

## Sustainable Tourism in Hungary - Where the travellers expectations and providers interests meet

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### Abstract

Tourism is the third largest industry in the world, with annual turnover of 1.4 trillion dollars, accounts for 10 percent of the entire world's GDP. One out of every ten jobs is connected to tourism, and tourism is also responsible for five percent of the world's carbon dioxide emissions, of which hotels and other types of accommodation account for one percent. In recent years, the issue of environmental protection measures to be implemented by hotels has become more and more important, which has an increasing impact on customer decisions.

Our study examines the possible aspects of sustainable tourism from two sides. Our questionnaire research is based on a survey of consumer habits. We searched for answers to questions that help determine the travel habits of different social groups, as well as the extent of their commitment to sustainability. Our research also covers whether there is a connection between an individual's everyday environmental decisions and travel habits. On the other hand, we followed the transformation of a hotel located in the downtown of a small Hungarian rural town, where they are trying to reduce their energy consumption with solar panels, heat pumps and many other smart solutions, such a way that the guest's sense of comfort should decrease as little as possible. The aim of the study is to find the common points where the interest of the service provider and the expectations of the consumer meet.

**Keywords:** sustainable, tourism, accomodation, hospitality

### Introduction

In recent years, environmental protection and sustainability have been increasingly emphasized in all areas of the economy. There are currently around 800 million people working in tourism and hospitality around the world, so it's no wonder that many people are interested in this topic, which can be explored in many aspects. Hotels and other service providers, as well as those involved in tourism or those who want to relax, are responsible for reducing consumption. In their daily lives, individuals have a number of habits that are ingrained in their patterns of behaviour, thus influencing their everyday actions and decisions, including those during travel. Sustainable travel habits, while not solving climate change, are not only in our own interest, but also in the interests of future generations. Where is this process now? Are travelers willing to give up comfort to save our planet? Can we say that the environmental awareness campaign, which has been going on for a decade now, has achieved its first successes? Our study also seeks to answer this question. In our research, we tried to assess travellers' habits at home and during their stay in a hotel and compare their needs with the ideas of the owners of an environmentally conscious hotel that has recently undergone a complete renovation.

### Theoretical overview

The tourism industry is an industry producing 10% of the world's GDP. Thus, it has a significant impact on the environment, the economy and, consequently, a significant impact on society. In recent years, there has been an increasing willingness among the managers of the companies concerned to develop and implement various sustainability strategies (Jones, P. et al., 2017). At the same time, environmental awareness is also increasing on the consumer side. In tourism and, if included, hospitality, the majority of sustainability decisions are related to some kind of consumption reduction measure. (Frans Melissen et al., 2016), which, although often involve renunciations, have significant perceived or real social benefits. Close cooperation between consumers and service providers, exchange of views and experiences, which can restructure the market in the short and long term, is extremely important in the sector (Csapody Bence et al., 2020).

Among the UN Sustainable Development Goals (*THE 17 GOALS | Sustainable Development*, 2015) SDG 12 is the most important, encompassing all efforts to develop sustainable consumption and production methods and more efficient use of resources. SDG 17 emphasizes the importance of

partnership, as local producers and local service providers bring together shorter supply chains and reduce environmental impact. With the passing of COVID, these trends intensified as the complete closure of the sector brought together people living in the same geographical area, strengthening economic and emotional ties between them (Alsetoohy, O. et al., 2021).

Although there are initiatives to green the Hungarian hotel industry (Magyar Szállodák és Éttermek szövetsége, 2023), at the same time, sustainability is not a condition for obtaining stars in the hotel rating system, even at the highest level (Magyar Turisztikai Minőségtanúsító Egyesület, 2023). Hotel owners are the main drivers of the strengthening of environmental aspects, who have a dual interest: reducing energy consumption and gaining a competitive advantage over other market players. Travel decisions begin with determining your destination, as well as choosing your mode of travel and accommodation (Seddighi, H. R. & Theocharous, A. L., 2002). The tourist experience can best be described as the sum total of experiences and experiences from the decision to travel until the arrival home (Cutler, S. Q. & Carmichael, B. A., 2010).

