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Investigation of business client's behaviour in the context of price demand elasticity

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ABSTRACT

The study's primary purpose is to investigate the behavior of business clients by measuring their coefficient of price elasticity of demand. Many revenue management studies describe this segment as price inelastic without empirical evidence. The paper uses an econometric approach to estimate the customers' reactions to pricing strategies. Log-log regression models based on OLS were used to figure out the coefficient of price demand elasticity. The data came from 9343 reservations made by business travelers that were taken from the property management system. Contrary to previous expectations and estimates, the findings show that business travelers are becoming more price-sensitive. The demand is price elastic for shorter stays of 2-3 nights (Epd=-1,121) or reservations from the business OTAs (Epd=-1,030). Most previous studies thought that business travelers wouldn't care about price and wouldn't be interested in online dynamic strategies. This study shows that their behaviour has changed. Contrary to previous revenue management studies, we propose widening the scope of their online activities to business clients who tend to be more flexible. Revenue management optimization processes might directly adopt the study's results. Hoteliers should include business clients in their dynamic pricing strategies.

Contribution/Originality: The study's originality lies in the application of an econometric approach to understand the customer behavior with stress on the corporate clients commonly labelled as price insensitive without empirical evidence. The online corporate clients should be included in the optimization procedures and should be perceived as a price-sensitive market segment.

1. INTRODUCTION

The customer-centric orientation of the hospitality industry creates the need for a proper understanding of customers' needs and wants and their estimation, further influencing satisfaction. As a result, we can find hoteliers with mass-market orientation and entrepreneurs who develop highly personalized services for their clients. The hotels mostly try to personalize their products and services for various market segments with homogeneous characteristics.

From this perspective, several authors state that market segmentation is one of the essential activities within marketing, not only in the hospitality industry (Ivanov, 2014; Vives, Jacob, & Payeras, 2018). Chu and Choi (2000) highlight the importance of market segmentation, emphasizing knowledge development in needs, wants, and

behaviour intentions. That means hoteliers should understand the various market segments and their behaviour and develop the appropriate marketing strategy. Zhang and Bell (2012) and Dolnicar (2002) perceive the importance of market segmentation in building a competitive market advantage through customer satisfaction.

Wu, Liu, Chen, and Wang (2012) define market segmentation in the hospitality industry as a strategy of differentiated pricing across the customers and various situations on the market. From this perspective, Png (2013) describes three levels of price differentiation/discrimination, namely (1) complete price discrimination built on the comprehensive knowledge of the behaviour of hotel clients, their value perception, and willingness to pay, (2) direct segment discrimination based on the assumption of homogeneous behaviour of heterogeneous groups of hotel clients and ability to reduce the migration between market segments; and (3) indirect market segment discrimination used to distinguish between the market segment based on their value for accommodation facilities.

A lot of recent research on marketing (mainly market segmentation and customer understanding) and revenue management (mainly dynamic pricing and online distribution) in the hospitality industry focuses on how important online leisure sales are, but not so much on online business (Guizzardi, Pons, & Ranieri, 2019; Vives & Jacob, 2020). In Choi and Mattila (2018) study, which discusses the internal and external reference price, the proposal of price stability over its volatility is prescribed to business clients. In opposition to this study, Guizzardi, Pons, and Ranieri (2017) highlighted that business clients are keen to use BAR (Best Available Rates) rates on the OTAs (Online Travel Agencies) to check the convenience of their contracts, which leads to the higher dynamicity of the pricing for this segment.

Concerning previously stated definitions of hotel business customers and their behaviour and a more detailed display of this market segment behaviour in the literature review, there is a need to reconsider the business clients and their behaviour based on the authentic, updated market data to better fit the revenue management and marketing strategies of the accommodation facilities and inclusion in the revenue management research for a more comprehensive understanding of the distribution mix creation and gross operations profit optimization.

