SATISFACTION OF SHORT-TERM RENTAL CUSTOMERS: EMPIRICAL STUDY IN PORTUGAL

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Abstract. This study has three specific objectives: to analyse the association between the characteristics of the accommodation and the satisfaction of short-term rental customers; to analyse whether customer satisfaction is associated with them recommending the accommodation; and to analyse which satisfaction dimensions most influence the overall satisfaction of short-term rental customers. Data collection was carried out through an online survey aimed at individuals residing in Portugal, who stayed overnight in a short-term rental accommodation within the national territory. One thousand valid inquiries were collected. The results suggest the following as main contributions: the demonstration that the type of accommodation and the neighbourhood are associated with the satisfaction of short-term rental customers; the validation of the importance of customer satisfaction in terms of them recommending the accommodation; the identification of the importance of the various satisfaction dimensions as determinants of the overall satisfaction of the short-term rental customer.

Keywords: short-term rental, satisfaction, recommendation, sustainability, hotel industry, Portugal.

JEL Classification: M10.

Introduction

The relevance of the theme is fundamentally justified by the positive externalities associated by the theory to the short-term rental activity (Boutsioukis et al., 2019). The theory considers that the development of this activity causes several negative externalities – both at a local and national level –, namely: an increase in housing prices (Boutsioukis et al., 2019; Urquiaga et al., 2020; Wyman et al., 2020); an increase in the price of long-term rental (Boutsioukis et al., 2019; Urquiaga et al., 2020); an alteration in the characteristics of the neighbourhood (Nieuwland & Melik, 2020); and, a decrease in hotel revenue (Nieuwland & Melik, 2020; Yeon et al., 2020; Falk & Yang, 2020). However, some authors also recognize the existence of positive externalities resulting from the short-term rental activity, namely: job creation; an increase in the country's tax revenue; an increase in the disposable income for families and businesses (Boutsioukis et al., 2019). The recognition in the literature of these positive externalities justifies the carrying out of new studies from the perspective of the factors ensuring the sustainability of

this activity within a very unfavourable situation in terms of tourism due to the Covid-19 pandemic. This study aims to contribute to the Sustainable Development Goals (SDGs) numbers 8 (Decent Work and Economic Growth) and 12 (Responsible Consumption and Production).

The general objective of this study is to contribute to the knowledge about the satisfaction determinants for short-term rental customers. As specific objectives we can identify the following: to analyse the association between the characteristics of the accommodation and the satisfaction of its customers; to analyse whether the satisfaction of the short-term rental customer is associated with the recommendation of that accommodation; to analyse which satisfaction dimensions most influence overall satisfaction.

Several studies consider that customer satisfaction is a key factor for the future sustainability of hotels (Machado & Silva, 2018; Machado, 2019), however the satisfaction of short-term rental customers remains underexplored (Tussyadiah, 2016; Sainaghi, 2020). Studies already carried out in the hotel industry suggest that hotel characteristics, such as category, location, integration in a hotel

chain or in an economic group, may be determinants of customer satisfaction (Limberger et al., 2014; Machado & Silva, 2018; Machado, 2019). Tussyadiah (2016) suggests that the satisfaction determinants of short-term rental customers may be different from those associated with hotel customers, which justifies the realization of a new study to analyse whether the characteristics of the accommodation are also associated with customer satisfaction.

Another key factor for the future sustainability of hotels is the loyalty of their customers and their ability to recommend the hotel (Tussyadiah, 2016). The satisfaction of hotel customers is positively associated with loyalty and the recommendation of the hotel, which promotes an increase in revenue (Wang & Jeong, 2018). The association between the satisfaction and loyalty of hotel customers is already scientifically proven, however studies are needed to demonstrate this association in short-term rental customers (Tussyadiah, 2016), which justifies the realization of a new study to analyse the association between the satisfaction of short-term rental customers and their ability to recommend the accommodation.

The correlation between the level of overall satisfaction of hotel customers and the different dimensions of satisfaction has already been studied by Limberger et al. (2014). However, considering the satisfaction determinants of short-term rental customers may be different from those associated with hotel customers, as suggested by Tussyadiah (2016), the carrying out of a new study that analyses which satisfaction dimensions most influence the overall satisfaction of short-term rental customers is therefore justified.

The universe of this study was defined as follows: individuals residing in Portugal, of both genders, aged between 18 and 65, who stayed overnight in a short-term rental accommodation within the national territory, between August and September 2019. Data collection was carried out through an online survey, where 1,000 valid surveys were obtained, which ensures a margin of error of 3.1% for a 95% confidence level.