Another popular topic today is the circular economy. The idea of circular business models has been in the spotlight in recent years. Circular companies are gaining increasing recognition in the eyes of consumers; Customers prefer products from organizations based on the circular economy model. The circular economy refers to an economic model based on, among other things, sharing, leasing, reusing, repairing, renovating and recycling in an (almost) closed loop (Bourguignon, D., 2016). Circular tourism aims to produce products and services that are created, sold and consumed with attention to reducing environmental impacts (Naydenov, K., 2018). However, it is also essential to encourage a change in attitudes among tourists and staff. The structure of the tourism industry is currently based on the linear economic model. Mass tourism continues to require high-capacity facilities in which the production of services serving tourists results in significant resource consumption.

The significant environmental impact of tourism can be attributed to the following factors:

- this sector is responsible for 8% of global CO<sub>2</sub> emissions (Lenzen, M. és mtsai., 2018),
- uses a large number of products that are often transported and packaged;
- tourist facilities require significant amounts of energy and raw materials;
- tourist facilities require an extra amount of water (direct water use varies from 80 to 2000 liters per day per tourist);
- airlines are the biggest contributor to global warming among tourism players

A 2021 survey showed that the sustainability factors that most influence guests' intention to return are the hotel's garbage and energy management, but surprisingly, saving water doesn't play a decision-making role when it comes to rebooking (Arunappriya & Dahanayake, 2021), A study by Ponnappureddy, Priskin, Ohnmacht, Vinzenz and Wirth (2017). It surveyed 1,056 U.S. travelers on how knowing what environmental measures the selected hotel takes affects the perception of a hotel. The research found that those who were already more receptive to the topic of sustainability are doing something about environmental change in their private lives, and those who are fundamentally skeptical about the given accommodation have developed a much more favorable image than those who are fundamentally skeptical about the topic. The study therefore concluded that sustainability efforts in hotels can only change consumers' choices for the better if they themselves prioritise environmental protection. However, it does matter in which countries these studies are conducted;. According to a survey conducted by the U.S. Tourism Agency, 78% of U.S. travelers consider themselves environmentally conscious, and 95% of respondents said hotels do need to care about sustainability. At the same time, the study shows that travellers expect sustainability measures, but are not willing to pay more for them (Pulido- Fernandez & López-Sanchez, 2016).

Sustainability measures can be introduced not only during operation, but also during construction. There are many architectural solutions that make it easier to meet sustainability goals later on (Abokhamis Mousavi, 2018). These may include, for example, a well-designed rainwater drainage and air exchange system or the use of various alternative energy sources (Baldzhy & Yaslynska, 2022). Obviously, those hotels built earlier will still have traditional energy-saving methods, the most tangible elements of which are replacing light bulbs with economical ones, equipping light switches with motion sensors, installing solar panels or wind turbines, installing windows with triple-layer glass or reflective glass, or equipping rooms with digital thermostats that can be controlled from the reception (Hassan Abdou & Said Seheta, 2022).