The main aim of this study is to understand the behaviour of business clients by investigating their coefficient of price elasticity of demand. The study uses empirical transaction data mining from the hotel Property Management System (PMS, the core information system used for managing the whole hotel), which has lately been analysed by SPSS Statistics 23.

The added value of this study is in practical reasoning of the assumptions connected to the behaviour of the business clients in the hospitality industry, where the business clients are commonly described as a non-yieldable or non-flexible segment with fixed prices and a low level of price elasticity. The presented study uses single property data, which is the main limitation for the broader generalization of its outputs. On the other hand, the study faced a common issue: the low willingness of the hoteliers to provide highly granulated transaction data, which are perceived as the key competitive advantage of hotel operators. Wider accessibility of data is unfeasible. Study results bring novel insight into customer behaviour quantification, which should be tested in further research. Concerning the recent study of Song, Qiu, and Park (2023) the study provides readers with insights into the behaviour of hotel clients based on the econometric approach. The study's limitations are discussed to highlight the benefits of such an approach and the possible threats to its application.

The study is divided into connected sections, where the literature review creates the knowledge basis for the whole study and focuses mainly on the business client's behaviour and its development in the hospitality industry and the estimation of the price demand elasticity coefficient in the hospitality industry context. The results section presents the methodology and estimation results based on the literature review. The discussion section talks about the study's results in the context of other research that has already been done. It also lays the groundwork for the conclusions section, which is supposed to give an overall look at the study's limitations and its theoretical and practical implications.

2. LITERATURE REVIEW

Market segmentation divides hotel customers into homogeneous groups based on their needs and behaviours (Ivanov, 2014). According to Talluri and Van Ryzin (2004) these market segments (and their members) mainly share the perception of hoteliers' marketing efforts with similar reactions to them. In revenue management, we mainly talk about price perception, willingness to pay, or value perception. Furthermore, Hanks, Cross, and Noland (1992) add the dimension of time, locality, and travel motivation, where the behaviour will be influenced by the date of stay and its length, the location, and the purpose of the trip. Hotel clients' most common and general differentiation is dividing their motives into leisure and corporate/business (Gallego & Van Ryzin, 1994).

Several characteristics are directly associated with business clients in the hospitality industry. Ivanov (2014) states that corporate clients are price-insensitive and willing to pay higher room rates. This implies that different stimuli, rather than room rates, drive the demand in this segment. The concept of price-demand elasticity is directly used within revenue management to optimize hotel distribution and is one of the critical concepts of this study. In many cases, corporate clients book their stays based on corporate agreements and fixed corporate rates (CORPRATEs), which might be positively perceived by the company and even hotel operators (Choi & Mattila, 2018). According to Carlsson (2003) corporate clients are willing to pay above-average prices for services in connection with the inflexibility of their request, which is strongly connected to a predefined schedule. In the sense of pricing and price perception, the demand is slowly shifting online; that is why business clients use the best available rates on online distribution channels to re-evaluate their contracts and ensure the best possible rate conditions (Guizzardi et al., 2017).

Based on the characteristics of the corporate clients, there is a significant need to examine the customers' behaviour based on the most recent data reflecting their behaviour. In the previous studies, empirical proofing of the market segment behaviour was not provided, and only secondary or publicly available data were used. Verification of the paradigms is necessary in this context. Even though the authors Choi and Mattila (2018); Guizzardi et al. (2017) and Ivanov (2014) reflect the same market segment, various perceptions of pricing strategies and acceptance might be found.

When focusing on the dimension of time, corporate clients mainly travel during the weekdays, and their booking patterns are not framed by time as much as for leisure travellers, where the corporates can be described as impatient because they book whenever it is needed (Abrate, Fraquelli, & Viglia, 2012). Dolnicar (2002) highlighted the importance of price as well (as the hotel offer needs to match the allocated budget for travelling), location (and its connectivity to business places and transport nodes), and reputation (the brand and its position on the hospitality market and its connection to business clients). This directly reflects significantly lower time spent on researching the possibilities. In most cases, the budget is predefined, and corporate rates are applied for the stays where the booker differs from the person staying in the hotel. The different perceptions of the value of the accommodation and different motives for the actions might be an important factor for the declared behaviour.