1. Literature review

The recent literature on hospitality and tourism addresses the phenomenon called sharing economy as originating in innovative business models, based on online sharing platforms (Jiang et al., 2020). This business model eliminates traditional intermediaries and makes the division between owners and consumers obsolete, since all users of these platforms can be peer-providers as asset suppliers for sale or rental, and peer-users as consumers of the products and services available on these platforms (Jiang et al., 2020). The phenomenon of the sharing economy has rapidly penetrated the hospitality and tourism industry in recent years, through the development of peer-to-peer online accommodation platforms, which allow anyone to offer private accommodations to their peers (Jiang et al., 2020). The traditional peer-to-peer market has recently changed with the increasing entry of companies into the market (Liu et al., 2020), which currently justifies the use of the more general concept of short-term rental.

Although customer satisfaction is considered by many authors to be a key factor for future hotel sustainability (Machado & Silva, 2018; Machado, 2019), the predictors of satisfaction of short-term rental customers' needs a deeper analysis (Tussyadiah, 2016; Sainaghi, 2020). Wang and Jeong (2018) surveyed 212 users of an online peer-to-peer platform and concluded that there is a positive association between the relationship with the host and customer satisfaction. Priporas et al. (2017) conducted interviews with 202 short-term rental customers in Thailand and concluded that there is a positive association between the characteristics of the accommodation and customer satisfaction. Sthapit and Jiménez-Barreto (2018) analysed the determinants of customer satisfaction for an online peer-to-peer platform and concluded that this is associated with the location of the accommodation and the relationship with the host. Satisfaction is greater when there is an interaction with the host and when the location of the accommodation is close to tourist attractions (Sthapit & Jiménez-Barreto, 2018). Jo et al. (2014) have identified two dimensions of service quality in guest houses affecting customer satisfaction, namely the staff and the facilities of the accommodation units. Interestingly, given the homely environment of guest houses which is propitious to the establishment of personal relationships among guests and with the hosts, the authors posit that those two dimensions have a functional as well as an emotional value for customers (Jo et al., 2014). Also taking guest houses as their object of study, Wang and Hung (2015) have identified five major factors influencing customer satisfaction. The most important factor was (i) value for money (price), followed by the (ii) homely atmosphere, (iii) cleanliness, (iv) location, and (v) room facilities (Wang & Hung, 2015). In their study of the factors influencing customer satisfaction in independent Bed & Breakfast (B&B) units, Hsieh and Lin (2010) identified two main dimensions of quality perceived by guests, namely the physical environmental quality and the personnel interaction quality. The former includes the perceived quality of the (i) equipment; (ii) décor and design; as well as of the (iii) ambience of the B&B unit (Hsieh & Lin, 2010). As to the latter, the identified factors were the (i) employees' expertise; and the (ii) employees' problem-solving skills (Hsieh & Lin, 2010). Tussyadiah's (2016) analysis of the factors determining guests' satisfaction in P2P accommodation suggests that guest to value fun and enjoyment above all other factors. The economic benefits, which includes the price and, to a lesser extent, the amenities offered by the property were also considered relevant factors influencing the guests' levels of satisfaction of guests. In contrast with previous research, results suggest that the location of B&B units does not influence customer satisfaction. Regarding the importance of social benefits to guests' satisfaction with their stays at a B&B, results indicate that they only have a positive influence on satisfaction in the context of room rentals, which involves cohabitation with the hosts.

Interestingly, the empirical research posits that social benefits do not influence satisfaction levels when it comes to house or apartment rentals, in which no interaction with hosts takes place.

Another key factor for future hotel sustainability is the loyalty of their customers and their ability to recommend the hotel (Tussyadiah, 2016). Hotel customer satisfaction is positively associated with hotel loyalty and recommendation, which promotes an increase in revenue (Wang & Jeong, 2018). However, very few studies analyse the association between customer satisfaction in short-term rentals and their potential in terms of recommending the accommodation (Tussyadiah, 2016). Priporas et al. (2017) and Wang and Jeong (2018) have concluded, through studies with short-term rental customers, that there is a positive association between their satisfaction and the intention to recommend the accommodation.

Although the previously mentioned studies show the importance of customer satisfaction in short-term rentals, very few analyse which dimensions affect the most the overall satisfaction of this type of customers. Limberger et al. (2014) analyse the correlation between the overall level of satisfaction of 660 customers of hotels located in Brazil, and listed on TripAdvisor, and the following satisfaction dimensions: value, in the sense of the cost/benefit ratio; location; sleep quality; quality of the rooms; cleanliness; service quality. The satisfaction dimensions that affect the most the level of overall satisfaction are as follows (Limberger et al., 2014): room and service quality, and value or cost/benefit ratio. The relative importance of each of these satisfaction dimensions depends on the category of the hotel (Limberger et al., 2014): sleep quality and cleanliness are only associated with customer satisfaction in 3 and 4-star hotels, while location is not associated with the level of satisfaction in any hotel category. Tussyadiah (2016) analyses the factors that influence the satisfaction of short-term rental customers in the USA, having conducted a survey of 644 users of short-term rentals. Tussyadiah (2016) concludes that satisfaction is positively associated with the cost/benefit ratio – or economic benefits, considering it an important factor for the

