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# Effectiveness measurement for cleaning services

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#### **Abstract**

Aims: The main aim of the paper is to identify qualitative differences in the perception of cleaning service quality from the perspective of the provider, customer and user (guest) in the hotel industry.

Methods: structured interviews with the service provider, customer (representative of a hotel resort in the South Bohemia region) were used for data collection. Furthermore, data from Booking, Trivago, Tripadvisor, Google platforms on the evaluation of cleaning services by guests of the hotel resort were used. The expolatory case study method was used to process the data. A one-factor ANOVA was used to statistically evaluate the association between the perceived level of cleaning quality by guests and the overall value of their stay at the resort.

Main findings: The key result is the identification of the link between the perception of the quality of cleaning services in a hotel resort from the perspective of the service provider (cleaning company), the customer (hotel resort) and the user (guest of the hotel resort).

Limits of work: The results are valid for resorts and only for assessing the quality of cleaning services.

**Keywords:** outsourcing, perceived level of quality, supplier-customer relationship, facility management

#### Introduction

The current era brings with it new challenges for all business entities (Duong et al., 2022). It can be concluded that the post-covariance "weakening" affects both individual business entities (Li et al., 2022) and the global economy as a whole (Gómez et al., 2021). The global economic recession is due to, among other things, the slowdown and

restriction of material flows due to the COVID-19 pandemic (Priya et al., 2021), which means placing even more importance on the efficiency of individual processes for corporate practice.

The Global Value Chain (GVC), as a conceptual framework for business and intercompany processes, is constantly changing in an effort to withstand turbulent times (Ersoy & Camgoz Akdag, 2022) and adapt to new changing conditions (Ha, 2022). At the same time, the evolution of GVCs is closely linked to technological advances (Zagashvili, 2022), which can change the structure and architecture of GVCs (Cherkas & Chekh, n.d.).

Value chain analysis provides firms with the underlying technology to identify valuecreating processes and activities that represent a strategic advantage for the firm and its business partners (Cokins et al., 2021). The purpose of value chain analysis is to understand and describe the different actors and their economic performance at each node of the chain (Asiedu et al., 2022). Through the value chain, the different processes of a company can be divided into primary processes and secondary or supporting processes. A value chain for a manufacturing process is theoretically easier to define than a value chain for a service process (Mohsen aldouri & A. Kumbhalkar, 2023). In recent years, many companies have reduced their value-adding activities and introduced efficiency-oriented cost reduction, e.g., outsourcing, single sourcing, platform concepts, lean management, design-to-cost approaches (Helmold, 2022). The traditional approach to measuring corporate performance focuses on monetary terms (Dyckhoff & Souren, 2020). (Maas et al., 2023) states that the proper selection and effective use of KPIs will help an organization to achieve better performance management, identify areas of improvement and better achieve its strategic goals. There are several studies related to the topic of this paper. A large number of them focus mainly on the quality of FM processes (including cleaning services) in healthcare facilities. For example, (Y. Li et al., 2020) focuses on the research on the role of health facility management in the delivery of health services along five dimensions - cost effectiveness, customer satisfaction, energy and resource efficiency, management effectiveness, and operation and maintenance efficiency. The results showed that customer satisfaction is one of the main factors to assess the effectiveness of Fm services (Y. Li et al., 2020). (Islam et al., 2021) conducted a systematic literature review and identified four sustainable parameters of facility management (FM): people, processes, economics and social. The research results show that cost effectiveness, asset value, environment, practiced culture and design adaptability are widely accepted as sustainable parameters in FM practice (Islam et al., 2021). The aim of the study (J. H. K. Lai et al., 2022) was to develop an accurate model to pragmatically evaluate the performance of facility management (FM) in hospitals. Ten key performance indicators (KPIs) in four categories (safety, physical, financial, and environmental performance) were selected and their practical applicability was verified. (J. H. K. Lai et al., 2022) defines key performance indicators (KPIs) that are useful for hospital facility management (FM). Data collection was carried out using literature review, focus group interviews with experts. As a result, 4 main aspects of FM performance were defined: 'physical', 'safety', 'environmental' and 'financial'. .(J. Lai & Yuen, 2021).(Thomas et al., 2022) describes the evolution of cleaning services in the context of employee training. The information was gathered using a questionnaire survey.(Thomas et al., 2022). The study (Elhoushy et al., 2020) describes an investigation of the relationship between the benefits and risks of outsourcing in the hotel industry, with data collection conducted in the form of a questionnaire survey. The study (Jiménez-Barreto et al., 2021) describes case studies that investigate the impact of housekeeping communication on guest behaviour during a pandemic and its evaluation (Jiménez-Barreto et al., 2021). An exploration of the reasons for the use of outsourced housekeeping services in households is discussed by (du Toit & Heinecken, 2021). Using mixed methods research, it was found that there are three key motivations: the nature of the supplier of household cleaning services, the services provided by domestic workers and the tripartite working relationship (du Toit & Heinecken, 2021). Students' perceptions of the quality of cleaning at university have been the subject of research The data collection was done by questionnaire survey and data processing was done by ordinal regression (Palm, 2020). (Santa et al., 2023) examines the dynamics of interactions between strategies, process innovation, outsourcing practices and operational quality in the hotel industry in Colombia. Data collection was conducted through a questionnaire survey, and data processing was done through Structural equation modeling (SEM) and Analysis of Moment Structures (AMOS) tool (Santa et al., 2023). The aim of (Espino-Rodríguez et al., 2022) was to investigate the level of outsourcing of the main activities or processes carried out in the hotel and the main benefits perceived by hotel managers. A questionnaire survey was used to collect data, Data processing was done using a structural linear equation model. (Espino-Rodríguez et al., 2022) (Espino-Rodríguez & Taha, 2023) analyzes outsourcing in the hotel sector in Egypt. The data was collected from 114 hotels in two Egyptian resorts. The results show that the most outsourced activities are entertainment, transportation services, information systems and maintenance, while the least outsourced activities are reception, housekeeping, laundry and catering (Espino-Rodríguez & Taha, 2023). The study (Taha & Espino-Rodríguez, 2020) focuses on analyzing the impact of organizational culture on outsourcing levels and sustainable performance. The data collection was carried out through a questionnaire survey Data evaluation was carried out using the structural equation model was carried out using the statistical program SmartPLS 3.2.8 (Taha & Espino-Rodríguez, 2020). Research on the user's perspective on the performance of facilities (badminton halls) is addressed in (Shi et al., 2021). To collect data, interviews were conducted with badminton hall users to determine their perceptions of the importance of the facility and the level of performance of the hall. Using MATLAB, a computer program was designed and incorporated into the analytical hierarchy process to calculate the importance weights of the performance attributes assessed. The results were interpreted using the importance and performance rating matrix(Shi et al., 2021). Based on the above findings, the lack of studies investigating what are the qualitative differences in the perception of service quality within the provider-customer-user relationship can be established.