When focusing solely on the needs of corporate clients, Guizzardi, Monti, and Ranieri (2016) highlighted the difference between the service perception by the customer (booker) and the consumer, where the hedonic characteristics are mainly crucial for the consumer (the person who stays in the hotel). These are a calm environment with no noise disturbance, a high level of services, 24-hour front desk operations, and location, especially in the urban context of infrastructure and business premises. The common difference in service perception is presented in the study of Gustafson (2012a) where the corporate travel managers (the employees responsible for managing all the tasks connected with travel issues within the organization and customer from the previous definition) tend to keep travel costs low and use seamless services with a high level of complexity. The consumers (the business clients) are more focused on the standalone experience in the form of hedonic characteristics presented by the previous study. The hedonic point of view on corporate clients is well described by Yavas and Babakus (2005) who described the most critical services for business clients as access to computers and

office technologies (mainly high-speed and stable internet connection), comfortable lounge or working area and expressed check-in and check-out. Knutson (1988) identified five crucial factors for hotel selection: cleanliness and comfort, location, range of available services, security, and friendliness of the hotel employees. According to Radder and Wang (2006) the staff, parking area security, and professionalism are crucial hotel success factors. Other studies can also find common findings (Cobanoglu, Corbaci, Moreo, & Ekinci, 2003; Dolnicar, 2002; Lockyer, 2002). Fawzy (2010) focused on 5-star and 4-star hotels, where the requirements for the services and hotels slightly differ. For 5-star hotels, the accuracy of wake-up calls was identified as the most crucial factor, whereas for 4-star hotels, the security and safety of the room were the top-rated factors. The other factors corporate clients care about are the cleanliness of the room and bathroom, quality of sleep and services, quality of food and beverages, and flexibility of the services, mainly in connection to check-in and check-out. The text-mining studies by Herjanto, Erickson, and Calleja (2017) and Chen, Severt, Shin, Knowlden, and Hilliard (2018) confirm these findings.

To target corporate clients, it is crucial to set a competitive pricing policy to eliminate the need to research another opportunity while maintaining a high level of services, where the corporate clients tend to share their insight with the travel managers for further reservations and stays.

The needs of leisure and business travelers are very different, as explained by Unger, Uriely, and Fuchs (2016) or Gustafson (2012b). For business travelers, it's important to find a balance between rigidly scheduled activities like transportation and business meetings, where the focus is on quality service and a smooth experience, and free time, where they tend to stick to their normal lives and activities like wellness and fitness. In both cases, the travellers are willing to pay higher rates for the services, as the company pays for the accommodation and is not strictly linked to the travellers' budget. On the other hand, Millán, Fanjul, and Moital (2016) focused on business travellers concerning their emotions and revisiting intentions. Therefore, individuals evaluate the benefits, destination, and overall experience based on their personal preferences and feelings, which directly influence future bookings or leisure revisits. Furthermore, as corporate travel is strongly connected to MICE (Meetings, Incentives, Congresses, Exhibits) tourism and events, some studies focus on hotel refurbishment and highlight the need for specific technologies and equipment required by the event organizers and attendees (Richards & Richards, 1994; Whitfield, 2007; Whitfield & Webber, 2010).

In revenue management, the hedonic characteristics of the accommodation facilities cannot be changed in the short term. Hence, the revenue managers focus more on pricing, distribution channels, and stay restrictions (Vives et al., 2018). Price perception of the business clients was described in the first part of the literature review, where several paradigms were used without proper empirical proof. For example, Ivanov (2014) stated that the business clients are price insensitive, and Guizzardi et al. (2017) noted that these clients are looking for the best offers online, opposite to Ivanov (2014) and Choi and Mattila (2018) who stated that the business clients prefer fixed CORPORATEs (Corporate Rates). This paper focuses on revising these paradigms using the empirical data mined from the hotel system and the estimation of price-demand elasticity.

