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Hotel or rented flat: A profile of purchasers of accommodation services in Warsaw

Ewa Dziedzic[a]

[a] SGH Collegium of World Economy in Warsaw, Institute of International Economic Policy, Tourism Economy Research Unit, https://orcid.org/0000-0001-9834-4458, e-mail: edziedz@sgh.waw.pl

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ABSTRACT

The spreading of short-term flat rentals has brought about changes in the accommodation market, often seen as a threat to traditional accommodation providers. This is particularly true in large cities which have a considerable accommodation capacity and also a large stock of flats. The aim is to indicate to what extent short-term rentals are influencing the tourist accommodation market in Warsaw. The idea behind the study is the assumption that the differences revealed between those using hotels or such flats will provide an answer to the question of the influence of the latter on Warsaw»s tourist market. Such information should be useful in the marketing activities of interested parties and in the policies of the city authorities. Analysis of the data from a survey carried out in 2021 using the CHAID decision tree indicates that the choice of accommodation type was mainly determined by situational variables. The only statistically significant demographic predictor relates to a greater interest in flats among those aged up to 34 years old. Planned expenditure per person per overnight stay proved to be a statistically significant predictor only for non-residents of Poland, with the cut-off amount set higher than the median interval for this segment. Flats were more often chosen by people travelling in a larger party or alone and those planning to stay longer than four nights, thus looking for a different offer than that of traditional city hotels.

KEYWORDS

short-term rental, segmentation, hotel users, short-term rental users, Warsaw tourism market, CHAID decision tree, COVID-19 effects on tourism

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1. Introduction

Changes in consumer expectations and the emergence of new offers are a feature of any developing market. A special situation is the emergence of so-called disruptive innovations which open up a market to new players, on both demand and supply sides (Christensen, Raynor, McDonald, 2015). The popularity of online platforms that mediate the renting of rooms and flats to tourists, usually identified with the sharing economy and Airbnb, is often seen as such an innovation (Guttentag, Smith, 2017; Prayag, Ozanne, 2018). Its success has attracted the attention of both potential imitators, existing market participants and researchers (Guttentag, Smith, 2017; Prayag, Ozanne, 2018). Several of the most common themes can be identified in academic and popular publications: the threat to traditional accommodation providers, an increase in housing prices, touristification, the loss of neighbourhood ties, and the development of the grey economy (Jaremen,

Nawrocka, Żemła, 2020; Pawlicz, 2019). On the positive side, an increase in the accessibility of tourism for certain market segments, better utilisation of housing resources, an increase in residents' incomes, and greater flexibility in the supply of accommodation services are mentioned (Dolnicar, 2019; Pawlicz, Prentice, 2021).

One of the main issues addressed in the research is the question of whether and to what extent the services of brokerage platforms are a threat to traditional service providers, primarily hotels. The issue of competition or complementarity between hotel services and those offered by flats is also a subject of this study whose aim is to indicate to what extent the availability of flats for short-term rent affects the market for accommodation services in Warsaw. The idea behind the study is the assumption that the revealed differences or similarities between users of hotel or rented flat services will make it possible to answer the question of the influence of the latter on Warsaw's tourist market, providing information useful in the marketing activities of interested entities and in the policies of the city authorities.

Renting flats to tourists is usually equated with the sharing economy but this is debatable for several reasons. Firstly, the provision of accommodation is generally paid; free exchange or hospitality programmes are poorly developed – among the nine platforms listed by Adamiak, only two mediate free exchange (Adamiak, 2021), and Airbnb, a symbol of the sharing economy has in fact become a commercial corporation (Dogru et al., 2020c). Secondly, housing is often a form of investment and the provision of accommodation is a type of economic activity for the owners or is handed over to specialised companies (Adamiak, 2022; Cocola-Gant et al., 2021). For this reason, the term 'short-term rental' is more appropriate and this work uses this term.

2. Literature review

Renting flats or rooms to tourists is nothing new, but the emergence of online intermediary platforms, combined with the ideology of the sharing economy and globalisation, has resulted in a surge of interest in the phenomenon. This is accompanied by a growing number of academic publications, which themselves have become the subject of several literature reviews (Belarmino, Koh, 2020; Dolnicar, 2019; Hati et al., 2021; Hossain, 2020; Prayag, Ozanne, 2018; Sainaghi, 2020; Sainaghi, Baggio, 2020a). From the point of view of the purpose of this study, publications on the impact of rental housing on the accommodation market and the characteristics of its consumers are of particular interest.

Articles dealing with rental housing can be divided into two groups: those describing the situation in selected cities and those providing an overview, summarising the results of different studies or covering a wider area or a larger number of locations, primarily large cities. The results of these studies are not conclusive and to some extent depend on which metrics are used to measure the impact of short-term rentals on the hotel market: occupancy rate, ADR (Average Daily Rate) or RevPAR (Revenue per Available Room). Yang et al. (2022) collated the results of 13 studies, most of which (7) focused on the United States, while others analysed the situation in Barcelona, Paris, London, Busan, Tokyo and cities in Norway. Their meta-analysis suggests that, in general, the impact of short-term rentals on hotels is small, and this applies to all indicators of hotel performance. In a different vein, the results of their study are interpreted by Dogru et al. (2020a) who, after conducting analyses for the entire United States and selected cities from other countries, indicated that the negative impact of short-term rentals on hotel performance is widespread, not only geographically, but also in terms of hotel category and type (Dogru et al., 2020b). At the same time, they point out that previous studies were not authoritative because they analysed data on the early stages of the phenomenon, when its scale was relatively small.

