization to analyse the importance ratings of sustainable hotel practices. Factor analysis is a statistical technique used to identify the underlying structure of a set of variables or items (Oguz, Timur, & Seçilmiş, 2021). To perform Exploratory Factor Analysis (EFA), we used the statistical software SPSS 23.

The reliability of the scale is indicated by its Cronbach's Alpha value, which in this case is 0.904. This value is above the minimum expected value of 0.7, indicating high reliability. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, with recommended minimum value of 0.6 (Pallant, 2007; Oguz, Timur, & Seçilmiş, 2021), was 0.902. This suggests that the variables are interrelated and share common factors. In addition, all communalities exceeded 0.72.

In total, six components were identified, which accounted for 80.67% of the variance: component 1 benefits to local development; component 2 energy, water and waste management; component 3 cleaner transportation; component 4 accessible and eco services;

component 5 sustainable tourism offer and component 6 sustainable management system (Table 3).

Table 3 Factor analysis of the importance of sustainable hotel practices

Sustainable hotel practices	**Communalities**	**EV**	**% of variance**	**Factor loading**
Component 1 Benefits to the local development		4.579	22.894	
Local purchasing	.730			.618
Guest education and information	.821			.585
Staff training	.784			.653
Biodiversity conservation and preservation	.782			.591
Community support	.840			.825
Protecting natural and cultural heritage	.870			.835
Local employment	.836			.636
Customer satisfaction	.729			.617
Component 2 Energy, water and waste management		3.575	17.873	
Energy conservation	.864			.841
Water conservation	.855			.800
Solid waste reduction	.787			.716
Cost-effective technology	.732			.725
Component 3 Cleaner transportation		2.798	13.991	
Providing alternative transport services	.767			.608
Encouraging guests to use efficient transport alternatives	.867			.834
Alternative fuel sources	.834			.834
Component 4 Accessible and eco services		2.177	10.883	
Use harmful substances	.721			.556
Products and services for visitors with special needs	.871			.830
Component 5 Sustainable tourism offer		1.503	7.516	
Sustainable tourism products	.826			.701
Component 6 Sustainable management system		1.503	7.514	
Environmental management scheme	.797			.514
Legal compliance	.821			.789
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.902; Bartlett's Test of Sphericity = 1,809.528; sig. = 0.000; df = 190.				

Source: authors.

In the fourth step, the results of the EFA components were used to guide the construction of the importance performance analysis. Importance-Performance Analysis (IPA) was introduced by Martilla & James (1977) to assess the management performance of specific attributes. This involves creating a two-dimensional grid with mean importance and mean performance on the vertical and horizontal axes, respectively (Oh, 2001). The plot is then divided into four quadrants using crosshairs (Chen, 2014). Martilla & James (1977) interpreted the four quadrants as follows: Quadrant (I) represents attributes that are of high

importance and high performance (Keep Up the Good Work); Quadrant (II) represents attributes of low importance and high performance (Possible Overkill); Quadrant (III) represents attributes of low importance and low performance (Low Priority); and Quadrant (IV) represents attributes of high importance and low performance (Concentrate Here).

IPA is a tool that (visually) highlights the gaps between stakeholders' perception of the importance of a specific attribute and a business's actual or perceived performance in managing that attribute. One of the significant issues in IPA is determining the best cut-off points for classifying performance and importance scores, as different classifications lead to different recommendations. Thresholds can be data-cantered, scale-cantered, or subjectively determined. Martilla & James (1977) suggested placing the cross-hairs of the IPA grid at the actual mean values of the observed importance and performance ratings. However, the controversy about crosshair placement and measurement bias remains. Therefore, selecting the optimal cut-off points for classifying performance and importance scores is still a significant challenge. In this research, we have used the data-centred approach, which is adopted by most researchers (Chen, 2014; Oh, 2001). Appendix A presents the mean scores and standard deviations of importance and performance of selected sustainable hotel practices.

In the last, fifth, step, the importance and performance ratings were analysed using the Mann-Whitney U test to compare the differences between two independent groups of hotels. The Mann-Whitney U test, also known as the Wilcoxon rank sum test, is a nonparametric test used to compare the differences between two independent groups. This test requires meeting certain assumptions, such as having ordinal dependent variables (e.g., from a seven-point Likert scale), an independent variable consisting of two categorical, independent groups, and no relationship between observations within each group or between the groups themselves (Pallant, 2007). We performed the Mann-Whitney U test using statistical software SPSS 23. The mean ranks of sustainable hotel practices are presented in Appendix B.