The concept of price demand elasticity was previously used mainly to estimate the reactions of online leisure customers/travellers to dynamic pricing strategies. Vives and Jacob (2023) used internal data from seven Spanish resort hotels while finding hedonic factors of the accommodation facilities and bundling of the services as the drivers of inelastic demand and time variables as the drivers of the elasticity of the demand. Chalupa and Petricek (2024) used two-Step clustering to identify the novel market segments and their further use in tailoring the hotel offerings to their customer. Their research describes the market segment based on its behavioural characteristics and price demand elasticity. Estimates of price-demand elasticity allow hotel revenue managers to plan their strategies with customers' expected reactions. Hotel revenue managers can tailor these strategies to either increase or decrease the market demand for accommodation services. The knowledge of the customers' behaviour and reaction to pricing strategies and price variability is essential to manage the demand and overall performance of the accommodation facility.

Even though the price demand elasticity might be perceived as the essential characteristic of the customer, the lack of studies focusing on its estimation provides a more detailed description of the methodology used. Ivanov and Piddubna (2016) and Vives et al. (2018) identified corporate clientele as price-insensitive market segments. This assumption was mostly based on how the hoteliers worked together and how they distributed their products. The lack of online channels for distribution and the use of dynamic pricing were not taken into account. The author assumes mainly hedonic pricing. To address some of the methods used within previously mentioned studies, the autoregressive log model using the secondary aggregated data about industry performance (Tran, 2015), log-log regression model (Petricek, Chalupa, & Chadt, 2020), linear and non-linear modelling techniques (Lee, Jeong, & Shea, 2021), logistic regression model (Balaguer & Pernías, 2013), or multiple logistic regression model using secondary data (Ratliff, Venkateshwara Rao, Narayan, & Yellepeddi, 2008) were used. The data used within the study ranged from the overall market data to single property data.

As for the results, we can identify a high level of variability due to the different orientations of these studies. The use of different markets, customer segments, and datasets led to this variability. Rosselló, Aguiló, and Riera (2005) estimated the elasticity of the demand ranging from -0, 4 to -0,51. These values are close to the results of Hiemstra and Ismail (1993) and Bayoumi, Saleh, Atiya, and Aziz (2013) who reached the estimation results of -0,44. Tran (2015) identified a higher coefficient value, whose study showcases the results ranging between -0,02 and -0,03. In most cases, these results of estimates are linked to the transient online segment and might be used only as a reference for further examination of the corporate clients.

Based on the presented paradigms and shift in perception of customer behaviour, which lead to the implementation of econometric approaches in evaluating the reactiveness to pricing strategies, the investigation based on the empirical market data is needed to verify the changes in corporate customer behaviour and its shift in time. Furthermore, revenue managers and hotel managers strive for a complex and comprehensive evaluation of the distribution mix while finding the most effective (optimal) strategy to reach their business goals, which, in many cases, is optimal gross operational profit. The paper's goal is supported by these results, which also show why the behaviour data from corporate clients should be used instead of data from interviews, which could be subjectively biased.

3. METHODS

The study uses transaction data mined from the hotel PMS (Property Management System), which is considered the most detailed record of customer behaviour. These transaction data were obtained from the centrally located four-star hotel in Prague, which consists of 210 rooms and a total capacity of 160 seats for meetings and conferences. The hotel targets both leisure and business clients.

In total, 9570 reservations were used, emphasizing that the study focuses primarily on corporate clients and that all leisure reservations were excluded. The dataset represents the yearly reservations of the selected hotel in the selected segment. The yearly data were used to capture the variability throughout the various seasons in the year, where the higher demand is allocated to the periods between March and early June and September and late November. The options for visiting Prague vary; the yearly overview allows revenue managers to plan their actions more precisely.