The aim of this paper is to identify qualitative differences in the perception of cleaning service quality from the perspective of the provider, customer and user (guest) in the hotel industry. To achieve the objective, three research questions were defined:

RQ1: Do customer and service provider perceptions of service quality differ?

RQ2: Does the perception of overall cleaning service quality differ for the hotel guest and the service consumer (operator)?

RQ3: Is the perceived cleanliness of the room related to the overall rating of the stay from the customer's perspective?

#### **Methods and Data**

In order to answer the first and second questions, data was collected through interviews with a provider and a customer of cleaning services in a hotel resort in the South Bohemia region.

The aspects to be assessed by the customer and the cleaning service provider were determined as follows:

- 1. With regular cleaning, the quality of cleaning is excellent, in accordance with the SLA,
- 2. With regular cleaning, the quality of cleaning is sufficient,
- 3. With regular cleaning, the quality of cleaning is inadequate,
- 4. On major replacements, the quality of cleaning is at an excellent level, in line with the SLA,
- 5. In large exchanges, the quality of cleaning is at an adequate level,
- 6. In large exchanges, the quality of cleaning is inadequate,
- 7. Re-cleaning of the apartment based on guest complaints is minimal,
- 8. Apartment re-cleanings based on guest complaints are very frequent,
- 9. The cleaning company's response to cleaning/re-cleaning requests is very quick,
- 10. The cleaning company's response to cleaning/re-cleaning requests is sufficient,
- 11. The cleaning company's response to cleaning/re-cleaning requests is insufficient,
- 12. The cleanliness of the outdoor areas of the premises is very good,
- 13. The cleanliness of the outdoor areas of the premises is adequate,
- 14. The cleanliness of the outdoor areas on the premises is unsatisfactory,
- 15. Cleaning staff are always identified with company clothing,
- 16. The behaviour of the cleaning staff is always courteous, polite, ethical,
- 17. The behaviour of the cleaning company's staff is unethical, completely unsatisfactory,
- 18. Cleaning company workers are qualified, regularly trained.