In all the studies discussed, the authors analysed the phenomenon from the supply side using panel data and regression models, in which the independent variable was the scale of Airbnb listings in a given location and the dependent variables were indicators describing the performance of hotels. These quantitative analyses show the possible effects of the growth of short-term rentals but do not provide information on the nature of competition between them and traditional hotels. An attempt to fill this gap was made by Jiang et al. who interviewed executives from selected hotels in China (Jiang, Law, Li, 2020). Analysing their statements, they concluded that the responses of hotel managers depend on the category of the hotel and its status (independent, in an international or national chain); however the key to maintaining their position should be an active use of the internet and leaving employees more freedom to individualise the services.

A different approach to the issue of competition between traditional service providers and short-term rentals was presented by Sainaghi and Baggio (2020b) who analysed the situation in Milan, the business capital of Italy, a fashion centre and a popular tourist destination. Inbound tourism to this city includes both business and pleasure travel. Both types are characterised by differing seasonality and distribution patterns through a week. According to the authors, an analysis of these patterns should help to find out if hotels and short-term rentals are direct competitors. Their approach is based on the assumption that leisure travellers are more interested in Airbnb than business ones. The results suggest that with regard to

business travel, there is no substitution between hotels and short-term rentals, but that it is clear in the case of leisure travel.

The second theme addressed in this work, i.e. the characterisation and segmentation of short-term rental service users and how this relates to the profile of hotel service users, is also reflected in academic publications. Sainaghi (2020) in his review of the literature on sharing accommodation services points out that research focuses mainly on the motivations and characteristics of its users, especially those that distinguish them from hotel customers. Most often these are online surveys with a limited sample size or analyses of users' online postings (Bagieński, Chlebicka, 2019; Lutz, Newlands, 2018; Young, Corsun, Xie, 2017). These studies are exploratory in nature, and the results suggest that in the realm of value sought by users of rented flats, price comes first. As for the rest of expectations, the answers have been influenced by the themes covered in questionnaires that mostly concern motivations related to the idea of the sharing economy (Sainaghi, 2020; Young, Corsun, Xie, 2017). Segmentation studies focused on expectations about stays in hotels or flats in relation to buyer characteristics (Lutz, Newlands, 2018; Mody, Suess, Lehto, 2019). According to Sainaghi (2020), however, the segmentation of purchasers of short-term rental services is insufficiently understood, and particularly true for those using paid services of this type. This includes the characteristics of the users, as well as the differences or similarities between them and hotel customers.

An important topic addressed in research on short-term rentals is an analysis of its distribution at the scale of selected localities (Adamiak, 2021, 2022; Gutierrez et al., 2017; Rabiei-Dastjerdi, McArdle, Hynes, 2022) or within countries (Adamiak, 2022; Kowalczyk-Anioł, Pawlusiński, 2018) and Warsaw has also been a subject of such studies (Derek, Dycht, 2017; Gyódi, 2017, 2019). The authors of some of these investigations interpret the results obtained in the context of the gentrification of urban space, competition with traditional accommodation, impact on housing prices and long-term rentals (Cocola-Gant, Gago, 2021; Gutierrez et al., 2017; Rabiei-Dastjerdi, McArdle, Hynes, 2022). The publications postulating regulations restricting short-term rentals (Chen, Huang, Tan, 2021; Falk, Yang, 2021; Yeon, Song, Lee, 2020) are in line with these themes. The opinions presented are varied and they are not always sufficiently documented. The media play a not insignificant role in shaping the negative image of short-term rentals, while residents do not have such a clear-cut attitude. The results of a study conducted by Mody, Suess and Dogru (2021) suggest rather that it is positive, and that the problems that arise are of a micro-geographical character and should be addressed at this scale.

The COVID 19 pandemic added a new impetus to research on short-term renting, and interest focused on its quantitative and spatial impact on the phenomenon (Adamiak, 2021, 2022; Benítez-Aurioles, 2021; Gyódi, 2021; Kacprzak, 2021; Romano, 2021).

It is worth noting that the vast majority of publications, especially those addressing the issue from a quantitative side, are based on Airbnb data and generally focus on this platform. This is to some extent understandable and justified for practical reasons (Adamiak, 2022), but it limits the scope of the analysis. This is particularly true in terms of narrowing the perspective concerning the direction of accommodation market development, as well as viewing the motivations and behaviour of flat renters primarily in the context of the sharing economy.

3. Background to the study – Warsaw as a tourist city

The "Tourism Policy of the Capital City of Warsaw" (City of Warsaw, 2020) is the basic document defining the directions of tourism development in the city. It assumes that tourism is part of the city's development strategy and postulates, inter alia, building marketing communication around selected products referring to the history of the city, MICE (Meetings, Incentives, Conferences, Exhibitions) and city breaks, hence it is an offer aimed at various market segments. Warsaw is one of the cities with a mixed tourism model: business tourism is dominant in April-June and September-November, and arrivals for pleasure and other personal reasons in July and August and partly in September.

Based on the results of the survey from which the data used in this study were derived, it was estimated that 10.1 million tourist arrivals took place in 2019, of which 28% were of those non-resident in Poland, while in 2021, there were 5.1 million tourist arrivals (a drop by 49%), of which 24% were non-resident (City of Warsaw, 2020). In 2019 arrivals to accommodation establishments with more than 10 beds amounted to 3.8 million and to 2 million in 2021 (a decrease by 47%). In 2021, these establishments had 37,600 beds, 84% of which were hotels (Statistical Office in Warsaw, 2022).

