

THE IMPACT OF THE COVID-19 PANDEMIC ON THE ACCOMMODATION PREFERENCES OF DOMESTIC TOURISTS: THE CASE OF TURKEY

O Impacto da Pandemia Covid-19 na Preferência dos Turistas Domésticos por Acomodações: O Caso Turquia

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ABSTRACT

Tourism, which single-handedly accounts for a significant portion of the service export of Turkey, is considered one of the sectors providing the most competitive advantages. However, the prevention and control measures and travel restrictions brought on by the Covid-19 pandemic significantly impacted the tourism sector in Turkey, as they did in other countries' tourism sector. This impact is not only related to a decline in tourism income but also a process of sharp transformation involving tourists' travel behavior and their accommodation choices. In this context, this study aims to predict future accommodation preferences of domestic tourists by using Markov chain analysis, taking into account previous experiences and Covid-19 processes. The study results indicate that the accommodation companies and investors need to conduct strategic planning within this framework based on the forecast that the accommodation choices of domestic tourists in Turkey are expected to change in the long term.

KEYWORDS

Tourism; Domestic Tourism; Accommodation; Covid-19; Turkey.

RESUMO

O turismo, que sozinho responde por uma parcela significativa da exportação de serviços da Turquia, é considerado um dos setores que oferece mais vantagens competitivas. No entanto, as medidas de prevenção e controle e as restrições de viagem provocadas pela pandemia de Covid-19 impactaram significativamente o setor do turismo na Turquia, assim como impactaram o setor do turismo de outros países. Este impacto não está relacionado apenas ao declínio das receitas do setor do turismo, mas também a um processo de transformação acentuada envolvendo o comportamento de viagem dos turistas e as suas escolhas de alojamento. Neste contexto, este estudo visa prever as preferências futuras de alojamento dos turistas domésticos, através da análise de Markov, tendo em conta experiências anteriores e processos associados ao período pandêmico de Covid-19. Os resultados do estudo indicam que as empresas de alojamento e os investidores necessitam realizar planejamento estratégico dentro desse

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quadro, baseados na previsão de que as escolhas de alojamento dos turistas domésticos na Turquia deverão mudar a longo prazo.

PALAVRAS-CHAVE

Turismo; Turismo Doméstico; Acomodações; Covid-19; Turquia.

INTRODUCTION

The Covid-19 outbreak first emerged in December 2019 in the city of Wuhan, located in the Hubei province of China, in the form of pneumonia (Huang, Wang, Li et al., 2020) before being declared a pandemic by the World Health Organization [WHO] on March 11, 2020. In this context, in order to limit the pandemic spread, governments implemented large-scale quarantine measures and restricted travel by prohibiting entry through their borders. Measures such as cancelling events to protect social distancing were also taken, and the pandemic caused an enormous blow to the global tourism industry (Bakar & Rosbi, 2020; Fotiadis, Polyzos, & Huan, 2021; Gössling, Scott, & Hall, 2020). In addition to the global tourism and entertainment industries, the Covid-19 pandemic brought the accommodation sector to a halt, as well (Duro, Perez-Laborda, Turrion-Prats, & Fernández-Fernández., 2021). In this sense, the tourism industry experienced its worst period in 2020 and an unprecedented decrease in demand occurred in destinations across the world. Due to travel restrictions, the number of international arrivals decreased by approximately 1 billion in 2020, a decrease of 74% compared to the previous year. In terms of export revenue, a loss of approximately 1.3 trillion US dollars occurred, and approximately 100 million individuals in small/medium-sized businesses faced the risk of losing their jobs (UNWTO, 2021).

The fact that tourism, an important sector in terms of service export revenue, is a fragile and vulnerable industry (Seckelmann, 2002; Liu & Pratt, 2017) causes it to be one of the industries that are affected the most by crisis environments such as terrorism, outbreaks, economic crises and natural disasters (Kusune, 2020; Novelli, Burgess, Jones & Ritchie, 2018; Bayraktaroğlu et al., 2021). As in these and similar cases, there is an expectation of a paradigm shift in research related to tourists' behavior and decision-making processes in the current pandemic. Previously acknowledged assumptions regarding tourist behavior may not be valid anymore in the Covid-19 period, and it is suggested that the assumptions underlying traditionally-used theories and models are reevaluated with a critical approach (Kock, Nørfelt, Josiassen et al., 2020). Therefore, considering the impact of the Covid-19 pandemic, behavioral change in tourism movements is

regarded as a subject worth investigating (Villacé-Molinero et al., 2021). That is why little is known about how the behaviors and choices of tourists have changed/will change following the end of quarantines, and it is stated that the factors behind the changes are worth examining (Li, Gong, Gao & Yuan et al., 2021).