Vives and Jacob (2023) and Chalupa and Petricek (2024) used the approach of using the data with a high granularity level. As the data were mined from the PMS, several missing cases or incorrectly transferred data were excluded due to the malfunction of ETL (Extract Transfer Load – data pump). In total, 3.5% of the cases were excluded. The elimination of the cases was accepted due to possible bias of the missing values in the results.

The dataset included data about timing (date of reservation creation, date and day of arrival/departure, length of stay, total revenue from the reservation, type of distribution channel and the precise intermediaries, revenue generated from other outlets, number of rooms within the reservation and the number of guests and the type of the

accepted rate. Other variables were calculated based on the transaction data. The booking window (the difference between the date of reservation creation and date of arrival) and the average daily room revenue (gross and net).

All the cases were tested for normality, and 137 were excluded as outliers. To see if the data was normal, the authors used a two-step cluster analysis-based data validation process, which works well for large data sets with lots of categorical and nominal variables. The study uses the demanded quantity (sold rooms) and their prices and the other variables mentioned in the previous paragraph for the test to reach more reliable results. In total, 9343 transactions were used for further analysis.

To understand the behaviour of the business clients, the coefficient of price demand elasticity was calculated using the log-log regression model (previously used by Petricek et al. (2020) where their approach delivered very good results compared to other methods used by other authors mentioned in the literature review). Before applying the selected methods, further preprocessing and data testing were needed to secure the reliability of the results. Due to the nature of the data, no zero values were identified (if identified, these were not rooms sold but bartered or given as the gratuity and were excluded in the data mining procedure as they are part of the opaque pricing commonly excluded from the revenue management practices). The data were later tested for heteroskedasticity using the Cook-Weisberg test. The test results did not prove the heteroskedasticity of the data, leading to the conclusion that OLS (Ordinary Least Squares) might be used.

The form of the log-log regression model is following:

$$log\ Q_i = \beta_0 + \beta_1 * log\ P_i + \varepsilon_i$$

Where Q represents the demanded quantity, P is the given price for the amount demanded, the β stands for the theoretical regression model parameter, and the ε represents random error. From this theoretical function, we focused mainly on the parameter β1, which represents the coefficient of price demand elasticity. This coefficient can be estimated using the following formula.

$$\beta_1 = \frac{\frac{1}{n-1}\sum_{i=1}^{n}(log\ P_i - \overline{log\ P}) * (log\ Q_i - \overline{log\ Q})}{\frac{1}{n-1}\sum_{i=1}^{n}(log\ P_i - \overline{log\ P})^2}$$

To evaluate the clients' responsiveness to price changes, it is crucial to understand the concept of price demand elasticity and the possible results of its calculation. The coefficient of price demand elasticity shows the difference in the demanded amount of the reservation in connection to price changes. For fully inelastic demand, the coefficient value is equal to zero. The Epd coefficient values lie within the inelastic demand intervals (-1;0) and (0;1). If Epd = 1, the demand is unit elastic; for Epd > 1 and Epd < -1, the demand is elastic. It is crucial to mention that the demand with positive Epd coefficient values would grow with the price increase.

Mohammed, Guillet, Law, and Rahaman (2021) stated that the booking window plays a crucial role in customers' decision-making and revenue managers' activities as the price varies in the various booking horizons. That is why the coefficient of price demand elasticity was calculated for the whole segment in predefined periods and the segments based on the partial characteristics (length of stay, distribution channel, booking window). These variables were selected based on the literature review and their complex description of customer behaviour, where various behaviours were identified for distribution channels and connected distribution strategies. Customers with longer stays follow different behavioural patterns from those who book short stays, and the booking window represents the time needed for planning and securing the best possible prices and conditions for the stays. In these situations, the variables represent different customer subsegments and allow revenue managers to plan their strategies more precisely.

4. RESULTS

Previously mentioned data and methodology were used to estimate the coefficient of price demand elasticity for the business clients who stay in the hotel and accept the offer. As a result, the yearly price-demand elasticity

coefficient reached the value of -1,364. From this perspective, we can discuss the elastic demand for accommodation services. To avoid too simplistic conclusions, the authors adopted a more analytical approach and investigated the monthly values of Epd presented in the Table 1.