An important difference between rented accommodation and hotels is the availability of additional services and facilities in the latter. In 2021, 100 (58%) tourist accommodation establishments were prepared to host conferences. Among hotels, it was 75% (75 establishments). In 83% of the venues with conference facilities, technical support was provided in addition to equipment. Wi-Fi on the premises was provided by 68% of tourist accommodation establishments, including 81% of hotels. Concerning sports and leisure facilities, tourist accommodation establishments most often had

a gym – 41 (24%) and a sauna – 35 (20%). Spa treatments were offered in 18 (10%), the same for rehabilitation, and there was an indoor swimming pool in 12 (7%) facilities (Statistical Office in Warsaw, 2022). An analysis of the data published by STR (Smith Travel Research) shows that during the period covered by the Warsaw Tourist Office (SBT) survey (June-December 2021), the average room-price (ADR) in Warsaw from June to August was lower than the overall average for selected large cities in Poland, however from September 2021, Warsaw took the lead and maintained it until the end of the year (Warsaw Convention Bureau, 2022).

Information on rental accommodation is much more modest and incomplete. Airbnb's offer is relatively the best described, while information on flats provided on other platforms is patchy (Adamiak, 2022; Pawlicz, Prentice, 2021). Determining the number of such flats and their distribution would require collecting data from all platforms and then eliminating duplicate listings. In addition, some of the accommodation provided is only available periodically. Adamiak estimated that in Warsaw, in July 2021, 15,700 bed-places were made available on Airbnb and Vrbo platforms, which meant 0.88 bed-places per 1000 inhabitants, and was a much lower ratio than analogous ones for Kraków (2.33) or the Tricity: Gdańsk, Sopot, Gdynia (2.88). In terms of the absolute number of beds, it was less than in Kraków (18,100), or Tricity (22,400) (Adamiak, 2022). In 2020, during the period of the greatest constraints related to the COVID-19 pandemic, the number of flats on offer decreased by 35% (Adamiak, 2022).

A review of the listings available on TripAdvisor (September 2022) suggests that much of the offer is located around the Old Town and in the city centre. Flats available on Booking.com (in mid-October 2022 it was possible to make bookings at 544 properties) were also located mainly in the centre, although there were also proposals for flats in several other districts. On the Nocowanie.pl platform, 214 offers were available in and around Warsaw. In the case of the latter, many offers were labelled "Top Host", indicating that these are offers managed directly by the owners.

The controversy surrounding short-term rentals prompted the Warsaw authorities to conduct a survey among residents on their perception of tourism. The survey was conducted using the CAPI (Computer-Assisted Personal Interviews) technique in 2019 and 2021. One of the questions concerned short-term rentals (Airbnb) and residents' attitudes towards this phenomenon. In 2021 9% of Warsaw residents admitted that there were flats or houses rented out to tourists in their immediate vicinity (+6 percentage points compared to 2019). Slightly more than half of them (55%; +3 p.p.) believe that this phenomenon had a positive impact on their daily life, while 42% state that they were indifferent. In 2019, none of the respondents assessed this phenomenon negatively, in 2021 2% of respondents felt that it negatively affected their living conditions (City of Warsaw, 2021).

4. Methodology of the study

This study uses survey data made available by the Warsaw Tourist Office (SBT), from a survey of tourists visiting Warsaw in 2021. Data used to characterise the accommodation market segments were taken from the survey in 2021, which was the first year when larger-scale tourism was possible following the outbreak of the COVID-19 pandemic. Data from the 2019 survey was used only to learn if the pandemic had altered tourists' behaviour concerning accommodation during visits to Warsaw.

The survey commissioned by SBT is a field survey conducted at 11 selected locations in Warsaw. These places are conventionally referred to as "attractions", "gateways" (Central Railway Station and Chopin Airport) or "tracts" (selected places popular among tourists). These were the same in both surveys which were conducted in weekly 'waves' from April to November 2019, and from May to December in 2021. The survey uses a systematic random sampling scheme, but it is impossible to discover whether this scheme was always followed. The questionnaire covers a wide range of questions, including type of accommodation used, purpose of travel, etc. The definitions of 'residents' (domestic tourists) and 'non-residents' (foreign tourists) used in the study are in line with the recommendations for tourism statistics (UNWTO, 2010), i.e. classification is determined by how long a person has lived in Poland or abroad, rather than nationality or citizenship. All variables are based on respondents' statements, including the type of accommodation used and the planned amount of expenditure during their stay in Warsaw. All analyses were conducted separately for residents and non-residents, as these are two fundamentally different market segments from the point of view of marketing activities. Segmentation of accommodation users in Warsaw was carried out with the CHAID algorithm available in SPSS 28. This algorithm was built on the basis of the chi-square test and has the advantage of being able to create models using non-parametric variables and without pre-set hypotheses. Its output indicates which of the analysed independent variables are the best predictors (with the lowest p) for the dependent variable. There are no restrictions on the distribution of variables, so that untransformed data are used (in contrast to many models using regression). The CHAID algorithm is particularly useful as a tool to aid segmentation, as we choose the variable by which we want to segment (in the case of this study, it was staying

in either a hotel or a rented flat). Another advantage of the CHAID algorithm is the straightforwardness and ease of interpretation of the results (Díaz-Pérez, Bethencourt-Cejas, 2016; Legohérel, Hsu, Daucé, 2015).