future sustainability of short-term rentals, as it affects satisfaction and future purchase intention, i.e., loyalty. The location of the accommodation is also associated with customer satisfaction and their future loyalty, in the sense that the proximity to tourist attractions increases satisfaction and loyalty (Tussyadiah, 2016). However, satisfaction is negatively associated with the environmental benefits of the accommodation, i.e., the greater the environmental sustainability practices of the accommodation, the lower the satisfaction of its customers (Tussyadiah, 2016). This author considers that these results may be biased by the fact that the study was carried out in only one country, recommending that further studies on the satisfaction and loyalty of short-term rental customers be carried out in other countries (Tussyadiah, 2016).

2. Methodology

The first specific objective of this study is to analyse the association between customer satisfaction and two characteristics of the accommodation (Figure 1): accommodation type and neighbourhood. The revised literature makes it possible to identify the characteristics of hotels as determinants of customer satisfaction, which justifies analysing the type of accommodation and the neighbourhood as factors that affect the satisfaction of short-term rental customers.

The second objective of this study is to analyse whether the overall satisfaction of the short-term rental customer is associated with the recommendation of that accommodation (Figure 1). The revised literature indicates that the satisfaction of hotel guests is positively associated with loyalty and the hotel recommendation, which promotes an increase in revenue (Tussyadiah, 2016; Wang & Jeong, 2018). This justifies analysing the association between the satisfaction of short-term rental customers and their ability to recommend the accommodation.

The third objective of this study is to analyse which satisfaction dimensions most influence overall customer satisfaction (Figure 1). The revised literature allows us to identify the existence of several satisfaction dimensions, such as price, location, cleanliness, decoration, equipment,
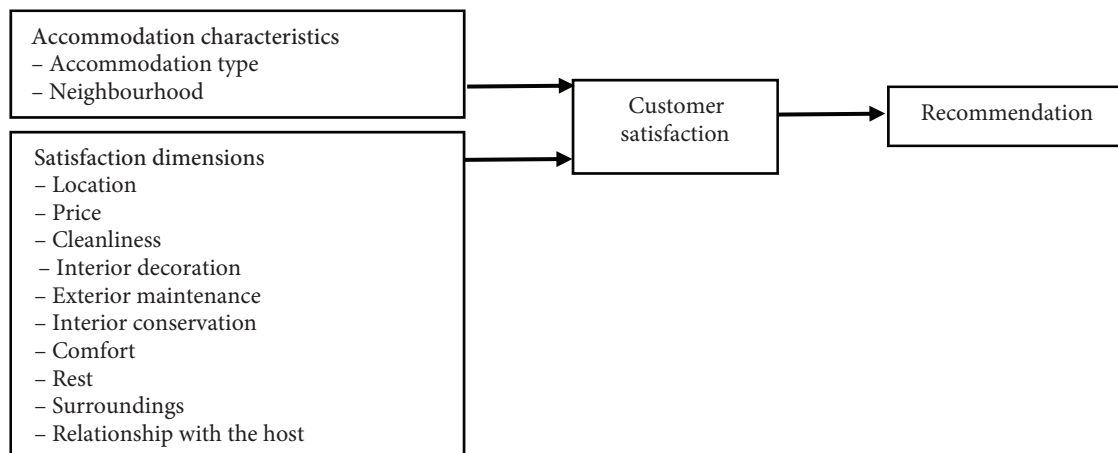

Figure 1. Research design

relationships with the hosts, which affect the overall satisfaction of hotel customers (Hsieh & Lin, 2010; Limberger et al., 2014; Wang & Jeong, 2018). This justifies analysing the dimensions of satisfaction in the short-term rental industry. The dimensions of satisfaction studied are the following: location, price, cleanliness, decoration, interior conservation, exterior maintenance, comfort, rest, surroundings, and relationship with the hosts.

To meet the objectives of this study, we formulated three research questions. The first was to analyse the associations between the characteristics of the accommodation and the satisfaction of its customers, the second was to analyse the association between satisfaction and the recommendation of the accommodation, and the third was to analyse which satisfaction dimensions most influence overall satisfaction:

– Research Question 1 – Is there an association between the characteristics of the accommodation and the satisfaction of its customers?
– Research Question 2 – Is there an association between the satisfaction of short-term rentals customers and the recommendation of that accommodation?
– Research Question 3 – What are the satisfaction dimensions that most influence the short-term rental customer overall satisfaction?