In order to answer the second research question, data collection was also carried out in the form of online reviews with ratings of cleaning services in the selected resort on Booking and Tripadvisor platforms. To answer the third RQ, a statistical analysis of online reviews from publicly available accommodation platforms (Booking.com and Tripadvisor.com etc.) will be conducted. Reviews containing the words 'cleanliness' and/or 'cleaning' will be selected for analysis. Then, for all reviews, a rating of the quality of cleaning will be defined using content analysis: positive, negative or none. Next, three groups of responses will be created, their content is shown in Table 1.

Tab. 1: Response range requirements for the analysis of online reviews

Evaluation Mention the cleanliness of the room in the review		Minimum number of reviews		
Positive	Only positive	15		
Negative	Only negative	15		
Neutral	Positive and negative, none	15		

Source: Own.

In this case, the data will be processed using a one-factor ANOVA to assess the correlation between the rating of room cleaning and the overall rating of the hotel by guests. The data will be processed in the form of a simple expolatory case study.

#### **Results**

The hotel industry in the Czech Republic is an integral part of tourism.

In the South Bohemian Region, in Lipno nad Vltavou there is a relatively high number of accommodation facilities. Their basic characteristics are shown in Figure 1.

The number of Seasonality of operation rooms year-round operation 20 summer operation 10 0 summer and winter... 0 5 15 100 10 20 25 less more 50 Category of accomodation 12 10 8 6 4 2

Hotel \*\*\*

Figure 1:Structure of recreational facilities in Lipno nad Vltavou.

Source: Own.

Camp

0

#### Case study of the recreation centre XY

Cottage

village

Hotel \*\*

Table 2 shows the responses to the questions on satisfaction with the level of cleaning services from the perspective of the hotel (C- customer) and from the perspective of the cleaning service (SP- service provider).

Hotel \*\*\*\*

Other

equipment

Pension

Table 2: Comparison of satisfaction with the level of cleaning services from the perspective of the hotel and the cleaning service

	Question	Completely agree	Rather agree	Cannot judge	Rather disagree	Completely disagree
1.	During regular cleaning, the quality of cleaning is excellent, in accordance with the SLA		C/SP			
2.	The quality of cleaning is sufficient when cleaning is carried out on a regular basis	С	SP			
3.	On regular cleaning, the quality of cleaning is inadequate					Z/SP

Question	Completely agree	Rather agree	Cannot judge	Rather disagree	Completely disagree
4. For large replacements, the quality of cleaning is excellent, in line with the SLA		C/SP			
5. For large exchanges, the quality of cleaning is at a sufficient level	С	SP			
6. For large exchanges, the quality of cleaning is poor					C/SP
7. Apartment re-cleaning based on guest complaints is minimal	С	SP			
8. Apartment re-cleaning based on guest complaints is very frequent				SP	С
9. The cleaning company's response to cleaning/re-cleaning requests is very fast		C/SP			
10. The cleaning company's response to cleaning/re-cleaning requests is sufficient	C/SP				
11. The cleaning company's response to cleaning/re-cleaning requests is insufficient					C/SP
12. The cleanliness of the outdoor areas of the premises is very good		C/SP			
13. Cleanliness of outdoor areas on site is adequate	C/SP				
14. Cleanliness of outdoor areas on site is unsatisfactory					C/SP
15. Cleaning staff are always wearing company clothing		C/SP			
16. The behaviour of the cleaning staff is always courteous, polite, ethical		C/SP			
17. The behaviour of the cleaning company's staff is unethical, completely unsatisfactory					C/SP
18. Cleaning company staff are qualified, regularly trained		C/SP			

Source: Own.

It can be concluded that the view of service quality of the customer and the service provider is very similar. Slight differences are registered for the aspects Quality of cleaning during regular cleaning, Quality of cleaning during large changes, Frequency of re-cleaning based on guest complaints. In all cases, better service ratings were recorded for the customer than for the service provider. Overall, there was satisfaction with the level of service and its delivery on both the provider and customer side. A summary of customer ratings is given in Table 3.

Tab. 3: Summary of guest ratings on selected platforms

Platform	Number of reviews	Cleaning value	Overall value	
Booking	864	8,5/10	8,3/10	
Tripadvisor	177		4/5	
Google	5514		4,5/5	
Hotel.cz	40	92%	92%	
Trivago.in	76	8,5	8,4	

Source: Own.