All tested sets of variables were cross-validated with ten sub-samples. This procedure generates ten trees, each time without one sub-sample of randomly selected cases. For each such tree the risk of misclassification is calculated. To this end a tree is built for 90% of cases and then the rules from this tree are applied to the remaining 10% of cases. The final result produces a single tree based on the initial sample with a risk estimation as the average of the risk for all of the trees (IBM Corporation, 1989, 2012). In this study the growth of the tree was limited to three levels beneath the root node with the default number of a minimum of 100 cases for the parent node and 50 cases for child nodes. Growth of the tree stops when all the most statistically significant predictors are identified within a pre-set confidence level (95% in this study). The algorithm merges nominal and ordinal predictors of similar highest significance and transforms scale variables into discrete ones searching for the value which has the strongest relationship with the dependent variable (cut-off value).

Several sets of independent variables were considered in the segmentation process, including those taken into account by other authors working on this issue (Lutz, Newlands, 2018; Mody, Suess, Lehto, 2019; Sainaghi, 2020; Sainaghi, Baggio, 2020a). The set of potential predictors embraced: planned length of stay, transportation mode to Warsaw, planned spendings, organisation of the trip, purpose of travel, month of arrival, sources of information about Warsaw, size and composition of the travelling party, the number of previous visits to Warsaw, age group, type of the place of permanent residence, education, gender and economic status. They were tested in different configurations so that the most useful marketing information could be obtained. The size and structure of the sample is presented in Table 1.

Table 1. Characteristics of the sample used for segmentation by main purpose of travel and economic status, 2021 (%)

Purpose of travel	Evaluation											
	residents n = 1752						non-residents n = 648					
	very good	good	bear--able	rather bad	bad	total	very good	good	bear--able	rather bad	bad	total
Leisure	4.0	9.6	1.9	0.1	0.0	15.5	4.3	9.1	1.9	0.0	0.0	15.3
Visiting historical sites	3.8	13.5	4.1	0.1	0.0	21.4	5.7	8.0	4.3	0.2	0.2	18.4
Learning about culture, history	0.5	1.0	0.6	0.0	0.0	2.1	1.1	2.6	1.2	0.3	0.0	5.2
Visiting family or friends	0.3	2.2	0.8	0.0	0.0	3.3	1.9	4.0	0.8	0.0	0.0	6.6
Entertainment	0.4	0.9	0.7	0.0	0.0	1.9	0.3	0.0	0.0	0.0	0.0	0.3
Participation in a cultural event	0.5	1.7	0.3	0.0	0.0	2.6	0.2	0.5	0.2	0.2	0.0	0.9
Participation in a sporting event	0.3	0.9	0.1	0.0	0.0	1.3	0.0	0.6	0.3	0.0	0.0	0.9
Participation in a training course	0.6	1.1	0.5	0.1	0.0	2.2	0.0	0.3	0.2	0.0	0.0	0.5
Participation in a conference trade fair	0.4	0.7	0.3	0.1	0.0	1.5	0.0	0.3	0.2	0.0	0.0	0.5
Business	2.2	4.7	0.9	0.0	0.0	7.8	2.2	2.5	1.2	0.0	0.0	5.9
Transfer	0.6	1.8	0.1	0.0	0.0	2.5	0.5	0.3	0.2	0.0	0.0	0.9
Other	0.7	2.5	0.3	0.0	0.0	3.5	1.2	0.8	0.2	0.0	0.0	2.2
Unspecified	10.6	17.5	6.1	0.1	0.1	34.4	12.5	18.2	10.8	0.5	0.5	42.4
Total	24.9	58.0	16.7	0.3	0.1	100.0	29.8	47.2	21.3	1.1	0.6	100.0

Source: author.

On the basis of the answers provided by the respondents, it was estimated that the median of the planned expenditure per person per night was PLN 250 for residents (95% confidence interval, $n = 1747$, bootstrap of 1000 samples; the length of the estimated interval is less than 1 PLN) and for non-residents between PLN 257 and 304 (95% confidence interval, $n = 648$, bootstrap of 1000 samples).

5. Results of the analysis

As the data used in the analysis was gathered during 2021, when COVID-19 pandemic travel restrictions were still in place, its impact on travel behaviour should be taken into account. The data in Table 2 shows changes in the pattern of accommodation used by residents and non-residents visiting Warsaw in 2021 compared to the relevant data for 2019. The popularity of hotels was characterised by an opposite trend: among residents, their share increased by 2.4 p.p. to 34.8%, while among non-residents it fell strongly from 49.1% to 34.8% (–14.3 p.p.). The share of rented accommodation increased in both groups of tourists. In the case of residents, this was an increase of 1.9 p.p. (to 16.8%), and for non-residents by 3.5 p.p. (to 16.4%). If relatives' or friends' dwellings are excluded, hotels and rented flats were the most popular types of accommodation in both tourist segments. It is worth noting that flats far outweighed rented rooms, whose share among accommodation used by residents in 2021 was 3.2% (down 1.8 p.p.) and non-residents 5.1% (up 1 p.p.).

In order to determine the profile of hotels and rented apartments, CHAID analysis was conducted for five sets of variables. The first set included the planned length of stay, means of transport for travel to Warsaw, purpose of travel, how many family members and/or friends were participating in the travelling party, number of previous visits to Warsaw, organiser of the trip, expected expenditure in Warsaw per person per night, gender, age, type of place of residence and economic status. The results for residents are presented in Figure 1 and for non-residents in Figure 2.

In the tree shown in Figure 1, the CHAID algorithm identified the following variables as statistically significant predictors for stays in hotels or rented flats (apartments):

- organiser of travel as a first-level node,
- on the second level, the duration of stay in Warsaw in the case of self-organised travel,
- on the third level, the number of people participating in the trip.