Data collection was carried out through an online survey, using a panel sampling, during the months of August and September 2019. The universe of this study included individuals residing in Portugal, of both genders, aged between 18 and 65, who stayed overnight in short-term rental accommodations within the national territory, between August and September 2019. Considering the absence of specific data on the composition of national users of short-term rentals, we assumed the entire Portuguese population met the criteria described above as eligible to be included in the sample. The survey was accessed by 3843 participants, of which 987 chose not to respond. Regarding the 2856 who started the survey, 1,480 were excluded for not meeting the selection criteria (incidence rate of 48%); 376 started it, but did not complete the questionnaire (dropout rate 13%); and 1,000 completed the questionnaire (valid responses), for a response rate of 35%, and a margin of error of 3.1% for a 95% confidence level.

The 1,000 short-term rental customers surveyed have the following demographic characteristics: 40% are male and 60% female; 32% are between 18 and 29 years old, 57% are between 30 and 49 years old, and 11% are between 50 and 65 years old.

Out of a total of 3843 participants who accessed the questionnaire, 987 chose not to answer and 2856 started filling it out. 1,480 were excluded for not meeting the selection criteria (48% incidence rate); 376 started but did not complete the questionnaire (13% dropout rate); 1,000 completed the questionnaire (valid responses), and a 35% response rate was obtained. This study had a response rate of 35% (of the 2856 participants who started the questionnaire, 1,000 valid responses were obtained). On average, it took 21 minutes to complete the questionnaire.

3. Results analysis and discussion

3.1. Accommodation characteristics and customer satisfaction

The satisfaction of short-term rental customers was assessed using a 5-point Likert scale, considering 1 as not at all satisfied and 5 as very satisfied. The average satisfaction value is 4.29, and the median and the mode are 4, which translates into a high level of customer satisfaction. To analyse the association between satisfaction and other variables, the 5-point Likert scale was transformed into a nominal variable called satisfaction, with four categories of response: dissatisfied, indifferent, satisfied and very satisfied. The results analysis of this variable allows us to conclude that only 2% of the respondents are dissatisfied with the accommodation (n = 19), 47% consider themselves satisfied (n = 472) and 42% very satisfied (n = 421).

Regarding the characteristics of the accommodation, the following variables were analysed: type of accommodation and neighbourhood. The neighbourhood variable was analysed through a question about the existence of problems with the accommodation's neighbours. The results obtained show that the majority (97%) of short-term rental customers do not report problems with the neighbours (n = 971). Regarding the type of accommodation, three categories of response were identified: apartment, used by 52% of the customers (n = 516); individual house, used by 33% of the customers (n = 330); and another type of accommodation (15%), which includes bungalows (n = 95) among other types not specified.

The association between the type of the accommodation and customer satisfaction is shown in Table 1. The results obtained allow us to conclude that most dissatisfied customers (58%) used an apartment, while only 45% of very satisfied customers used this type of accommodation.

Table 1. Accommodation type and satisfaction

Satisfaction	Accommodation type			TOTAL
	Apartment	Individual house	Other	
Dissatisfied	11	5	3	19
Indifferent	49	26	13	88
Satisfied	265	137	70	472
Very satisfied	191	162	68	421
TOTAL	516	330	154	1000

Figure 2 illustrates graphically the association between the type of the accommodation and satisfaction, allowing us to conclude that there is some heterogeneity between satisfaction by accommodation type: only 37% of apartment customers are very satisfied with their chosen accommodation, while 48% of individual house customers have the same level of satisfaction; most apartment customers are only satisfied with their chosen accommodation (51%).

The objectives that were defined require an analysis of the association between the behaviour of these two

nominal variables, so the applicable test is the Chi-Square independence test (Siegel & Castellan, 1988). This test is based on a table presenting a cross of the different response categories for each variable. There the expected absolute frequencies for each cell are calculated based on the theory of probabilities and the null hypothesis defined below. The hypotheses for this test are the following (Mood et al., 1974): null hypothesis – the variables are independent; alternative hypothesis – the variables are not independent. The Chi-square independence test has a value of 12.432 with a p-value of 0.053, which allows us to reject the test's null hypothesis and accept the alternative hypothesis of the existence of an association between the accommodation type and the satisfaction of its customers, with a type I error of 10%. To measure the intensity of this relationship, we used the Cramer's V coefficient and obtained a value of 0.079 for a p-value of 0.053, which can be considered a weak association.

The association between the neighbourhood and the satisfaction of the short-term rental customer is shown in Table 2. The results obtained allow us to conclude that the majority of very satisfied customers did not have any problems with the neighbours (98%); 21% of the dissatisfied customers had problematic neighbours, while only 2% of the very satisfied customers had the same type of neighbours.