## Research methodology

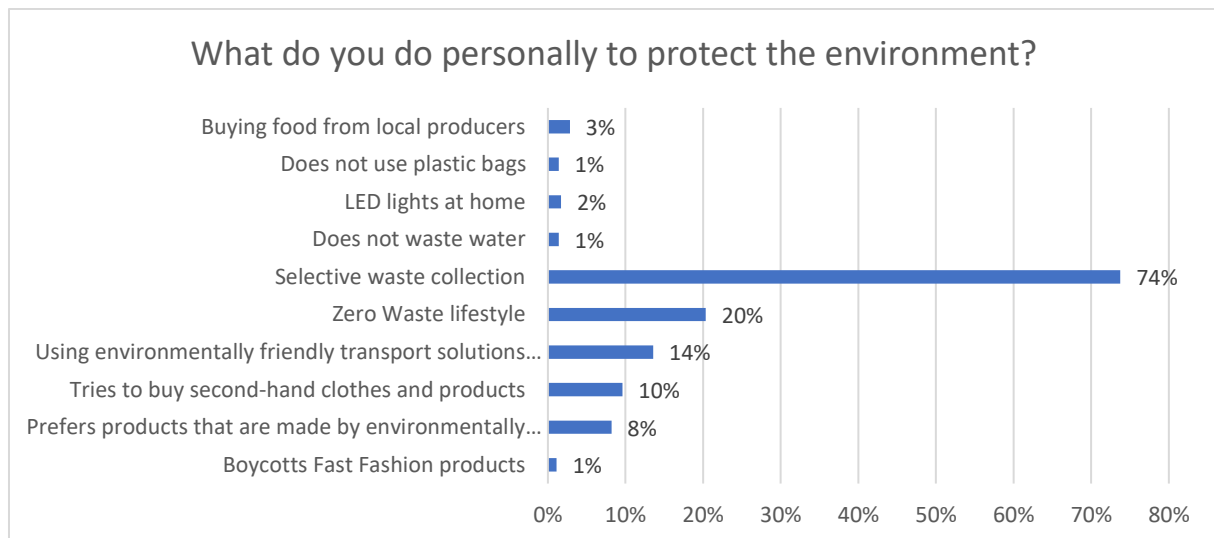
In the first part of our research, we asked 353 travellers online and in person about their travel habits. The questionnaire focused on environmental awareness and attitude towards sustainability. The questionnaire consisted of three parts. In the first part, the respondents talked about their own home habits from the aspect of sustainability, and in the second part, we researched how much environmental protection and sustainability play a role in their decisions during their travels. In the third part, we asked about their expectations for an environmentally conscious hotel.

The interesting thing about the research is that we contrasted our experiences gained during the questionnaire with our practical experiences. For almost a year, we watched the transformation of a hotel located in a medium-sized city in Hungary. The owners of the hotel completely transformed the 40-year-old building, which used to function as a \*\*\* low budget hotel. A solar panel system was installed on the roof of the building, and several smart solutions were used during the mechanical engineering, such as an air conditioning system controlled from the reception or the use of smart sockets, which are connected to the reservation system, so that unused rooms can be completely de-energized. After the renovation, almost all consumption data can be measured, so we obtained valuable data, which allowed us to compare the results of the questionnaires with those experienced in reality. The interesting thing about the research is that we contrasted our experiences gained during the questionnaire with our practical experiences.

## Results of the questionnaire research

74% of respondents cited selective waste collection as a personal action plan, while 20% said they try to maintain a Zero Waste lifestyle. The third highest number of responses came from conscious choice of means of transport, while surprisingly few responded that they buy from local producers, thus shortening the journey of food, and even fewer responded that they are banishing single-use plastics or fast fashion clothes from their lives. Although there have been and are many campaigns to reduce the energy consumption of the population, 2% of respondents use LED bulbs, and even fewer, only 1%, care about protecting water resources and eliminating water waste.