Flats are more frequently used by people organising a trip on their own. The share of those using rented flats was 38.3%, compared to 0% for schools and travel agencies and 8.9% for a family, workplace or other institution. Among travellers organising a trip on their own, the planned duration of the stay in Warsaw had a strong influence on the choice of accommodation – when it amounted to at least four nights there was a clear increase in interest in renting flats. For such stays, its share was 51.2% against 24.5% for stays of one night. The choice of a rented flat was more often made by those travelling with their families, with flats being chosen least often by couples. The presented set of variables proved to be 84.6% accurate when classifying hotel guests but to a lesser extent for those choosing flats – 28.6%.

For non-residents (Figure 2), despite using the same set of variables, slightly different predictor variables were identified as statistically significant. At the level of the first node, the planned length of stay in Warsaw turned out to be the differentiating feature. For 6–10 nights, the use of flats was 42.9%, compared to 16.7% for 1 night. At node level 2, travelling with more than one family member appeared to be a feature

Table 2. Share of different types of accommodation in 2019 and 2021 (%)

Year	Accommodation type										
	hotel	guest-house	motel	hostel	resort, camping	relatives, friends	rented room	rented apart-ment	own flat	other	total
non-residents $n = 1284^{***}$											
2019	49.1	2.1	0.5	8.8	0.5	20.5	4.1	12.9	1.4	0.3	100.0
2021	34.8	1.9	0.5	4.9	0.8	32.1	5.1	16.4	2.7	0.7	100.0
residents $n = 3528^{***}$											
2019	31.0	2.7	1.6	13.5	0.3	30.2	5.0	14.9	0.5	0.4	100.0
2021	33.4	9.1	0.9	8.7	0.1	27.0	3.2	16.8	0.5	0.2	100.0

Note: In the paper, the following notation was applied: $^{*}\ p < 0.5$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$.
Source: author.

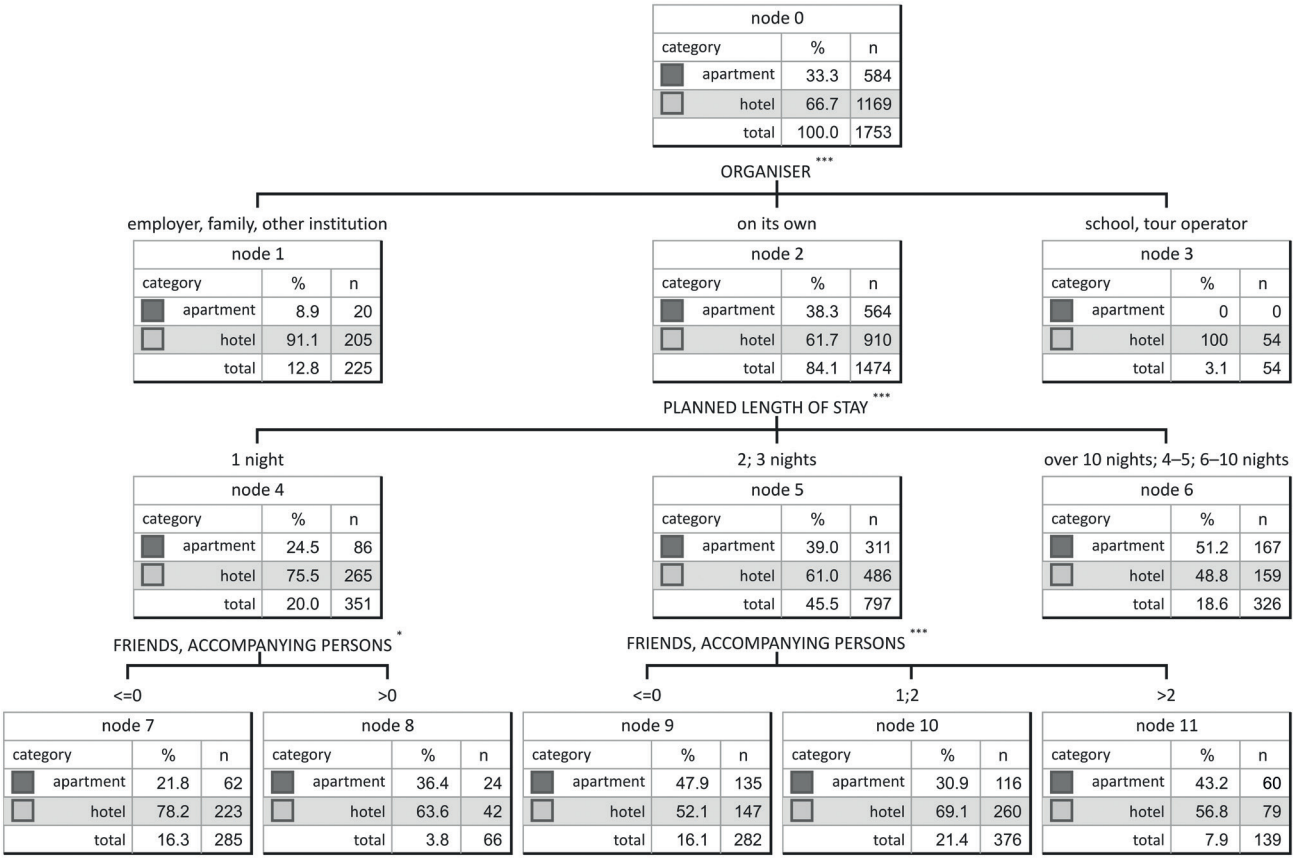

Figure 1. Resident users of hotel or short-term rental accommodation by travel characteristics
Source: author