According to a study conducted by the United Nations World Tourism Organization, when tourism activities resume, it is estimated that an increase in demand will occur in domestic tourism and 'slow travel' experiences as well as outdoor and nature-based tourism activities (UNWTO, 2021). Similarly, the World Travel and Tourism Council (WTTC, 2021a) states that the trend to rediscover domestic destinations will take place in the long run.

The pandemic process in Turkey started on March 11, 2020, when the first case was observed (T.R. Ministry of Health, 2021), and various measures and restrictions were implemented afterwards. As a result of these restrictions and the closure of border gates, in 2020, tourism income in Turkey decreased to 12 billion dollars, a decrease of 65% compared to the previous year. The number of international arrivals suffered a loss of 69% and was recorded as 15 million (UNWTO, 2021). While tourism accounted for 11% of the GDP in Turkey with USD77.6BN in 2019, this figure decreased to 5% with USD35.5BN in 2020. While 1 in 10 jobs was related to tourism in 2019, this rate was recorded as 1 in 11 jobs in 2020 (WTTC, 2021b). In 2020, the number of domestic tourism movements decreased by approximately 45% compared to the previous year and 42 million travels took place. In the same year, domestic travel expenses decreased by 34% compared to 2019 and were recorded as 32 billion Turkish liras (Tuik, 2021a). Turkey, like the rest of the world, has been affected by the pandemic, with the tourism industry suffering a severe recession. Therefore, in order for Turkish tourism to successfully navigate this process, it is vital to determine the motivating factors that influence tourists' travel choices and to accurately forecast their preferences in this direction.

In this study, the accommodation choices of tourists following the Covid-19 pandemic were investigated. In terms of shaping the supply, it is important to analyze whether tourists' preferences have shifted between large-capacity hotels, such as resort hotels, and accommodation establishments that are smaller, more local and more suitable for the protection of social distance. It is believed that having foresight regarding the future of accommodation businesses is important in terms of planning, from the viewpoint of both authorities and operators and tourists. That is because in the tourism industry, an accurate

estimation of touristic demand is necessary in order for investments such as accommodation, transportation routes and attraction centers, which require large-scale investments, to be planned (Jaipuria, Parida, & Ray, 2021).

In this sense, it is aimed to estimate future accommodation choices of domestic tourists based on their previous preferences. As stated by Sönmez & Graefe (1998), previous travel experiences and risk perceptions influence future travel choices. In this context, the present study aims to predict future choices of domestic tourists regarding the type of accommodation, taking into consideration the protective instinct brought on by the Covid-19 pandemic process as well as previous accommodation experiences. The Markov chain analysis, a stochastic process, was used as the method. The Markov chain analysis generally allows for the estimation of market share based on the probability of users switching to a certain product or service (Uysal, Barrett, & Marsinko, 1995). In this respect, it is thought that determining the accommodation choices of domestic tourists in Turkey will be beneficial in terms of determining how domestic tourism will be shaped in the future.

CONCEPTUAL FRAMEWORK: ACCOMODATION AND HOTEL ATTRIBUTES

To achieve a competitive advantage in the accommodation industry, it is critical for businesses to understand their consumers and their decision-making processes. It is asserted that accommodation enterprises with a clear perspective of consumer (guest) demands would thrive and grow (Baruca & Civre, 2012). Consumer behavior has become highly predictable in recent years, and numerous prediction models have been developed based on repetitive purchasing behavior (Sheth, 2020). Models incorporating variables such as perception, image, attitude, emotion, cultural conditioning, and learning have contributed to a better understanding of tourist behavior, and the concept of motivation has proven to be one of the most effective in defining consumer behavior in tourism (Uysal, Li, & Sirakaya, 2008).