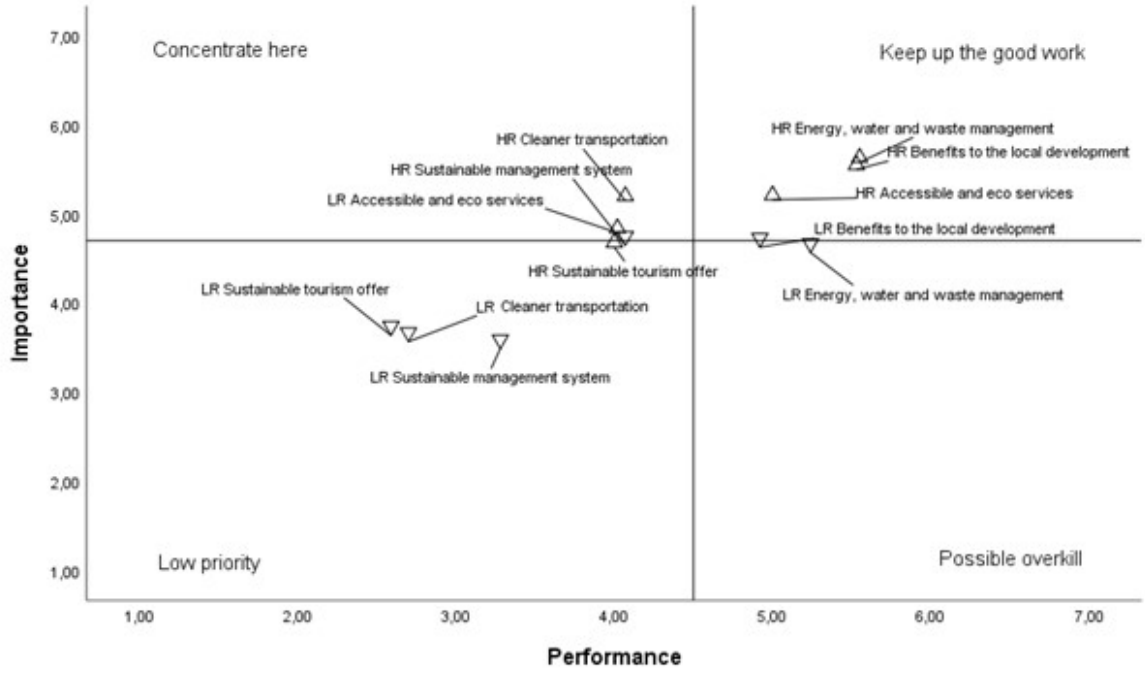
RESULTS AND DISCUSSION

The study found differences between the perceptions of the managers of luxury and first-class hotels (four and five stars) and the managers of lower-ranking hotels regarding the importance of sustainable practices. Specifically, according to the managers' viewpoints, energy, water and waste management practices were evaluated as the most important component for higher-ranking hotels, while accessible and eco-services were identified as the most important

components for lower-ranking hotels. On the other hand, the study also revealed that the established sustainable management system was perceived as the least important component by managers of lower-ranking hotels. In particular, the biggest gaps (importance – performance) were identified in cleaner transportation for higher-ranking hotels and sustainable tourism offer for lower-ranking hotels.

To determine the crosshair of the IPA grid, we used the actual mean values of the observed importance (4.70) and performance ratings (4.50), following the data-centred approach. The IPA grid shows that the sustainable practices the hotels should maintain or continuously improve are located in the 'Keep up the good work' quadrant (Figure 2).

Figure 2 Importance-performance analysis of sustainable hotel practices in Slovakia



Note: HR: ▲Higher-ranking hotels (luxury and fist class); ▼LR: Lower-ranking hotels (standard, economy and tourist class).

Source: authors.