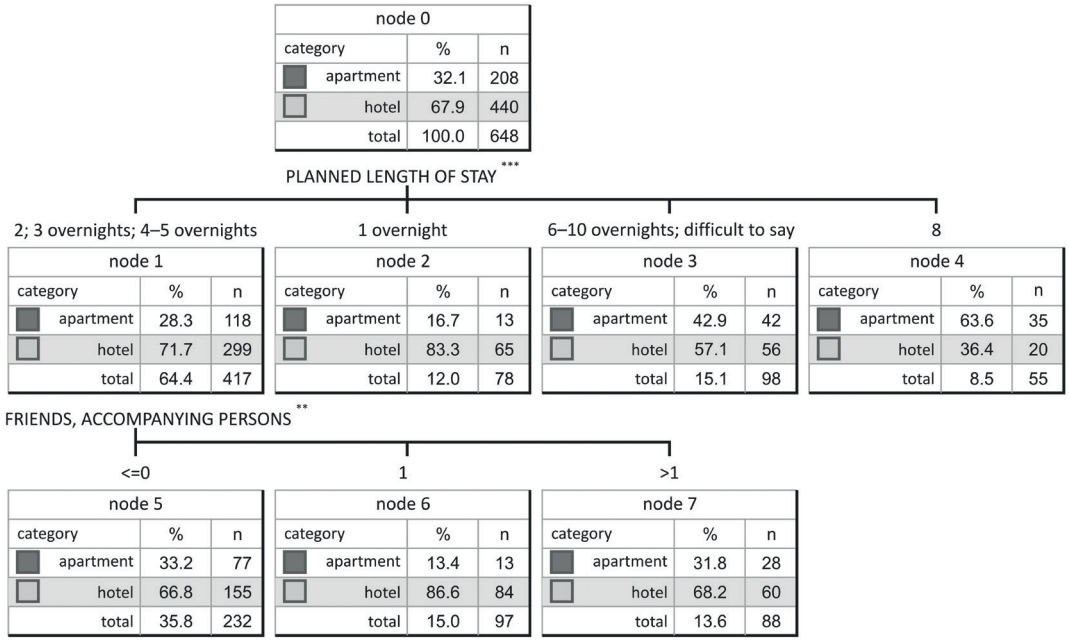

Figure 2. Non-residents users of hotel or short-term rental accommodation by travel characteristics
Source: author

that increased the propensity to use a flat. A node at level 3 was not identified. The analysis of this classification accuracy turns out to be high for hotels (95.5%) but rather low for flats (16.8%).

The second set of tested variables focused on sources of information (city websites, family and friends, social media, mobile apps, tourist portals, guidebooks, maps, the number of previous visits to Warsaw, travel agencies,

other, none). The output of the analysis is shown in Figure 3 for residents and Figure 4 for non-residents.

The data presented in Figure 3 shows that among residents at the first node level, social media played a role, with their users being more likely to use flats than hotels (42.6% vs. 30.7%). At the second node level, the scale of flat use was differentiated by the use of other online sources, with a particular focus on the city's website. However, the accuracy of identification of flat users according to the identified predictors was 0% (in the case of hotels it was 100%). This means that the identified predictors were statistically significant for the sample but not for the random sub-samples taken by the algorithm during cross-validation.

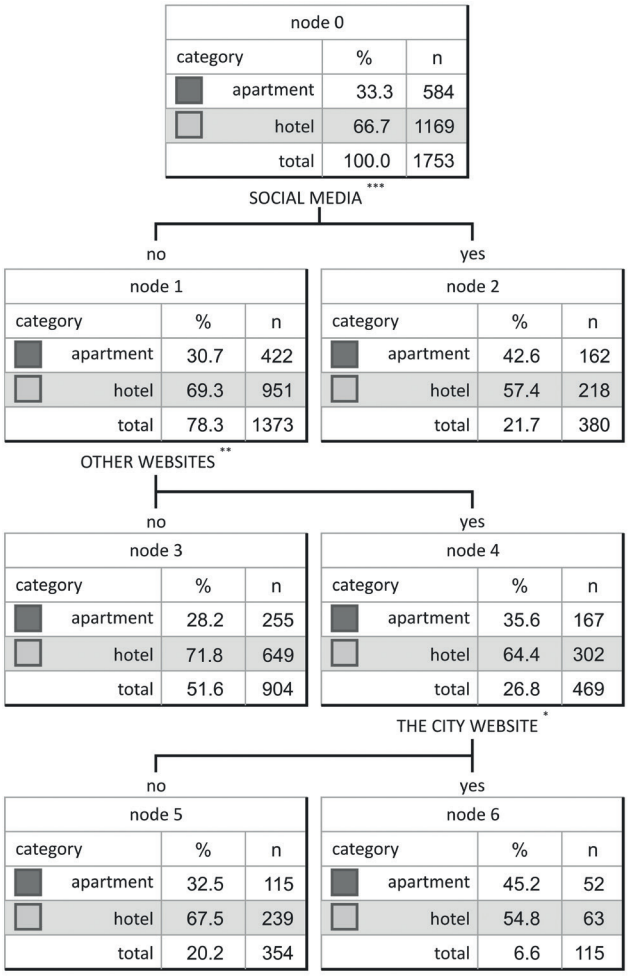

Figure 3. Sources of information used by resident users of hotel or short-term rental accommodation
Source: author

In the case of non-residents, the use of information from family or friends was found to be a statistically significant predictor of the choice of specific accommodation, clearly leading to greater interest in apartments. At the second level of nodes, the use of guidebooks was identified as significant predictor, which favoured the use of hotels (84.6% vs. 69.6%). As in the case of residents, the accuracy of the classification of flat users based on the identified sources of information was 0% and that of hotels was 100%.