It is known that many studies have been carried out with different approaches regarding the preferences of tourists in touristic activities. Accordingly, it is reported that factors such as age (Lieux, Weaver, & McCleary, 1994; Poon, 2014), perception of destination image (Tapachai & Waryszak, 2000; Manner-Baldeon et al., 2020) and motivation (Dann, 1981; Park & Yoon, 2009; Uysal et al., 2008) are influential in the preferences of tourists. In this respect, the theory defined by Dann (1977) as the 'push and pull factor' has been perhaps the most frequently used and

recognized theory in studies on tourism. The push and pull factor refer to the idea that individuals travel because they are pushed by their own inner forces, and pulled by the external forces of destination attributes. The majority of the pushing factors are the abstract or subjective wishes of individual travelers. This demand-oriented perspective helps to understand the decision-making process of tourists. Pull factors are often supply-oriented, and the strength of destination's attractions is generally thought to induce a pull response in the individual. Natural attractions, cultural resources, recreational activities, special events or festivals, and other leisure options are regarded as attractive features (Kim & Lee, 2002).

Among the studies on the preferences of tourists, there are those that investigate accommodation choices, as well (Chen, 2000; Hao & Har, 2014; Kim Lian Chan & Baum, 2007; Mahdi & Esztergár-Kiss, 2021). That is because accommodation businesses and hotels are centers of attraction for tourists due to their unique design and environment, operational style and opportunities to interact with guests (Liu, Wu, Morrison, & Sia Juo Ling, 2015). Many previous studies concluded that there are specific features influencing the accommodation choices of tourists (Chen et al., 2017). Among these, in the study conducted by Chen (2000), it was stated that factors involving the presence of private bathrooms, good service, hygiene, genial personnel, security and getting one's money's worth are important attributes in accommodation choices. Baruca and Civre (2012) concluded that reliable marketing, affordability, location and friend recommendation are effective in accommodation choices. Similarly, in the study conducted by Mahdi & Esztergár-Kiss (2021), it was stated that room prices, security, breakfast and proximity to the city center are effective. Hao and Har (2014), on the other hand, stated that the most influential attributes in the accommodation choices of businesswomen are security and location. Kim Lian Chan and Baum (2007) reported that ecotourists' preference to stay in ecolodges was affected by the destination attributes and attraction centers in the surroundings of ecolodges.

Due to the expectation that the travel behavior and accommodation choices of tourists would be altered as a result of the changing life routines following the COVID-19 pandemic, estimating future preferences by conducting studies on the tourism demand and travel choice during and after the pandemic has gained importance. For example, in the study conducted by Orîndaru et al. (2021), factors that would determine tourists' decision to travel were examined. In the study conducted with the idea that the Covid-19 pandemic would impact the patterns and habits of

travel related to philological and economic factors, it was concluded that Romanian tourists prefer to avoid large groups and congested situations in the medium term due to psychological considerations, most notably fear of infection, and hygiene and health conditions are critical elements in their travel preferences.

In the study conducted by Zoğal, Domènech and Emekli (2020) on 'second homes', media sources published during the Covid-19 pandemic were examined and it was determined that second home owners migrated from crowded cities to less dense areas, and that second home were their first choice in touristic activities. In another study conducted with the synthesis of news articles published by media outlets, it was stated that with the estimation that the consumption models of Chinese tourists would get impacted following the pandemic, new forms of tourism such as slow tourism and smart tourism could influence future touristic activities (Wen et al., 2020). In the panel data model carried out by Li et al. (2021) using online ticket sale reports, it was reported that the destination preferences of tourists were significantly reshaped following Covid-19, and that tourists opted for destinations that are near their place of residence and have fewer cases of Covid-19.

In another study conducted in China, two survey studies were carried out for the period in which Covid-19 cases peaked, and the period when the pandemic took place, and concluded that the preference of Chinese individuals to travel to countries with high infection rates and long-distance destinations significantly decreased, and that they would prefer nature-based, rural and cultural destinations following Covid-19 (Huang et al., 2021). In another study conducted in China, the preferences of Chinese individuals in terms of hotel prices were analyzed, and it was concluded that individuals whose income increased had significantly increased levels of consumption intention while those with decreased income tended to prefer lower-price hotels compared to the past and those whose income remained unchanged would prefer hotels with the same price range following the pandemic. Therefore, it is understood that attitudes towards the value and service of hotels largely influence the accommodation choices of tourists (Wang et al., 2021). In the empirical study conducted by Wachyuni and Kusumaningrum (2020) with the aim of examining the preferences of tourists following Covid-19, it was concluded that most of the participants would return to tours, and that one of the most highly-preferred types of tourism would be nature tourism.