The hoteliers in charge of luxury and first-class hotels rated their performance in energy, water and waste management, the benefits to local development, and the accessibility and eco-services as quite good. Similarly, hoteliers of lower-ranking hotels acknowledged the importance of benefits to local development as an integral part of sustainable management, which they have been practicing to some extent. In particular, the highest rated performance is observed in customer satisfaction and energy conservation. Slovak hoteliers understand the importance of benefits for local development as essential attributes of sustainable tourism.

These practices were deemed important by hoteliers and their hotels performed well in these areas. Therefore, tourism policymakers should maintain and support this status quo, encouraging hoteliers to continue their good performance in these areas.

The "Concentrate Here" quadrant identifies sustainable hotel practices that are considered highly important but have low relative performance. This quadrant highlights practices that require strategic support. Although hoteliers consider these practices an essential component of sustainable hotel management, hotels appear to lack the ability to implement them. Managers of higher-ranking hotels believe that they should focus on improving cleaner (eco) transportation options for guests and implementing an effective sustainable management system. However, managers of lower-ranking hotels see the need to improve accessible services and minimise the use of harmful substances. These measures may not necessarily require significant financial investments, making them more appealing to hotels of lower categories.

The quadrant labelled "Possible overkill" includes sustainable hotel practices that are highly performed but are perceived as less important. This quadrant suggests that efforts and resources directed at these practices may not result in significant impacts (Azzopardi & Nash, 2013). It is concerning that lower-ranking hotels perceive energy, water, and waste management practices as less important. On closer examination, lower-ranking hotel managers rated water conservation and solid waste reduction as less important practices. According to data from the Statistical Office of the Slovak Republic (2022), the production of waste from the hospitality sector increased by 9.38% from 2009 to 2018 (reaching 11,836 tones in 2018). Smaller hotels often face barriers such as a lack of resources and the burden of ongoing maintenance costs when implementing environmental practices (Khatter et al., 2019; Trišić et al., 2021). As a result, it is necessary to provide a better justification for the importance and benefits of environmental practices for hotels.

The "low priority" quadrant includes sustainable tourism practices that both groups of hotels consider to be of low importance and low performance. Most of these practices were included by hotels of lower categories. Specifically, hoteliers in lower-ranking hotels rated alternative transportation services and sustainable management systems as practices of relatively low importance and poor performance. Hoteliers associate these practices with higher costs and do not attach much importance to them. According to the IPA technique, such practices should have low priority in terms of resource allocation. However, despite the low importance attributed to sustainable tourism products, there is a growing awareness among consumers of sustainable practices in hotels. Booking.com (2021) reported that customers have growing expectations for a sustainable tourism offer that should not be overlooked.

To compare the differences between two independent groups of hotels, we performed the nonparametric Mann-Whitney U test. The test results showed significant differences between hotels of higher and lower rank in terms of the importance of cleaner transportation ($p < 0.05$, two-tailed) (see Table 4 for more details).

Table 4 Differences between higher- and lower-ranking hotels

Sustainable hotel practices	Mann-Whitney U Test (*p-value*)	
	Importance	Performance
Component 1 Benefits to the local development	**912.0 (.145)**	
Local purchasing	873.5 (.073)	1,056.5 (.648)
Guest education and information	919.0 (.147)	844.0 (.050)
Staff training	936.0 (.185)	1,024.5 (.492)
Biodiversity conservation and preservation	1,030.0 (.514)	883.0 (.090)
Community support	885.5 (.091)	890.5 (.102)
Protecting natural and cultural heritage	946.5 (.209)	1,107.5 (.928)
Local employment	797.0 (.021)	988.0 (.344)
Customer satisfaction	1,102.0 (.894)	1,070.5 (.696)
Component 2 Energy, water and waste management	**914.0 (.149)**	
Energy conservation	895.5 (.103)	1,106.0 (.917)
Water conservation	768.5 (.012)	1,078.5 (.766)
Solid waste reduction	838.5 (.040)	1,042.0 (.562)
Cost-effective technology	856.0 (.057)	1,072.0 (.731)
Component 3 Cleaner transportation	**718.0 (.005)**	
Providing alternative transport services	736.5 (.006)	937.5 (.190)
Encouraging guests to use efficient transport alternatives	742.0 (.007)	832.0 (.028)
Alternative fuel sources	800.0 (.022)	719.5 (.002)
Component 4 Accessible and eco services	**1,024.0 (.501)**	
Use harmful substances	986.0 (.334)	925.5 (.167)
Products and services for visitors with special needs	1,034.0 (.539)	911.5 (.139)
Component 5 Sustainable tourism offer	**1,004.0 (.416)**	
Sustainable tourism products	900.0 (.116)	852.5 (.050)
Component 6 Sustainable management system	**990.0 (.362)**	
Environmental management scheme	689.5 (.002)	752.0 (.005)
Legal compliance	1,004.5 (.408)	1,102.5 (.900)

at a 95% confidence level.
Source: authors.