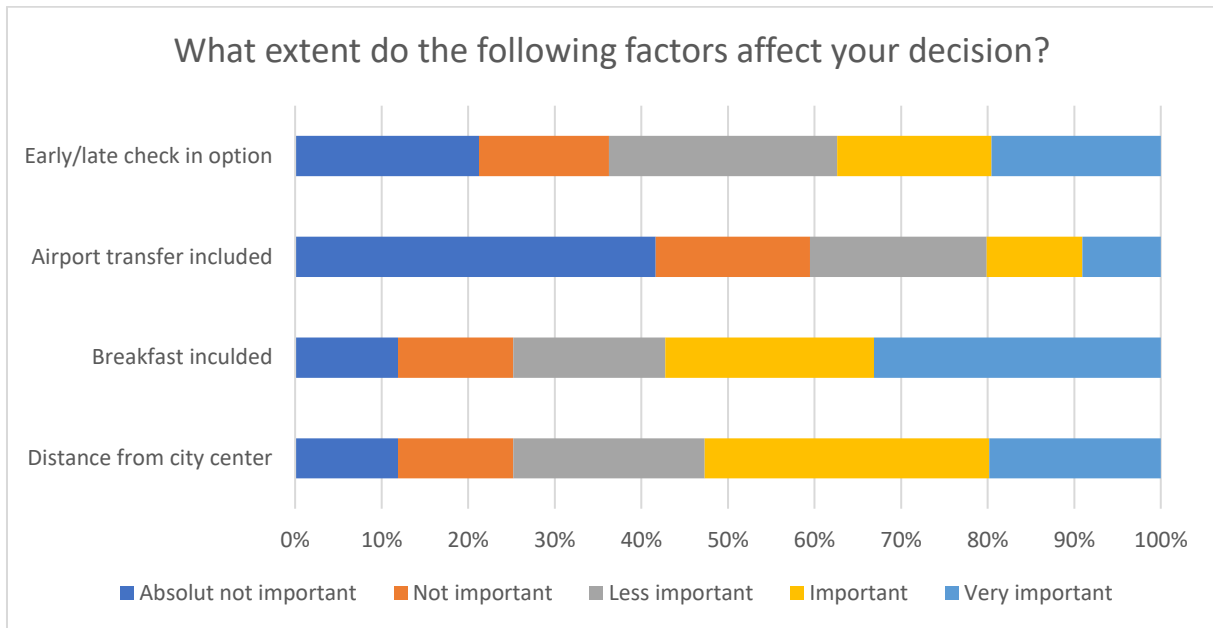
Figure 1. Questionnaire results



Source: own work

The factors influencing individuals' choice of accommodation are shown in the figure below. The least important consideration when choosing an accommodation is whether the hotel offers airport transfer. In today's world, travellers have many transport alternatives to choose from, and airports are striving to build the best infrastructure that can best serve travellers. On the other hand, the most important aspect when choosing accommodation is that breakfast is included in the price. Most travelers don't like to look for a café or breakfast place in the morning, they prefer to be able to do everything inside their accommodation after waking up. The second most important aspect is the distance of the hotel from the city center. Of course, larger cities can have several centers (historical, business), but we asked tourists, whose main goal is to get to know the given destination as much as possible, so they do not like to waste time traveling to the sights during their stay.

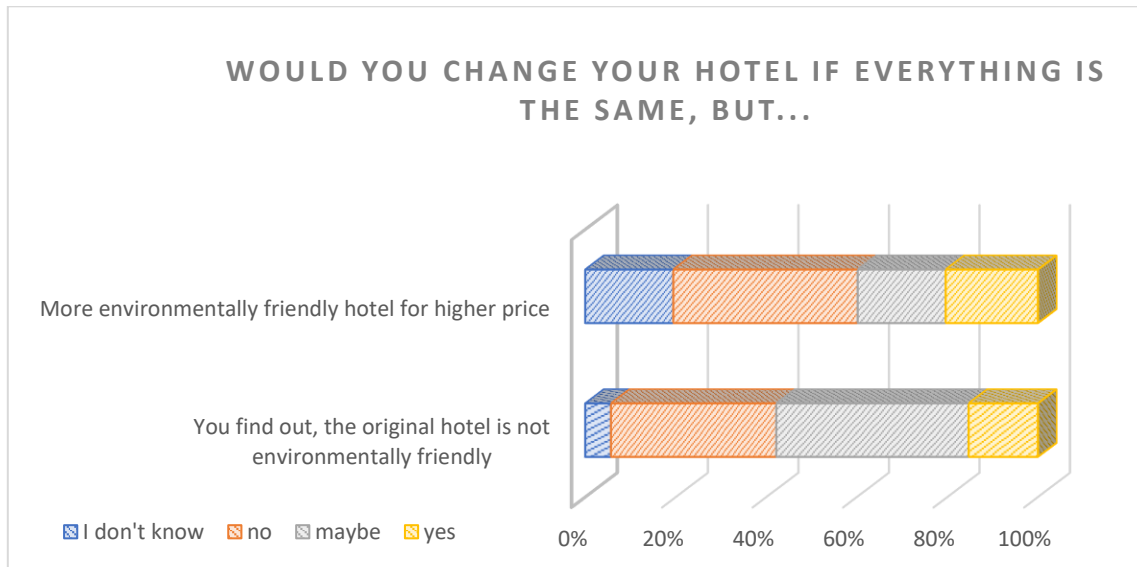
Figure 2. Questionnaire result



Source: own work

We also wanted to know if respondents are willing to change their travel decision if they notice an alternative (price, location, breakfast, etc.) that is completely identical to the original hotel choice, which is also environmentally conscious. The answers show that the majority of people would not change their original decision based on non-environmental considerations, and they are not willing to pay more for it at all.