Similarly, in another study, it was reported that domestic tourists opted to travel again

immediately after the Covid-19 pandemic and preferred affordable hostels over expensive hotels while the most popular type of tourism was nature tourism (Yuni, 2020). In the study of Baba et al. (2020), it was stated that nature-based tourism, which requires less contact with others would be preferred while those who wanted to travel would either delay their touristic travels or travel domestically until everything is back to normal. In a study conducted on Turkish tourists, it was concluded that tourists would tend to travel to places where hygiene, security, reliable health systems and disinfection systems are taken into serious consideration, and that open-air activities as well as eco-tours would be preferred (Jafari et al., 2020). Peluso and Pichierri (2021) stated that the pandemic process pointed out a potential change in vacation choices, and would have consequences for tourism enterprises. In this context, it seems inevitable that there will be changes in travel patterns and tourist behavior due to the Covid-19 outbreak (Mirzaei et al., 2021).

In the present study, it was also investigated whether accommodation choices changed as a result of the changing lifestyles of individuals in accordance with the pandemic. Under the assumption that previous experiences influence future ones, it was examined how future preferences of domestic tourists regarding types of accommodation were impacted as a result of the COVID-19 pandemic.

METHODOLOGY

The Markov Chain analysis is a stochastic process analysis that is frequently used in the literature across a variety of disciplines, ranging from production, finance, marketing, meteorology and health sciences to economics, brand loyalty, price movements in stocks and gold, business performance goals, and even business forecasting problems. It was observed that there are fewer studies in tourism, one of the application areas for the Markov chain analysis, compared to other disciplines. In fact, it has been determined that there are almost no studies in the Turkish literature on the application of Markov chain analysis in the tourism sector. Özcan et al. (2016) analyzed the impact of Turkey's monetary policy on the tourism sector using Markov chain processes.

When the international literature is reviewed, applications regarding the analysis model aimed at various purposes are observed in the sample of different countries. Xia, Zeepongsekul & Arrowsmith (2009) used the Markov chain analysis to model the spatio-temporal movements of

tourists on a macro scale in Phillip Island Nature Park in Victoria, Australia, and as a result of the analysis, they concluded that this methodology can indeed be used effectively to provide information about tourist movement patterns. Xia, Zeepongsekul & Packer (2011) utilized Semi-Markov chain processes to model the spatial and temporal movements of tourists with the aim of understanding, predicting, controlling and optimizing the decisions made by tourists in the selection of attraction centers in the same destination. Ahmad et al. (2019) used the Markov chain analysis to measure the short and long-term popularity of various destinations in the sample of Jeju Island, South Korea based on tourist preferences under user limitations such as the maximum accommodation time, distance and popularity of a specific destination.

In all areas where Markov chain models are used, results regarding the probabilities of future equilibrium state sequences, absorptive Markov chain analyses and brand preference possibilities are obtained depending on the type of data and the model created (Öz & Özpolat, 2010). Under the assumption of first-order dependency, Markov chains are commonly used to model random events that result in a succession of interconnected events (Xia et al., 2009). Rather than past data, the method allows for the calculation of probability values for future events based on current data (Levin et al., 1982). The Markov chain analysis is based on states, the number of transitions between states and transition probabilities (Özdemir & Demireli, 2015). Similarly, Alp & Öz (2009) mention the different states which the process examined can be in, and the necessity of calculating the transition probabilities between these states in order to form Markov chain processes. However, the primary requirement for a stochastic process to generate a Markov chain model is that the conditional probability function of the process displays "Markovian property" (Ross, 2009). In this context, before defining Markovian property and the Markov chain, it is necessary to first define states and the space constituted by states.

With $n \in R$, the condition of the process in any t_d time for the time period cluster $t_1 < t_2 < \dots < t_n$ can be expressed as a state, and is represented with X_{t_d} . The space created by X_{t_d} states is called the state space and it can be shown as $S = \{X_{t_d} | d = 1, 2, \dots, n\}$. Markovian property for the same time cluster can be expressed as the possibility of the process being in state j in time $t+1$ being dependent only on the previous time, in other words, on being in state i in time t . The discrete stochastic process exhibiting Markovian property is called the Markov chain. In the simplest form, Markovian property is expressed as the transition from one state to another

being dependent on only the previous state rather than the past states included in the process (Alp & Öz,2009)