In summary, first-class and luxury hotel managers consider all aspects of sustainable management to be more important than lower-ranking hotel managers, except for accessible and eco-friendly services. While higher-ranking hotels acknowledge the importance of cleaner transportation, they have a lower performance in this area. On the contrary, lower-ranking hotels place less importance on cleaner transportation, such as practising alternative transport services for guests and encouraging the use of efficient transport alternatives. There are also significant differences between the two groups in the importance of local employment, water

conservation, and environmental management schemes. Managers of higher-ranking hotels view these practices as more crucial than managers of lower-ranking hotels. Additionally, significant performance differences were found in guest education, encouragement of alternative transportation options, offering alternative fuel sources, sustainable tourism products, and the application of environmental management schemes. These practices are perceived by hoteliers from higher category hotels as better implemented.

On 6 March 2020, Slovakia reported its first confirmed case of COVID-19, which triggered a series of restrictions to contain the virus. The pandemic has significantly affected the hospitality sector, including sustainable hotel practices. Although hotels were completely closed for several weeks, they had to implement new health and safety protocols, such as enhanced cleaning and disinfection measures, reduced occupancy levels, and social distancing guidelines, to comply with the new regulations. Hoteliers revealed that these measures resulted in changes in hotel operations and guest experiences, as one respondent said for all: '*Safety and financial concerns taking priority over sustainability*'.

The frequent changes in the COVID-19 regulations, coupled with unclear government information and limited preparation time, had a considerable impact on hotel operations. Hotels, both of higher and lower ranking, were forced to reduce their workforce. However, not all the employees lost their jobs. Some hotels allowed their employees to temporarily change their workplace, such as in the food industry, supermarkets, and other services (which was not legal before). The government launched subsidy programmes, including the De Minimis scheme, to support tourism businesses impacted by the pandemic. The most commonly offered form of assistance was wage support to employees. However, the hoteliers surveyed confirmed that the aid arrived too late or was insufficient. During the COVID-19 pandemic, three hotels also took advantage of the opportunity to train their employees and recommend the online educational programme ECO TANDEM. In the first half of 2021, Slovak tourism businesses were able to participate in the ECO TANDEM online educational programme, which focused specifically on the principles of sustainability and circular economy in the tourism industry.

Based on the open responses of the hoteliers, it can be concluded that the Slovak hotels saw sustainable practices during the pandemic as part of their "survival" strategy. This strategy involved reducing operating costs, maintaining employment, complying with changing regulations, ensuring safe access for guests, and mutual support from local businesses.

CONCLUSIONS

Sustainability aims for long-term effects, taking into account ethical, social, environmental and economic dimensions. The importance of sustainability as a key driver of success in the hospitality sector has been widely acknowledged (Ertuna, Karatas-Ozkan, & Yamak, 2019). It is evident that hotel businesses must be more attentive to these discussions by proposing an inclusion of sustainable practices in managerial and operation strategies, observing: the interests of employees (e.g., social benefits and volunteering), customers (physical accessibility, healthy commercial offer, etc.), suppliers (e.g., Code of Conduct and responsible purchasing) and so on. Similarly, companies will also have to design the best environmental and economic practices according to the specific concerns of each of their stakeholders (Santos et al., 2017).

The results of the study indicate that first-class luxury hotels show a greater commitment to sustainable management practices. This is consistent with previous research by Chan (2011) and Stylos & Vassiliadis (2015), who found that higher-tier hotels place more importance on and implement sustainable practices more effectively. Both the top and the lowest ranked hotels recognise the importance of local development and perform well in this area. However, sustainable tourism offerings are not a priority, and lower-ranking hotels place less importance on energy, water, and waste management. In particular, there is a significant difference in the importance placed on cleaner transportation by hotels. What is more, Slovak hotels viewed sustainable practices during the pandemic as a supplement to their survival strategy, including cost reduction, maintaining employment, complying with regulations, ensuring guest safety and supporting local businesses.