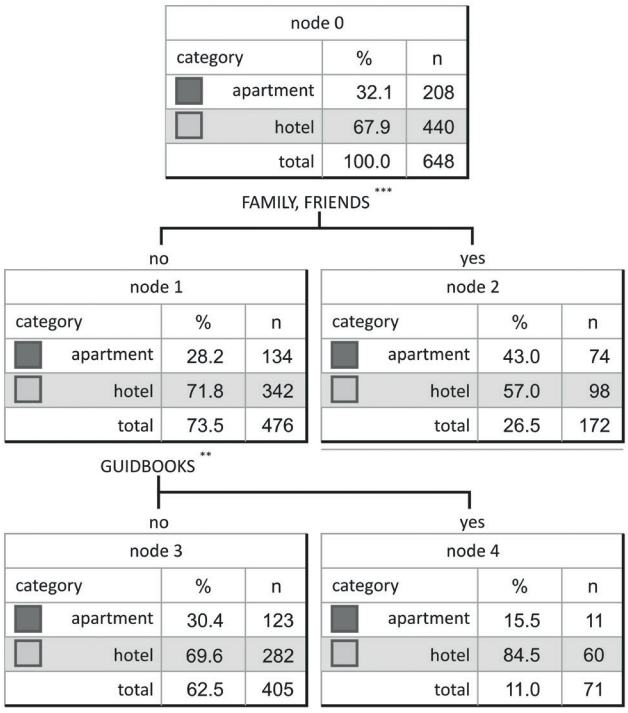

Figure 4. Non-resident users of hotel or short-term rental accommodation by source of information
Source: author

An important element of market segmentation is the characterisation of users in terms of demographic and socio-economic characteristics. This set of variables includes gender, age, type of residence, economic status and the planned length of stay. The CHAID algorithm identified age as statistically significant predictor. For residents, those aged 15–24 (46%) showed the highest propensity to use flats, with the 25–34 age group in second place. Older age groups preferred hotels. The accuracy of the classification of those using flats based on this variable was, however, 0% (for hotels it was 100%). A similar pattern has been identified for non-residents.

In the literature, it is often assumed that apartment users are mainly tourists travelling for personal reasons, while hotels can count on customers travelling for business. In the sets of variables used for the development of the trees described above, the purpose of travel was not identified as a statistically significant predictor. However in the fourth set including the main purpose of travel, month of arrival, number of people in a travelling party and planned length of stay, the purpose of travel was identified as a statistically significant predictor for residents' travel. At the third level of nodes in those who planned to spend one night in Warsaw, flats were more frequently used by

those whose main purpose of travel was to attend a sporting or cultural event, entertainment or other purpose (38.5%). Those travelling on business were less likely to choose apartments, similar to those planning to sightsee, experience culture, visit family or friends and those with no specific purpose (15.7%).

The fifth set of variables was tested to determine the extent to which planned expenditure per person per night affects the choice of a particular type of accommodation. This set proved to be significant predictor only for non-residents, with a cut-off value of PLN 357, that is above the median value estimated for this group. Those who planned to spend more were more likely to opt for a hotel (78.4% against 60.9%). Education, type of place of residence, frequency of visits to Warsaw and material situation did not prove statistically significant predictors in any of the tested sets of variables in which they were included.

6. Discussion

The characteristics of the behaviour of those using accommodation in Warsaw (Table 2) confirm the COVID-19 effect noted by many authors, which is an increase in interest in accommodation that guarantees a certain isolation (Bae, Chang, 2021). During the general decrease in the number of tourist arrivals to Warsaw, in the case of residents this meant primarily a decrease in interest in hostels and rented rooms, and a relative increase in the share of guesthouses, as well as hotels and rented flats. With regard to non-residents, the trend was similar, except that the increase in interest in flats was accompanied by a marked decline in the share of hotels. However, it should be remembered that 2021 was the first year when international travel on a larger scale was possible, thus the first opportunity in two years to visit relatives and friends. The data shows a large increase in the share of relatives' and friends' dwellings (Table 3) and this may be one of the reasons for the reported decline in interest in hotels. The trends described are confirmed by data published by Eurostat, where for the first time information on the number of nights spent in rented accommodation is provided. They show that the number of nights in flats provided to non-residents in Warsaw fell by 58% compared to 2019, and to residents by 31%, while the figures for nights in hotels were 66.5% and 34% respectively (Eurostat, 2022; Statistical Office in Warsaw, 2022).