In this discrete stochastic process, the probability of a process whose conditional probability function is in state i in time t to be in state j in time $t+1$ is formulated as $P(X_{t+1} = j|X_t = i) = p_{ij}$ (Winston, 2004). p_{ij} is named as the transition probability between states. This function, which also associates future states with current ones, shows that the rule of probability will be stationary over time (Öztürk, 2009). On the other hand, with $i, j \in S$, $0 \leq p_{ij} \leq 1$ and $\sum_{j=0}^{\infty} p_{ij} = 1$ (Can, 2006). The matrix created by transition probabilities is called the transition probability matrix, and this matrix is represented with $P = [p_{ij}]$ (Tijms, 2003). $P(X_{t+1} = j|X_t = i) = p_{ij}$ shows that transition probabilities are independent of time, i.e. stationary, and n -phase transition probabilities are calculated using the n th power of the transition probability matrix. In a certain phase, the transition probability matrix reaches an equilibrium state. The equilibrium state shows the probabilities of the states the process will be in in the long term (Öztemiz & İplikçi,2016). Hillier and Lieberman (2001) and Ross (2000) emphasized that any n th transition probability matrix and equilibrium state matrix is calculated using the Charpman-Kolmogorov equation shown in Equation (1).

$$P^{(n)} = P^{(n-1)} \cdot P = P^n \quad (1)$$

Each row of the equilibrium state matrix expressing the stable state is equal to each other and the limit of the equilibrium state matrix for $n \rightarrow \infty$ converges to this row vector. This row vector shows the equilibrium state probabilities of the process in the long term.

The population of the present study consists of domestic tourists who engage in domestic tourism in Turkey, and have previously stayed in an accommodation enterprise. Due to the COVID-19 pandemic, the figures of 51 million international arrivals and 34.5 million dollars of tourism income in 2019 have decreased to 15 million international arrivals and 15 million dollars of tourism income in 2020, and entered a recovery period with the partial relaxation in restrictive measures in 2021. In 2021, Turkey attracted 30 million international arrivals and generated 24 million USD in tourism revenue. On the other hand, Turkey was the sixth most visited location in the world in 2019 prior to the outbreak, according to UNWTO data (UNWTO, 2021). Therefore, considering that similar negative effects of COVID-19 were felt in every other country, it can be concluded that Turkey remains one of the world's most popular tourism destinations today.

Due to the pandemic, numerous preventive measures have been implemented, and as a result of several nations imposing travel bans, closing borders, or instituting quarantine periods, significant losses in international and domestic tourism have occurred (Gössling et al., 2020). Similarly, domestic travel in Turkey fell by 45% in 2020 compared to the previous year, totaling 42 million (TUIK, 2021b). On the other hand, as stated in the study conducted by Arbulú et al. (2021), it is believed that the necessary strategy to overcome the crisis in the tourism industry when international arrivals decline is to ensure safe travel for domestic visitors and to introduce regulations regarding international travel. Similarly, the crisis caused by the pandemic-related closure of borders is likely to initiate a recovery phase with the promotion of domestic tourism and the implementation of appropriate measures.

One of the finest illustrations of this circumstance is that tourists in China, one of the most heavily-impacted countries since the pandemic began, are urged to avoid international travel and instead focus on domestic tourism (Wen et al., 2020). Therefore, as stated in the literature, it is considered to be important to investigate domestic tourists' accommodation choices in light of ideas for boosting domestic tourism. In this context, the survey form developed to identify the accommodation choices of domestic tourists following the pandemic was handed out to the participants via Google Forms between December 2021 and January 2022. The study sample was generated using the simple random sampling method, and participants were requested to complete the questionnaire voluntarily. Simple random sampling ensures that all items in the study population have an equal chance of being selected for sampling (Gürbüz & Şahin, 2017). As per the data acquired, 402 questionnaires were distributed, and it was determined that the sample size obtained was sufficient to reflect the populationⁱ.

ANALYSIS AND RESULTS

It is acknowledged that a sample size of 384 for a sampling error of 0.05 / a confidence interval of 0.95 is sufficient to represent a population size of 100 (Yazıcıoğlu & Erdoğan, 2004)ⁱⁱ. In this context, in order to reach the minimum number of 384, the questionnaire was sent to 500 individuals selected using simple random sampling, and the number of individuals was finalized as 402 due to missing or invalid information. The individuals participating in the study were asked the type of accommodation they preferred/would prefer before and after the COVID-19 pandemic. At this stage, the participants were asked to provide answers by taking their previous

experiences into consideration. Table 3 shows the demographic features of the participants.