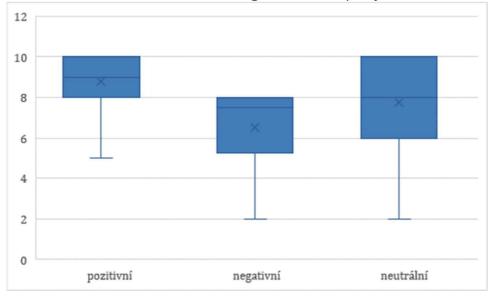
According to the answers, it can be concluded that the operator of the premises itself would rate the level of its own cleaning as excellent or very good. In quantitative terms, this would be a rating of 8-10 out of 10 (depending on the type of cleaning).

It can therefore be concluded that the overall assessment by guests is positive, with the level of cleaning rated very good to excellent by the user. For a more detailed evaluation of the impact of the cleaning rating on the overall rating of the stay, the results of the statistical analysis of the guest reviews are presented below.

As part of the response descriptions, Figure 3 shows the Median of the responses regarding the association between room cleaning rating and overall resort/stay rating.

A total of 63 responses were included in the evaluation, including 16 negative, 15 neutral, and 32 positive.

Fig. 3: Median responses regarding the association between the rating of room cleaning and the overall rating of the resort/stay



Source: Own.

Table 4 shows the results of the evaluation of the effect of mentioning the cleanliness of the room in the online review on the overall rating of the stay/accommodation.

Tab. 4. Results of testing the relationship between mentioning the cleanliness of the room in the online review on the overall rating of the stay

	Tested factor: level of satisfaction with the stay					
	Df	Sum Sq	Mean Sq	F value	Pr (>F)	
Mention the cleanliness of the room in the review	2	56.46	28.228	9.185	0.000331	
Residuals	60	184.40	3.073			

Source: Own.

Based on these results, it can be concluded that there is a direct link between the rating of the cleanliness of the room and the overall satisfaction of the client.

#### **Discussion**

The research questions were defined as follows:

RQ1: Do customer and service provider perceptions of service quality differ?

RQ2: Is the perception of overall quality of housekeeping service the same for the hotel guest and the service consumer (operator)?

RQ3: Is the perceived cleanliness of the room related to the overall rating of the stay from the customer's perspective?

The above results suggest that the perceived level of service is similar for both the provider and the customer. With this conclusion, the study builds on the results of (Santa et al., 2023). An interesting finding is that in some aspects the customer perceives the quality of the service performed higher than the service provider. These are the aspects Quality of cleaning during regular cleaning, Quality of cleaning during major changes, Frequency of re-cleaning based on guest complaints.

Regarding the similarity of the perception of the service quality of the holiday resort operator and the guests, it can be stated that in this case the perception is quite similar. The perception of the provider corresponds to higher ratings by customers. The findings are indirectly related to the results of (Jiménez-Barreto et al., 2021) on the association of cleaning service with guest satisfaction.

The quality of the cleaning service is one of the key factors in the success of an accommodation facility. A direct link between room cleanliness and overall accommodation rating has been confirmed. This conclusion builds on (Palm, 2020).

To achieve long-term competitiveness, it is essential to set the evaluation criteria according to the user's requirements. The service delivery system must be transparent and capable of long-term objective re-evaluation, both by the customer (resort operator), the service provider, and the user (resort guest).

#### Conclusion

The aim of the paper was to investigate the qualitative differences in the perception of the quality of cleaning services from the perspective of the provider, customer and user (guest) in the hotel industry. The key result is to establish the link between the perception of cleaning service quality in a holiday resort from the perspective of the service provider (cleaning company), the customer (holiday resort) and the user (guest of the holiday resort). Based on the case study, it can be hypothesised that the perceived level of cleaning service quality does not differ between the provider, customer and user.

The results of the study define recommendations for corporate practice. The main recommendation is to continuously monitor user feedback and to tailor cleaning requirements according to user preferences. Another recommendation is the long-term monitoring of the quality of cleaning services.

The research has some limitations. The results are valid for facilities of similar type to the research object. The results are also limited to the type of service.

Based on the results, directions for future research can be defined. Since this is qualitative research, it is necessary to support the research questions that arise with quantitative evaluation. It is necessary to conduct a comprehensive evaluation of multiple recreational facilities in order to test the above hypothesis.

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