When it comes to statistically significant predictors that differentiate users of accommodation in hotels or flats, the set of variables for residents identified by the CHAID algorithm is much richer than for non-residents. A partial explanation may be provided by the described peculiarities of non-resident arrivals in 2021, the smaller size of this sample, as well as the fact that the study used data-driven segmentation, the results of which depend, inter alia, on the work of the algorithm that groups the data (Dolnicar, 2008). Several computational procedures were performed with the different sets of variables most commonly used in segmentation studies (Dolnicar, 2008, 2013). In the case of the set including variables describing travel and the demographic characteristics of tourists (Figures 1 and 2), the results of the analysis did not isolate any demographic characteristic as influencing the choice of hotel or flat. For both residents and non-residents, the statistically significant predictors proved to be the planned duration of the trip and the number of people travelling together. This confirms the findings of Mody, Suess and Lehto (2019) who called these variables situational, stating that they have a greater influence on the choice of accommodation than individual characteristics. In contrast, the findings of Lutz and Newlands (2018), who found that houses (flats) are rented by the affluent and those with higher education, were not confirmed. In general, it can be concluded that the longer the planned stay, the higher the frequency of the use of flats, with a cut-off figure of 4–5 nights for residents and 6–10 nights for non-residents. For shorter stays, interest in flats increased if at least three people were travelling together and, surprisingly, also for solo travellers. This may be due to the fact that hotels, especially city hotels, offer mainly double rooms, so both solo travellers and those travelling in a larger group may be looking for a more appropriate offer.

For residents, however, the most important variable influencing the choice of accommodation type appeared to be the way the trip was organised. If the organiser was a travel agency, school, workplace, or even a family, a hotel was by far the dominant choice. Only those organising the trip on their own (having the largest share in the study population) made more use of flats, and the variable influencing specific choices was the planned length of stay described above and the number of people travelling together. This means that competition between hotels and flats is in practice limited to self-organised travel. Although they have a dominant market share, hotels can more actively seek to increase cooperation with travel organisers and improve their offer for those planning a longer stay.

For marketing activities, it is important to identify which sources of information are used by buyers. Similar to the analysis described above, the decision tree describing the behaviour of residents was more elaborate with regard to this issue. In this case, the use of electronic media was associated with greater interest in flats. To the greatest extent this applied to social media, but also to other websites, including the city's. Rental intermediary platforms were not included in the survey; it is possible that respondents classified them as

'other websites'. More people used this named source of information than social media, but the percentage of those who opted for a flat was lower. Analysis of the non-resident data yielded different results. The source of information that most influenced the choice of flats was family or friends, while the choice of hotels was influenced by the use of guidebooks.

The analysis conducted confirmed the findings of other authors indicating that rented flats are a particularly attractive option for large families and those planning a longer stay (Dolnicar, 2019). Similarly, it confirmed the view that business travellers are the clientele of hotels, while possible competition is for personal travel (Sainaghi, Baggio, 2020b), except that in the case of Warsaw, resident tourists interested in sightseeing were also more likely to choose hotels. It was also confirmed that the youngest groups of tourists, users of social media and online information sources, were more likely to use flats (Young, Corsun, Xie, 2017). In contrast, no relationship was found between education level and the choice of any of the analysed accommodation types. Research often highlights the importance of low price as an important factor influencing the choice of apartments (Bagieński, Chlebicka, 2019; Dolnicar, 2019; Young, Corsun, Xie, 2017), unfortunately the available data did not include information on accommodation expenditure. The importance of the economic factor can be inferred from the amount of planned expenditure per person per overnight stay in Warsaw. This variable turned out to be significant only for non-residents, and the limiting expenditure value of those preferring flats was higher than the median expenditure of non-residents in general. Thus, even if these are people looking for lower-priced accommodation, their expenditure during a stay in the city is high.

If the results of the segmentation analysis are looked at from the point of view of its usefulness for marketing activities, it provides important clues for the marketing of hotels, especially with regard to residents, while being limited for apartments. Firstly, in all analyses, the accuracy of the classification of hotel users was much higher than for flats, and secondly, their characteristics and behaviour in many cases enable the identification and targeting of particular microsegments. This applies to institutional buyers and traditional intermediaries i.e. travel agencies, offers for travelling couples, as well as for those interested in visiting the city. Hotels should therefore be active in those media that popularise interesting places in Warsaw. In the case of flats, no such clearly defined microsegments were identified. Their hosts should use online channels, including social media and recommendation systems. It will be more important to highlight benefits that are not offered by hotels, such as the possibility of a longer stay with a larger group of people. Participants in cultural or sporting events may also be an interesting microsegment, and whose interest in apartments may arise from travelling with others interested in these events.

The segmentation described is based on revealed preferences for the type of accommodation, classifying hotel and flat guests according to selected characteristics. When interpreting its results, it is necessary to take into account the conditions associated with the data used. First of all, they cover only one year, and a specific one, because it was marked by the COVID 19 pandemic, so tourist behaviour may have been partly forced by the situation. This is especially true for non-residents, as international travel was more restricted. The second limitation relates to the method used, which is an example of segmentation based on collected data (data-driven), which means that the identified segment characteristics may prove to be unstable, i.e. the patterns found only apply to the analysed data set and are the result of the algorithm used (Dolnicar, 2008, 2013).

7. Conclusions

The presented analysis of the characteristics of accommodation users suggests that in Warsaw the two types of offer are complementary, rather than directly competing. Those using flats are mainly travelling with several accompanying people and planning a longer stay, while, at least with regard to non-residents, their expenditure per person per night is quite high, higher than the median expenditure for residents and non-residents visiting Warsaw in general. From the point of view of the contribution to the city's economy, this is therefore a valuable segment of tourists. The phenomenon analysed is subject to evolution and the findings of the study may change as they relate to a specific city and did not cover issues related to the impact of short-term rentals on the social environment, and thus they are difficult to generalise. Nevertheless, they suggest that efforts to regulate or eliminate short-term rentals are driven by lobbying rather than a real threat to other service providers, and that any regulations should be introduced locally and based on a sound analysis of the situation. The COVID-19 pandemic additionally revealed another characteristic of flats, i.e. the flexibility to adapt supply to current demand (Adamiak, 2022), which is much more difficult in the case of hotels.

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