Table 3. Demographic Features

Gender			Age			Education		
Female	244	60.70%	25 and below	91	22.64%	Primary school	5	1.24%
Male	158	39.30%	Between 26-35	181	45.02%	Middle School	7	1.74%
Medeni Durum			Between 36-45	68	16.92%	High school	44	10.95%
			Between 45-55	19	6.33%	Associate degree	5.97%	4.67%
Single	232	57.71%	56 and over	38	9.45%	Bachelor's degree	225	55.97%
Married	170	42.29%				Postgraduate	106	26.37%
Occupation			Monthly Income					
Public Sector	104	25.87%	2000 TL and below	87	21.64%	Total 402 100%		
Private Sector	131	32.59%	Between 2001 TL-4000 TL	89	22.14%			
Student	134	33.33%	Between 4001 TL-6000 TL	80	19.90%			
Retired	15	3.73%	Between 6001 TL- 8000 TL	99	24.63%			
Unemployed	18	4.48%	8001 TL and over	47	11.69%			

60.7% (n=244) of the participants are female, 39.3% (n=158) are male, 57.7% (n=232) are single and 42.3% (n=170) are married. 25.87% (n=104) are public employees, 32.59% (n=131) work in the private sector, 33.33% (n=134) are students, 3.73% (n=15) are retired and 4.48% (n=18) do not work regularly. In terms of age, it was observed that 45.02% of the participants are aged between 26-35, 22.64% are aged 25 and below, 16.92% are aged between 36-45, 6.33% are aged between 45-55, and 9.45% are aged 56 and over. It can be said that there is an almost equal distribution in class intervals in terms of monthly income. The accommodation types presented to the participants in the questionnaire, and their codes were determined as shown in Table 4.

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Table 4. Accommodation Types and Codes

Accommodation Type	Code	Accommodation Type	Code
Boutique hotel	1	Lodging Houses	6
Tent Rentals-Camping	2	Apart Otel	7
Hostel	3	Resort Otel	8
Secondary Housing	4	Holiday Village	9
Motel	5	Others	10

First, the Markov transition frequencies were calculated using the data from the questionnaire. With the help of the transition frequencies between the mentioned accommodation types shown in Table 5, the percentages of preference for accommodation types before and after the Covid-19 pandemic were calculated as in Table 6.

Table 5. Transition Frequencies between Accommodation Types

	1	2	3	4	5	6	7	8	9	10	Total
1	79	10	0	22	0	0	2	4	0	0	117
2	0	69	0	2	0	0	1	0	1	0	73
3	0	2	1	1	0	0	0	0	0	0	4
4	4	1	0	35	0	0	0	0	0	0	40
5	0	0	1	0	1	1	1	0	2	0	6
6	3	2	0	5	0	1	8	0	3	0	22
7	12	1	0	10	1	0	7	3	0	0	34
8	6	4	0	21	2	1	1	37	5	4	81
9	3	1	0	1	0	0	0	0	6	2	13
10	1	0	0	4	0	1	0	1	0	5	12
Total	108	90	2	101	4	4	20	45	17	11	402

Table 6. Preference Shares of Accommodation Types in Initial Status (before Covid-19) and Next Period (post Covid-19)

Accommodation Types	Before Covid-19	Post Covid-19	Ratio of Percentage Change
1-Boutique Hotel	29.10%	26.87%	-8.30
2- Tent-Camping	18.16%	22.39%	18.89
3-Hostel	1.00%	0.50%	-100.00
4- Secondary Housing	9.95%	25.12%	60.39
5-Motel	1.49%	1.00%	-49.00
6- Hostel	5.47%	1.00%	-447.00
7- Apart Hotel	8.46%	4.98%	-69.88
8- Resort Hotel	20.15%	11.19%	-80.07
9- Holiday Villages	3.23%	4.23%	23.64
10- Other	2.99%	2.74%	-9.12

Along with the assumption that earlier experiences influence subsequent choices, individuals who visited any of the accommodation types were asked about changes in their accommodation preferences based on the factor variable of the Covid-19 pandemic. According to the results obtained, the preference of boutique hotels, which had a past preference rate of 29.10%, decreased to 26.87% in terms of being the participants' next choice following the pandemic. Similarly, the future preference rate of hostels, motels, lodging houses and other types of accommodation following the pandemic decreased in percentage. On the other hand, considering that 45% of the participants are aged between 26-35, it is very striking that the Resort Hotel accommodation type, which had a past preference rate of 20.15%, decreased to

11.19% as a future choice following the pandemic despite the amount of social activities, sports and entertainment services it provides.