Sustainable hotel practices in Slovakia have received limited research attention. While Jarossová & Knošková (2018) focused on pro-ecological activities and the views of hotel employees and consumers, Novacka et al. (2019) examined environmental practices and differences between hotels in CEE countries. These studies indicate that the Slovak hospitality sector is increasingly prioritising sustainability concerns. However, policy makers and other stakeholders lack proper recommendations that are informed by the perspectives of hoteliers. Consequently, it is unclear which sustainable practices hospitality managers consider essential and implement.

The results of the study are applicable not only to Slovakia or CEE countries but also to the sustainable development of the hospitality sector worldwide. Policymakers must prioritise supporting initiatives and policies that improve hotel performance in areas that hospitality managers consider important, but currently show low performance. If a tourist destination

aims to implement sustainability, all businesses in the tourism sector must work together to support this goal. Eliminating barriers that prevent the implementation of sustainable practices and promoting effective initiatives can motivate hospitality managers to adopt more sustainable management practices.

To improve sustainability practices in hotels, managers of higher-ranking hotels should prioritize cleaner transportation options and effective sustainable management systems, while lower-ranking hotels should focus on accessible services and the reduction of harmful substances. Both categories should also educate guests about their sustainable practices. Additionally, hotels of all ranks should maintain their strengths in energy conservation, waste management, and local development to align with the growing consumer demand for sustainable tourism.

Research has several limitations that must be acknowledged. First, there are no established guidelines for developing a set of attributes to be used in Importance Performance Analysis (IPA). Another limitation is the use of a data-centric approach to determine the IPA matrix. Different discriminating criteria could lead to different results, and a modified version of the IPA analysis may provide a more comprehensive demonstration of its application. Additionally, there is no consensus on what constitutes sustainable hotel practices. Although the list of practices used in this study could have been expanded, doing so could have made the survey too complex and difficult for hospitality managers to complete. It is important to remember that more does not always mean better, and especially in the case of sustainability, simpler and easier-to-apply measures are often more appropriate than complex and demanding systems.

Future research in this field could expand its scope by including additional sustainable hotel practices and other relevant factors, such as chain affiliation, location, and hotel specialization. Furthermore, more comprehensive and in-depth research techniques, such as qualitative, field, and longitudinal or experimental design research, could be used to enrich this topic. The hotel sector faces current challenges, such as high prices, expensive energy, and geopolitical issues that require further research on sustainability. Post-pandemic research could assess how COVID-19 reshaped sustainability priorities and identify practices that balance sustainability with the resilience of tourism businesses. In addition, researchers should examine the role of cost-effective technologies in overcoming resource limitations, especially in lower-ranking hotels.

In conclusion, this study supports the notion that higher-ranking hotels demonstrate greater interest in sustainable hotel practices. Although the study findings cannot be generalised, they contribute to the ongoing discussion of sustainability in the hospitality sector by highlighting

the importance and performance of sustainable hotel practices for both lower and higher-ranking hotels in practice.

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Appendix A Mean ratings of sustainable hotel practices