Table 1. The values of the price demand elasticity coefficient for selected periods.

Month	Corporate Epd
January	-0.446
February	0.289
March	-0.231
April	-0.106
May	-0.028
June	0.135
July	-0.348
August	-0.128
September	0.074
October	-0.109
November	-0.947
December	-0.686

Based on the results of Epd for individual months, we can see the difference in the behaviour of business clients in the winter season (November–January), where the demand was nearly elastic (mainly in November) with a significant difference to strongly inelastic demand during the rest of the year. This led to the conclusion that the business clients of the selected accommodation facility might vary in their behaviour based on situational factors, and more variables were implemented in the analysis.

Firstly, the different lengths of stay were analysed. The majority of the stays of the business clients took one night (36%) or 2-3 nights (48%), whereas only 2% of stays took more than seven nights. For the more extended stays, the Epd was 0.16 for 7-13 nights and 0.59 for even longer stays. The demand for extended business stays is inelastic and sticks with the perception of business clients, who make decisions primarily based on hedonic characteristics, not the standalone price. It is crucial to mention that all these extended stays were based on a fixed agreement with the company. For shorter stays, the value of Epd was − 0.401 (for 1-night stays) and -0, 453 (for 4-6 nights). For the most common stays, the Epd = -1.121, which can be perceived as an elastic demand. Based on the values, we can see that the price plays a significant role in the final decision-making for shorter stays. To prove this conclusion, we must state that the final average room rate was the lowest for the shorter stays.

As time plays a crucial role in customers' decision-making, Epd was calculated for different booking windows. For last-minute (same date) reservations, the Epd was -0, 788 which grew to 0, 064 for the booking window of 4-7 days, where the demand is nearly perfectly inelastic (this is mainly caused by the terms and conditions of the cooperation with the corporations based on the agreements). Epd is slowly growing to -0.751 for the reservations done 3 to 6 months before arrival. For extended periods, the Epd is dropping to -0.291.

The authors mentioned several times the impact of cooperation or distribution channel characteristics. That is why the Epd was also calculated for the specific distribution channels as presented by Table 2. Mainly corporate contracts, consortia, central reservation systems, meeting plans, and other MICE-oriented companies and corporate-oriented OTAs. We can see that the demand derived from the central reservation system and OTAs is price elastic as the corporate individuals use these distribution channels without contracts to look for the best available offers. Contrary to the presumptions of many researchers listed in the literature review, these clients can be stimulated by product personalization and the best publicly available rates that are competitive with the offers of the other hotels in the market. Loyalty programs and schemes, which offer direct benefits when booking a specific hotel, may also influence customers.

Table 2. The behaviour of corporate clients, based on the selected distribution channel.

Distribution channel	Count	The length of stay		Average room rate		Lead time		Epd
		μ	σ	μ	σ	μ	σ	
CONS	1360	3	11	2507	833	22	28	-0.292
CORP	6772	3	10	2440	925	25	39	-0.027
CRS	108	6	11	630	970	12	31	-0.929
MP	266	4	3	2697	1077	14	20	1.570
OTA	837	2	2	2479	779	18	19	-1.030

Meeting planners (MP) and other MICE-oriented intermediaries find themselves in an interesting position. These businesses plan all the products while having a predefined budget provided by the event owner. However, these reservations are mainly last-minute or ad-hoc bookings excluded from the predefined event. The meeting planners book most hotels throughout the event, accepting any rate to accommodate the people.

5. DISCUSSION

Understanding customer behaviour is crucial for the revenue and marketing managers and the whole hotel team to secure high customer satisfaction and service quality. For example, Fawzy (2010) and Chen et al. (2018) targeted mainly the hedonic characteristics of hotels, Ivanov (2014) described the business clients as price insensitive, and Guizzardi et al. (2017) showcased the shift of demand in this segment to online channels. This study's uniqueness lies in using empirical data to verify these presumptions and paradigms.