Figure 3.: Questionnaire results



Source: own work

### Individuals' expectations of green hotels

As with individual answers, most respondents indicated selective waste collection as their highest expectation for a Green Hotel, followed by reducing the amount of food waste and the use of LED bulbs, which may be interesting because a small number of respondents previously indicated this as their individual measure. The electric car charging station and the quality of the equipment are the least important requirements for a service provider that calls itself environmentally conscious

accommodation. Hotels use a number of chemicals in their operations, which cause a serious environmental impact, but this is not important for travellers.

Figure 4.: Questionnaire results



Source: own work

We can do something to protect our environment not only during the choice of the hotel, but also during the stay. As with individual decisions, selective waste collection is what most people think about in the first place during their hotel stay. Although the unnecessary use of cleaning products was not mentioned in connection with green hotels, the second most popular answer to this question was not to clean the room unnecessarily. These are followed by reducing energy consumption, avoiding food waste and preferring a paperless booking process. According to respondents, the least attractive sustainability measure is the use of public transport modes.

Figure 5.: Questionnaire results



Source: own work

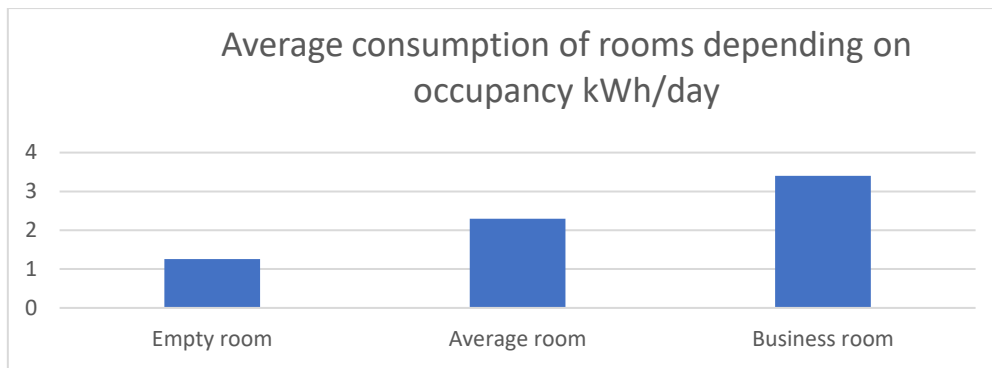
### Hotel research

The hotel under examination was built in the mid-1980s specifically for catering, however, according to the expectations of the age, the clientele was mostly from the working class. The hotel underwent several minor modernizations until the 2020s, however, thanks to the Kiszaludy program, it underwent a complete, comprehensive renovation in 2021, as a result of which it was upgraded from the previous \*\*\* classification to \*\*\*\* classification. During the renovation, in addition to expanding comfort functions, sustainability aspects played a primary role. The size of the hotel is 1520 sqm, it has 34 rooms of 18 square meters each, all of which have bathrooms. During the reconstruction, the following improvements were incorporated:

- Centralized „smart“ air conditioning system
- Smart power outlets (no reservation, no energy consumptions)
- Instead of batteries, rechargeable door knobs
- New breakfast system (mixed buffet and breakfast menu) = less wasted food
- Motion sensor lamps in common spaces
- LED lamps
- Selective waste management
- Solar panels on the roof
- Paperless booking and billing system
- Short supply chains (think global, act local)
- Water saving bathroom system

Thanks to the renovation, the total consumption of the hotel's residents became measurable, so it was possible to show the amount of energy consumed by travelers staying for different purposes. An empty room in which electronic devices are plugged in but switched off consumes about 1.2 kWh hours per day. An average double room with two average needs (minibar, 2 or 3 phone charges) consumes 2.2 kWh hours per day, while a room rented by business travellers with at least 2 laptops, 2 phones and other technical equipment charged consumes approximately 3.3 kWh hours.