Sustainable hotel practices	Lower-ranking hotels ▼				Higher-ranking hotels ▲			
	Importance		Performance		Importance		Performance	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Component 1 Benefits to the local development	**4.73**	2.13	**4.92**	1.93	**5.55**	1.94	**5.53**	**1.66**
Local purchasing	4.70	2.12	5.01	1.82	5.79	1.87	5.86	1.33
Guest education and informing	4.36	2.29	4.13	1.91	5.29	2.26	5.29	1.82
Staff training	4.46	2.23	4.98	2.10	5.39	2.23	5.21	1.83
Biodiversity conservation and preservation	5.13	1.96	4.83	1.93	5.61	1.77	5.61	1.71
Community support	4.81	1.94	4.51	1.84	5.64	1.87	5.36	1.47
Protecting natural and cultural heritage	5.01	1.97	5.06	1.73	5.54	1.77	5.29	1.63
Local employment	4.21	2.17	4.70	2.10	5.43	2.03	5.32	2.06
Customer satisfaction	5.13	2.20	6.18	1.25	5.71	1.88	6.32	1.16
Component 2 Energy, water and waste management	**4.67**	2.08	**5.24**	1.83	**5.63**	2.02	**5.55**	1.82
Energy conservation	4.85	2.09	5.83	1.41	5.61	1.93	6.00	1.52
Water conservation	4.51	1.98	4.94	1.79	5.50	2.13	5.32	1.85
Solid waste reduction	4.60	2.21	5.68	1.69	5.75	2.12	5.68	1.94
Efficient building and infrastructure	4.73	2.05	4.54	2.08	5.68	2.00	5.21	1.91
Component 3 Cleaner transportation	**3.67**	2.11	**2.70**	2.10	**5.20**	2.16	**4.07**	2.59
Providing alternative transport services	4.15	2.07	3.94	2.34	5.50	2.03	4.82	2.44
Rewarding guests for using alternative transport options	3.40	2.00	2.21	1.78	5.07	2.11	3.64	2.47
Alternative fuel sources	3.46	2.20	1.95	1.52	5.04	2.38	3.75	2.78
Component 4 Accessible and eco services	**4.84**	1.86	**4.02**	1.91	**5.21**	2.24	**5.00**	1.94
Use harmful substances	5.13	1.74	4.20	1.79	5.54	2.10	5.29	1.84
Products and services for visitors with special needs	4.56	1.95	3.84	2.02	4.89	2.36	4.71	2.02
Component 5 Sustainable tourism offer	**3.74**	2.21	**2.59**	1.99	**4.68**	2.48	**4.00**	2.21
Sustainable tourism products	3.74	2.21	2.59	1.99	4.68	2.48	4.00	2.21
Component 6 Sustainable management system	**3.59**	2.18	**3.28**	2.33	**4.75**	2.35	**4.07**	2.42
Environmental management scheme	3.49	1.95	1.91	1.42	5.14	2.27	3.93	2.51
Legal compliance	3.70	2.39	4.65	2.25	4.36	2.39	4.21	2.36

on a seven-point Likert scale importance ranging from 1 for "not important" to 7 for "very important" for hotel sustainable management; performance ranging from 1 for "well below the target" to 7 for "well above the target" for hotel sustainability performance.

Appendix B Mean ranks of sustainable hotel practices

Sustainable hotel practices	Lower-ranking hotels ▼		Higher-ranking hotels ▲	
	Importance	Performance	Importance	Performance
Component 1 Benefits to the local development	**51.90**		**61.93**	
Local purchasing	51.42	53.71	63.30	56.77
Guest education and informing	51.99	51.05	61.68	64.34
Staff training	52.20	55.69	61.07	51.09
Biodiversity conservation and preservation	53.38	51.54	57.71	62.96
Community support	51.57	51.63	62.88	62.70
Protecting natural and cultural heritage	52.33	54.34	60.70	54.95
Local employment	50.46	52.85	66.04	59.21
Customer satisfaction	54.28	53.88	55.14	56.27
Component 2 Energy, water and waste management	**51.93**		**61.86**	
Energy conservation	51.69	54.68	62.52	54.00
Water conservation	50.11	53.98	67.05	55.98
Solid waste reduction	50.98	55.48	64.55	51.71
Efficient building and infrastructure	51.20	53.90	63.93	56.21
Component 3 Cleaner transportation	**49.48**		**68.86**	
Providing alternative transport services	49.71	52.22	68.20	61.02
Rewarding guests for using alternative transport options	49.78	50.90	68.00	64.79
Alternative fuel sources	50.50	49.49	65.93	68.80
Component 4 Accessible and eco services	**55.70**		**51.07**	
Use harmful substances	52.83	52.07	59.29	61.45
Products and services for visitors with special needs	53.43	51.89	57.57	61.95
Component 5 Sustainable tourism offer	**53.05**		**58.64**	
Sustainable tourism products	51.75	51.16	62.36	64.05
Component 6 Sustainable management system	**52.88**		**59.14**	
Environmental management scheme	49.12	49.90	69.88	67.64
Legal compliance	53.06	54.72	58.63	53.88