To verify the findings of this study, the authors compared the results with results from previous years and made several conclusions. Firstly, there is a growing need to make the corporate rates more transparent, as the companies with fewer stays are not using the fixed rates (CORPRATES) so often and are accepting the best available rates provided by online distribution channels, mainly the OTAs and CRS (Central Reservation System). This contrasts with Carlsson (2003) but proves the thesis of Guizzardi et al. (2017) where corporate clients review the rates in agreements on online distribution channels and pick the most suitable ones. This might also be proved by the price-demand elasticity coefficient values for OTAs and CRS (Central Reservation System of the company used for online reservations on the hotel website), where the identified elasticity was -1,030 and -0,929. The growth of demand on these channels brings more reservations (mainly from the companies with lower yearly performance) in yearly comparison.

Contrary to Mohammed et al. (2021) the results show that the booking horizon does not affect the acceptance of specific offers for corporate clients. You can use these characteristics to plan your marketing communication, but don't rely on price stimulus. Using price as a stimulus can be used only for the reservations from the OTAs, where the offers are presented publicly and used by the FIT (Frequent Individual Traveller) segment. Including these dynamic reservations can improve overall performance, even in the other online segments.

Many previous studies focused on dynamic pricing and revenue optimization, mainly in the scope of the individual leisure demand from online sources (Guizzardi et al., 2017; Vives & Jacob, 2020). This approach does not consider changing corporate clients' online behaviour and shift. Based on the basic perception of the values presented by Ivanov (2014) corporate clients are still willing to pay higher rates as there is a difference between customers' and consumers' perceptions of price. The inelasticity of demand is visible for the corporate agreements (in Table 2 CORP), where the value of the price demand elasticity coefficient was -0,027, and for Consortia (-0,292). These channels mainly work with longer periods of prices provided to corporate partners.

More detailed segmentation of the clients, where the corporate clients are not perceived as one homogenous segment, is needed. A more fragmented market can be later applied in the optimization models (Petricek, Chalupa, & Melas, 2021) and further research in revenue management, marketing, or consumer psychology. The study's findings also propose a way to capture the customers' dynamicity and reactiveness through the estimated price

demand elasticity of the demand, where the static cross-sectional description of the market segments is improved by another layer/dimension that can be used within the forecasting and budgeting.

The presented results bring a new look at the behaviour of corporate clients; on the other hand, in some cases, Giffen's Paradox was identified similarly to the study of Petříček and Chalupa (2021). This situation occurs when the coefficient of price demand elasticity is positive, which means that the client is increasing the demanded quantity with the increase in the selling rates. Customers under contract and meeting planners (MP) primarily cause the situation. These market segments use fixed room rates (or budgeted rates), and any additional rooms are sold for market values, often during periods of high occupancy (as declared by the data). To describe the situation more closely, there is always a higher level of occupancy during the event hosted by the hotels. The additional rooms for organizers and MPs are sold at market rates that are commonly higher than the contracted ones. The elasticity reflects the customer's lack of options and application of the revenue in hotel operations. Customers perceive these rooms as highly valuable and are willing to pay nearly any rate to stay in the hotel. When comparing the number of reservations, the MPs are not as significant as the other channels but might be used to increase overall performance when the demand is strictly limited to specific accommodation facilities.

The study's results showcase the possible changes in the price demand elasticity, where the coefficient's estimated value changes. The same results are presented in the other hospitality industry-focused studies by Vives and Jacob (2023) and Chalupa and Petricek (2024) and other studies listed in the literature review. These studies identified more factors like the length of stay, booking window, number of rooms, type of distribution channel, and price category as factors affecting the value of the coefficient of price demand elasticity. For example, the assumption of constant elasticity in dynamic pricing presented by Helmes and Schlosser (2013) does not have empirical evidence in the hospitality industry studies. McAfee and Te Velde (2008) used the constant price demand elasticity in their research, focusing on dynamic pricing but on the monopoly market. Zhao and Zuo (2022) used the theoretical constant elasticity demand to evaluate the technical progress in the hospitality industry and tourism. The level of aggregation must be higher than in the presented study. The current research must consider the changing behaviour of the customers and many factors driving these changes (Chou, Horng, Liu, & Lin, 2020).