Figure 3 illustrates graphically the association between neighbourhood and satisfaction, which allowed us to conclude that there is some heterogeneity between the behaviour of both variables: 14% of customers with a problematic neighbourhood are dissatisfied with the accommodation, while only 2% of customers without problems with the neighbourhood have the same dissatisfaction; 48% of

Table 2. Neighbourhood and satisfaction with the accommodation

Satisfaction	Neighbourhood		TOTAL
	Problematic	No problems	
Dissatisfied	4	15	19
Indifferent	6	82	88
Satisfied	9	463	472
Very satisfied	10	411	421
TOTAL	29	971	1000

customers with no problems with the neighbourhood are satisfied, while only 31% of customers with problems with the neighbourhood have the same level of satisfaction; 42% of customers with no problems with the neighbourhood are very satisfied, while only 34% of customers with problems with the neighbourhood have the same level of satisfaction.

To prove the association between these two variables, we used the Chi-square independence test, which presented a value of 29.097 with a p-value of less than 0.001. This allowed us to reject the test's null hypothesis and accept the alternative hypothesis of the existence of an association between the neighbourhood of the accommodation and the satisfaction of its customers, while accepting of a type I error of 1%. To measure the intensity of this relationship, we used Cramer's V coefficient, where a value of 0.171 was obtained for a p-value of less than 0.001, which can be considered a weak association.

The results obtained with this research question contribute to existing knowledge on customer satisfaction in
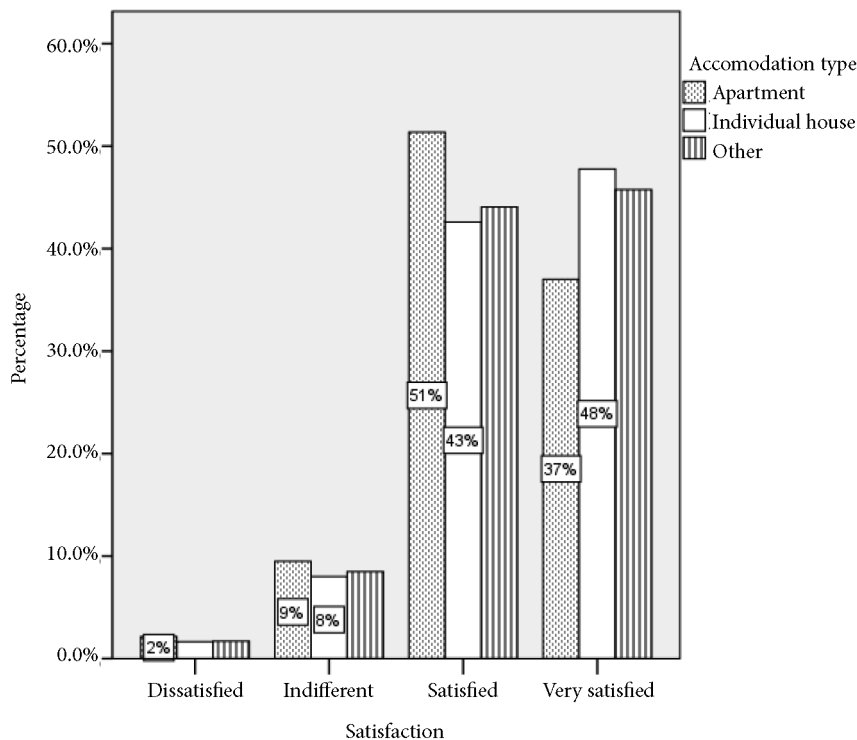

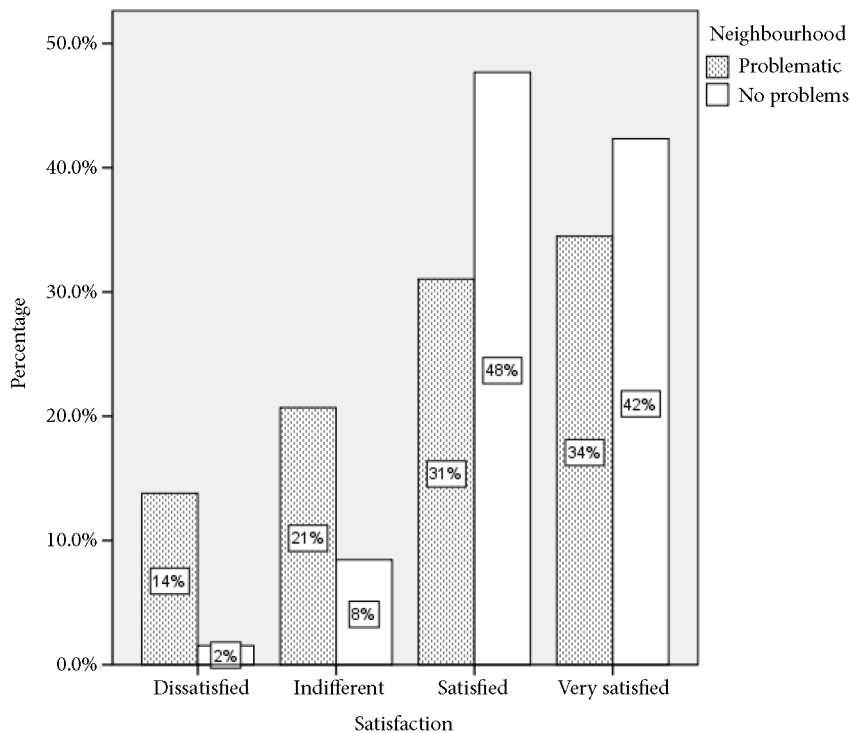Figure 2. Accommodation type and satisfaction