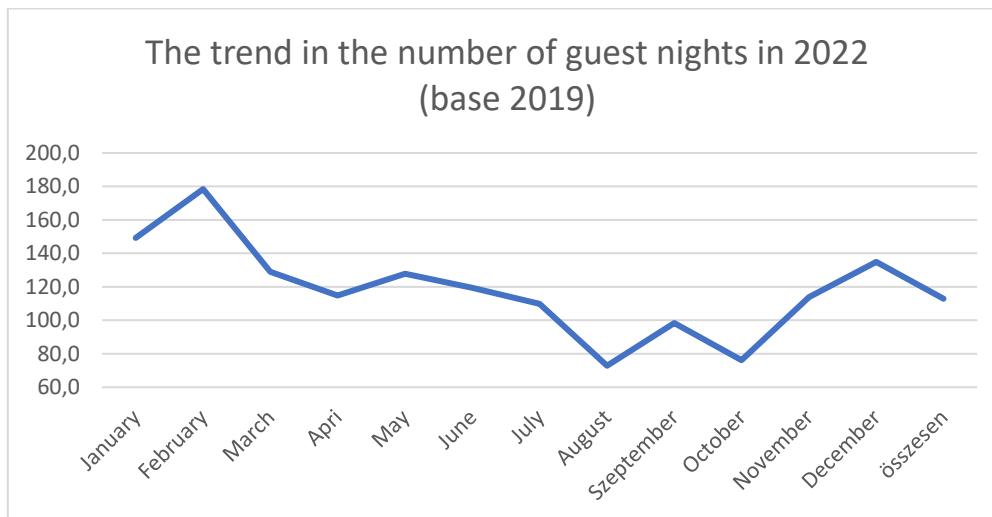
Figure 6.: Questionnaire results



Source: own work

Thanks to smart sockets connected to a reservation system that can be controlled from the reception, the system automatically cuts off the power supply to rooms where they are not currently living, so the energy consumption of empty rooms can be reduced to 0. This resulted in a significant reduction in consumption in the case of the 34-room hotel examined. The reduction of electrical consumption was also helped by the replacement of all lighting fixtures of the hotel with LED light sources, and the installation of lamps with motion sensors in public areas. The default setting of the centrally controlled air conditioning system allows guests to change the temperature of the room between 19 and 25 degrees, and automatically turns off when the guest leaves the room or opens the window. Selective waste collection has been part of everyday operation so far, but by changing the breakfast system, food scraps to be thrown away have also decreased.. In contrast to the previous custom, popular dishes such as scrambled eggs, fried or cooked sausages are no longer prepared in predetermined quantities, but fresh according to the needs of the guest. This way, only as much food is prepared as it actually consumes, and guests appreciate this type of service more.

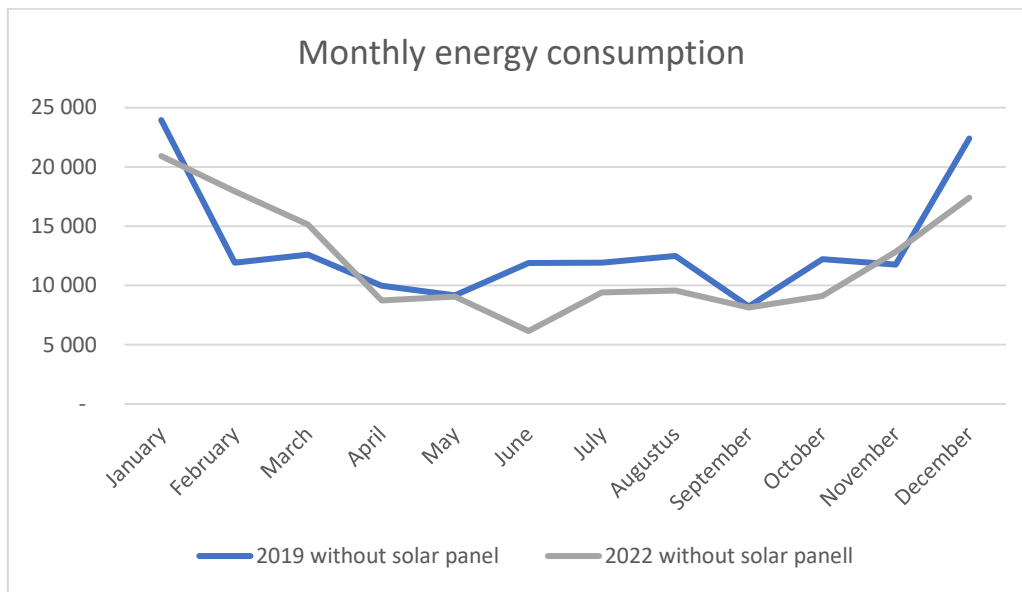
Figure 7.: Questionnaire results



Source: own work

The Covid pandemic has dealt a significant blow to all players in the tourism industry, but 2022 has already brought more overnight stays for the hotel examined than the last full year before the Covid pandemic. Although the July-October period did not reach 2019, there were 1458 more bookings overall than in 2019, which is considered the base.