6. CONCLUSION

The presented results offer both practical and theoretical implications, primarily for hotel practitioners, educators, and researchers. Practical implications are strictly connected to the managerial orientation of data-driven and knowledge-based decision-making, where the data and knowledge derived from them are the basis for the hospitality industry (Liu & Dong, 2021). The results of this study are consistent with the findings of Ivanov, Del Chiappa, and Heyes (2021) who described the gap between the knowledge of revenue management researchers and practitioners. Alrawadieh, Alrawadieh, and Cetin (2021) showcased the digital transformation of revenue management based on digital technologies. Similarly to this study, Farías and Cancino (2021) connect the technologies and their application, including knowledge management, with sustainable hotel operations. To support the idea of data transformation and knowledge creation, Frias, Raskova, Costa, and Cabral (2021) showcased the ways of data transformation and tourist preferences tracking. Considering these, revenue and marketing managers in accommodation facilities should adopt new technologies that are more accessible to track customers' needs and wants, the shift in customer behaviour, and its quantification.

Kim, Koo, and Han (2021) supported the idea of lifelong learning principles in hotel operations, stressing knowledge management, creation, and transfer. Perceptions of these outputs and their implications for educators may vary. Horng, Liu, Chou, and Huang (2020) highlighted the need for knowledge transfer during the learning process of hospitality professionals and innovation building. Students of hospitality management today should learn how to use modern technologies and take classes that help them understand marketing and revenue management tasks as part of their curriculum (Damnjanović, Lončarić, & Dlačić, 2020).

Customer behaviour is not static, and the researchers must apply the data mining techniques and econometric approaches to capture the current state of the behaviour and its development and variability and adopt this approach in further research. Similar to this proposal, the researcher should comprehensively investigate revenue management and marketing concepts. As many paradigms are used, researchers must revisit these and switch from the static perception of the activities to dynamic ones. Based on the study of Ivanov et al. (2021) practitioners, educators, and researchers should find a standard way to understand the changes in customer behaviour and revenue and marketing management. This study showcases the methods of quantifying customers' behaviour and the shift in corporate demand, emphasizing the usage of online distribution channels.

One problem with the study is that it only used data from one property transaction and extrapolated the results. However, this method of measuring price demand elasticity has been used and proven to work in other studies (George, 2021; Petricek et al., 2021; Ustunel, Celiker, & Guzeller, 2021). The authors admit that the results might differ after increasing the scope of the application; on the other hand, presented outputs highlight the need for data-driven decision-making within marketing and revenue management in accommodation facilities and revise the commonly used paradigms. Even though the results might not be directly applied in every property, the proposed approach will lead to understanding the clients' behaviour, which might be property, category, or class specifics.

The need for data-driven operations is visible in the results of other research papers (Ivanov et al., 2021; Kim et al., 2021). The authors call for applying knowledge management principles in hotel operations and describe the knowledge gap between the research and the applications of the results in operations. Hotel operations must implement commonly used approaches and research results to confirm their relevance. The new technology application allows hotel employees to use customer insight in central customer processes. On the other hand, many studies do not follow trends and changes in customer behaviour.

Further research should focus on the two key areas. Firstly, the researcher must understand the complexity of customer behaviour and quantify the behavioural characteristics comprehensively. Secondly, the researcher and practitioners must revise the currently used paradigms and assumptions to build a complex understanding of behaviour and its changes in time. For both tasks, the data are directly available in hotel systems, which might be the best source of customer understanding for the hoteliers and the best source of competitive advantage building and sustaining.

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