Figure 3. Neighbourhood and satisfaction with the accommodation

short term rentals. More specifically, previous research recognized the need for the identification of the predictors of satisfaction of short-term rental customers (Tussyadiah, 2016; Sainaghi, 2020). Accordingly, our results reveal that there is an association between the accommodation characteristics and the customer satisfaction, in the following sense: the satisfaction of customers of isolated houses is proportionally higher than the satisfaction of customers of apartments; the satisfaction of customers of accommodations with a problematic neighbourhood is proportionally lower than the satisfaction of customers who did not have problems with the accommodation's neighbourhood.

3.2. Recommending the accommodation

The second research question aims to analyse whether customer satisfaction generates a desire to recommend the accommodation. The recommendation variable was measured using a 5-point Likert scale, where an average of 4.38, and a median and a mode of 5 were obtained. To analyse the association between recommendation and customer satisfaction, the 5-point Likert scale was transformed into a nominal variable, called recommendation, with three response categories: does not recommend, indifferent, recommends. The analysis of the results of this variable allowed us to conclude that only 3% of the respondents do not recommend the accommodation (n = 28), 8% consider themselves indifferent in term of recommendation (n = 81) and the majority (89%) recommends the accommodation (n = 891).

The association between satisfaction and the recommendation of the accommodation is shown in Table 3.

The results obtained allow us to conclude that 43% of the customers who do not recommend the accommodation are dissatisfied, while 47% of customers who recommend the accommodation are very satisfied.

Table 3. Satisfaction and recommendation of the accommodation

Recommen-dation	Satisfaction				TO-TAL
	Dissatis-fied	Indiffe-rent	Satisfied	Very satisfied	
Does not recommend	12	14	1	1	28
Indifferent	2	30	45	4	81
Recommends	5	44	426	416	891
TOTAL	19	88	472	421	1000

Figure 4 illustrates graphically the association between satisfaction and the recommendation of the accommodation, allowing us to conclude that there is some heterogeneity between the behaviour of both variables: the majority of satisfied (90%) and very satisfied customers (99%) recommend the accommodation, while the majority (63%) of dissatisfied customers do not recommend the accommodation.

To prove the association between these two variables we used the Chi-square independence test, which presented the value of 451.712 for a p-value of less than 0.001. This allowed us to reject the test's null hypothesis and accept the alternative hypothesis of the existence of an association between customer satisfaction and the
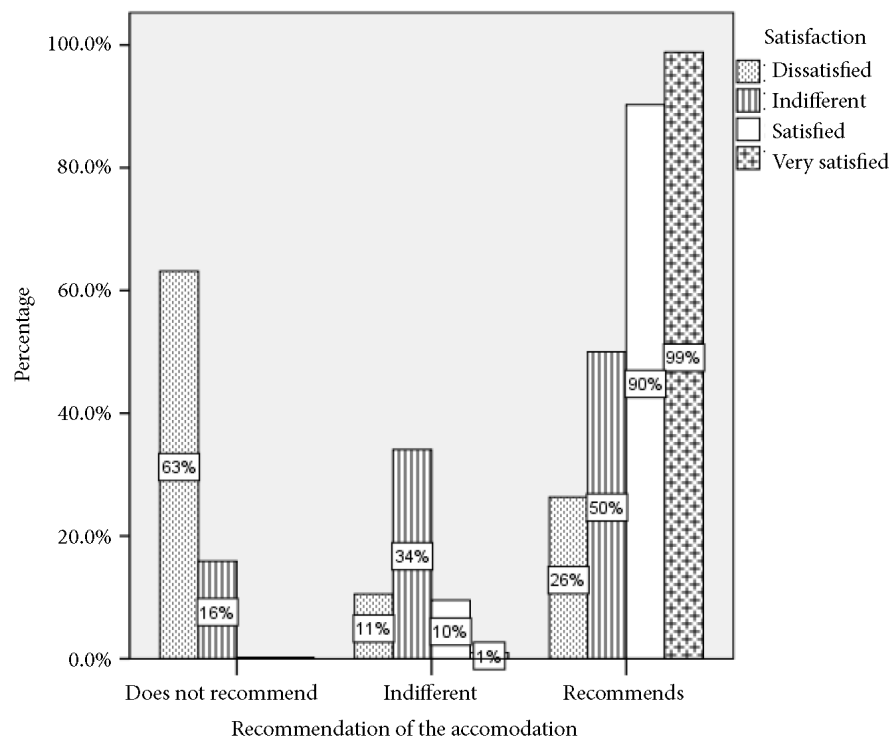
Figure 4. Satisfaction and recommendation of the accommodation