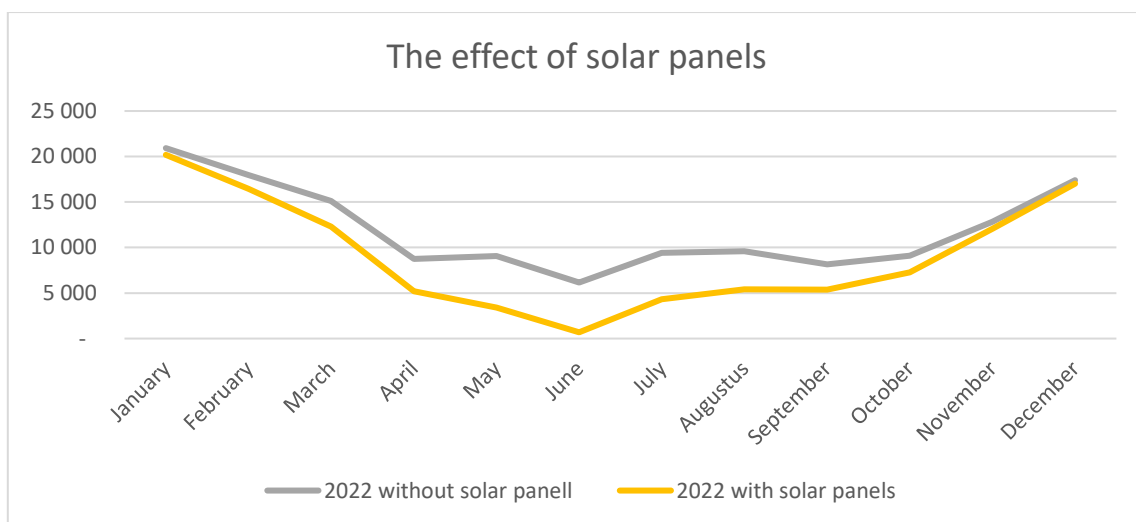
Figure 8.: Questionnaire results



Source: own work

The above figure shows that if we ignore the energy production of solar panels, it can be seen that the introduced consumption reduction measures resulted in a significant decrease in consumption in the second half of the year, even with increased booking numbers, 14,000,000 KWh less energy was billed annually, which reduced the amount of the bill payable by roughly HUF 1,000,000.

Figure 9.: Questionnaire results



Source: own work

In Hungary, the energy produced by solar panels is accounted for in a so-called SALDO system, i.e. the electricity generated by the equipment must be fed back into the electrical network through a two-way metering device, on the basis of which billing takes place at the end of the month. As you can see from the chart, during the sunnier summer months, the solar panel can generate about 60-80% of the electricity consumed by the hotel, about 35,000 KWh per year.



## Summary

The aim of the study was to show which sustainability points meet the interests of consumer expectations and hoteliers. We examined the travel habits of individuals and what are the most important measures during a complete renovation that, in addition to reducing consumption, also bring economic benefits. In the case we examined, during the enforcement of sustainability aspects, hotel guests did not have to give up any comfort functions, but rather increased service levels.

In the course of the research, there were nine points that matched the responses received from individual travelers and the actions of hotel management. These are: selective waste management, renewable energy, LED lamps, non smoking rooms and common spaces, daily measurement of energy consumption, thermally insulated doors and windows, reduced amount of waste food, water saving toilets.

Overall, we can say that, as everywhere in the service sector, market players influence each other, i.e. the needs of hotel guests shape the decisions of hotel management, and the experiences of hotel guests also shape the sustainability approach of travellers.

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