recommendation of the accommodation, while accepting a type I error of 1%. To measure the intensity of this relationship we used the Cramer's V coefficient, where we obtained a value of 0.475, for a p-value of less than 0.001, which can be considered a strong association.

The intensity of the association found makes it relevant to analyse its direction. For this, we used a measure of association based on the proportional reduction of the forecast error, Goodman and Kruskal's Lambda, as it provides additional information about the direction of the association. Goodman and Kruskal's Lambda presents a substantial advantage when compared to Cramer's coefficient, in that it allows us to define the direction of the association between the variables, i.e., the independent and the dependent variable (Siegel & Castellan, 1988). The value of this measure is also between 0 and 1, but its calculation is based on the proportional reduction of the forecast error. The value 0 means that knowledge of the independent variable does not help to predict the category of the dependent variable; the value 1 means that this knowledge allows us to reduce by 100% the forecast error on the behaviour of the dependent variable (Siegel & Castellan, 1988). This test's hypotheses are as follows (Siegel & Castellan, 1988): null hypothesis – the Lambda value is 0; alternative hypothesis – the Lambda value is different from 0. We used Goodman and Kruskal's Lambda to analyse the association between customer satisfaction and the recommendation of the accommodation. It presented a value of 0.064, when considering the recommendation variable as dependent. Knowledge of the satisfaction variable category allows a reduction of 6.4% in the forecast

error over the recommendation variable category. The test results are statistically significant, for a 10% error, given that its p-value is 0.089, and confirm the direction of the association, i.e., it is satisfaction that influences recommendation.

The results obtained with this research expand existing knowledge by responding to unanswered topics in previous studies related with the sustainability of short-term rental businesses (c.f. Tussyadiah, 2016; Wang & Jeong, 2018). As such, our findings allowed us to validate the importance of the satisfaction of the short-term rental customer in terms of recommending the accommodation and this activity's sustainability.

3.3. Satisfaction dimensions of the short-term rental customer

In order to analyse which dimensions most influence the overall satisfaction of short-term rental customers, ten specific satisfaction dimensions were analysed, namely: location, interior decoration, interior conservation, price, cleanliness, exterior maintenance, comfort, rest, external surroundings, and relationship with the hosts. All satisfaction dimensions were analysed using a 5-point Likert scale, where an average satisfaction value greater than 3 was obtained for all variables. Using the average to compare the level of satisfaction, the results obtained allowed us to conclude that the three highest levels of satisfaction are obtained with rest (average = 3.43), cleanliness (average = 3.33) and location (average = 3.30). The three lowest levels of satisfaction are obtained with exterior maintenance (average = 3.02), interior decoration (average =

3.03) and price (average = 3.09). With a level of intermediate satisfaction, we found the following dimensions: surroundings (average = 3.15), relationship with the hosts (average = 3.16), interior conservation (average = 3.17) and comfort (average = 3.22).

In addition to the satisfaction dimensions already analysed individually, it is relevant to study their influence on the overall satisfaction of the short-term rental customer. For this we used Goodman and Kruskal's Lambda obtaining the results shown in Table 4. The results obtained allowed us to conclude that there is a statistically significant association, for an error of less than 1%, among the ten satisfaction dimensions analysed and the overall satisfaction of the short-term rental customer, with the following direction: each satisfaction dimension conditions the overall customer satisfaction. The three dimensions that most affect the overall satisfaction of short-term rental customers are the state of conservation of the interior of the accommodation (Lambda = 0.491), the comfort provided to the customer (Lambda = 0.447), and the cleanliness of the space (Lambda = 0.443). In contrast, the dimensions that least influence overall customer satisfaction are price (Lambda = 0.279), location (Lambda = 0.309) and the surroundings (Lambda = 0.364).

Table 4. Satisfaction dimensions

Satisfaction dimensions	Goodman and Kruskal's Lambda	
	Value: overall satisfaction as dependent variable	P-value
Interior conservation	0.491	< 0.001
Comfort	0.447	< 0.001
Cleanliness	0.443	< 0.001
Interior decoration	0.419	< 0.001
Exterior maintenance	0.402	< 0.001
Relationship with the host	0.396	< 0.001
Rest	0.392	< 0.001
Surroundings	0.364	< 0.001
Location	0.309	< 0.001
Price	0.279	< 0.001

The results obtained with the third investigation question contributes to extend existing knowledge to the satisfaction dimensions analysed in hotels by Limberger et al. (2014) and in short-term rental accommodations by Tussyadiah (2016), as they allow us to conclude that the highest dimensions of satisfaction regarding the accommodation are found in the following variables: rest provided, level of cleanliness, and location. By doing so, our study respond to the challenge posed by Tussyadiah (2016) those satisfaction determinants of short-term rental customers may be different from those associated with hotel customers. Furthermore, this study completes previous research findings (c.f. Limberger et al., 2014; Machado & Silva, 2018; Machado, 2019) in relation to the determinants of

customer satisfaction (e.g. category, location, integration in a hotel chain).

On the other hand, the lowest levels of satisfaction are obtained with exterior maintenance, interior decoration, and price. These results can be used as a guide for short-term rental hosts to identify the need for improvement actions, namely in terms of interior decoration and exterior maintenance of the accommodation. This study also shows that it is necessary to combine these conclusions with the impact of these dimensions on the overall satisfaction of short-term rental customers. This combination allowed us to conclude the following: of the three dimensions with the highest level of satisfaction, cleanliness is the one that has the greatest influence on the overall level of customer satisfaction; of the three dimensions with the lowest level of satisfaction, price has the least influence on the overall customer satisfaction.

Conclusions

This study has three specific objectives: to analyse the association between the characteristics of the accommodation and the satisfaction of its customers; to analyse whether the satisfaction of short-term rental customers is associated with the recommendation of the accommodation; to analyse which satisfaction dimensions most influence overall satisfaction.

Regarding the characteristics of the accommodation, two variables were analysed: accommodation type and neighbourhood. Regarding the type of the accommodation, the results obtained allowed us to conclude that the satisfaction of customers of isolated houses is proportionally higher than the satisfaction of apartment customers. Regarding the neighbourhood, the results obtained allowed us to conclude that the satisfaction of customers with problematic neighbours is proportionally lower than the satisfaction of customers who did not have problems with the neighbourhood.

Regarding the second specific objective, the results obtained allowed us to conclude that there is a strong association between customer satisfaction and the recommendation the accommodation, in the following sense: the higher the level of satisfaction, the greater the probability of customers recommending the accommodation.

Regarding the last objective, the results obtained allowed us to conclude that the highest satisfaction dimensions refer to the rest provided, the level of cleanliness, and the location of the accommodation. On the other hand, the lowest levels of satisfaction are found in price, interior decoration, and exterior maintenance. The analysis of the impact of these dimensions on the overall satisfaction of the short-term rental customer, allowed us to conclude that the three dimensions that most affect overall satisfaction are the state of interior conservation of the accommodation, the comfort provided to the customer, and the cleanliness of the space. In contrast, the dimensions that least influence overall customer satisfaction are price, location, and the surroundings. These conclusions allowed

us to suggest guidelines to the short-term rental hosts, so that they can concentrate more efforts on the satisfaction dimensions that most influence overall satisfaction, namely the interior conservation of the accommodation, the comfort provided and the cleanliness of the space.

The results of this study contribute to existing knowledge on customer satisfaction in short term rentals, an underexplored topic. By doing so, this research respond to previously identified gaps in the literature (c.f. Tussyadiah, 2016). Furthermore, we extend this knowledge by identifying the specific factors that contribute to the customer satisfaction, namely the interior conservation, comfort, cleanliness, interior decoration, exterior maintenance, among other. This respond to the challenge of Sainaghi (2020) that researchers should go deeper in the precedents of customer satisfaction in short term rentals.

The main limitations of this study are the following: the fact that the method of data collection used did not allow the clarification of doubts regarding the questions asked; and the fact that only two characteristics of the accommodation were analysed. However, we consider that this study presents three contributions. The first occurs in the demonstration that the type of accommodation and the neighbourhood can be considered as factors affecting the satisfaction of short-term rental customers. The second contribution is validating the importance of customer satisfaction in terms of recommending the accommodation. The last contribution is identifying the importance of the different satisfaction dimensions as determinants to the overall satisfaction of the short-term rental customer.

We suggest that further studies be carried out to analyse other characteristics of the accommodation, namely its capacity, integration in a condominium, availability of a swimming pool, among others, and their influence on customer satisfaction.

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