The future preference rate of Tent Rentals-Camping, which has a past preference rate of 18.16%, increased to 22.39% while the highest increase occurred in secondary housing with 60%. While secondary housing was preferred by 9.95% of the participants as part of past experiences, their future preference rate following the pandemic increased to 25.12%. Table 7 shows the Markov transition possibilities matrix obtained using the transition possibilities matrix following the change in past and future accommodation choices based on the frequencies.

Table 7. First Step Transition Probabilities Matrix

$$P = \begin{pmatrix} 0,69 & 0,09 & 0,00 & 0,19 & 0,00 & 0,00 & 0,02 & 0,03 & 0,00 & 0,00 \\ 0,00 & 0,95 & 0,00 & 0,03 & 0,00 & 0,00 & 0,01 & 0,00 & 0,01 & 0,00 \\ 0,00 & 0,50 & 0,25 & 0,25 & 0,00 & 0,00 & 0,00 & 0,00 & 0,00 & 0,00 \\ 0,10 & 0,03 & 0,00 & 0,88 & 0,00 & 0,00 & 0,00 & 0,00 & 0,00 & 0,00 \\ 0,00 & 0,00 & 0,17 & 0,00 & 0,17 & 0,17 & 0,17 & 0,00 & 0,33 & 0,00 \\ 0,14 & 0,09 & 0,00 & 0,23 & 0,00 & 0,05 & 0,36 & 0,00 & 0,14 & 0,00 \\ 0,35 & 0,03 & 0,00 & 0,29 & 0,03 & 0,00 & 0,21 & 0,09 & 0,00 & 0,00 \\ 0,07 & 0,05 & 0,00 & 0,26 & 0,02 & 0,01 & 0,01 & 0,46 & 0,06 & 0,05 \\ 0,23 & 0,08 & 0,00 & 0,08 & 0,00 & 0,00 & 0,00 & 0,00 & 0,46 & 0,15 \\ 0,08 & 0,00 & 0,00 & 0,33 & 0,00 & 0,08 & 0,00 & 0,08 & 0,00 & 0,42 \end{pmatrix}$$

The diagonal of this matrix indicates the percentage of participants who maintained their preference for the same type of accommodation from one period to the next. In other words, the diagonal of the matrix contains information regarding the participants' dependence to the types of accommodation. As demonstrated in Table 8, the highest dependency rates to the type of accommodation among the periods were recorded in tent rentals-camping with 95% and in secondary housing with 88%. The dependence to boutique hotels is 69% while this rate is 46% for resort hotels, 46% for holiday villages and 42% for other accommodation types. Hostels (25%), motels (17%) and apart hotels (21%) have relatively lower rates of dependency compared to the others.

Table 8. Percentage of Dependency on Accommodation Types

Accommodation Types	Dependency (%)
1-Boutique Hotel	69

2- Tent-Camping	95
3-Hostel	25
4- Secondary Housing	88
5-Motel	17
6- Hostel	05
7- Apart Hotel	21
8- Resort Hotel	46
9- Holiday Villages	46
10- Other	42

Based on the transition probability matrix shown in Table 7, a long-term equilibrium state possibility matrix was obtained using the Chapman-Kolmogorov equation. Table 9 shows the equilibrium state possibility matrix.

Table 9. The Equilibrium State Possibility Matrix

$$D = \begin{pmatrix} 0,14 & 0,43 & 0,00 & 0,38 & 0,00 & 0,00 & 0,01 & 0,01 & 0,01 & 0,00 \\ 0,14 & 0,43 & 0,00 & 0,38 & 0,00 & 0,00 & 0,01 & 0,01 & 0,01 & 0,00 \\ 0,14 & 0,43 & 0,00 & 0,38 & 0,00 & 0,00 & 0,01 & 0,01 & 0,01 & 0,00 \\ 0,14 & 0,43 & 0,00 & 0,38 & 0,00 & 0,00 & 0,01 & 0,01 & 0,01 & 0,00 \\ 0,14 & 0,43 & 0,00 & 0,38 & 0,00 & 0,00 & 0,01 & 0,01 & 0,01 & 0,00 \\ 0,14 & 0,43 & 0,00 & 0,38 & 0,00 & 0,00 & 0,01 & 0,01 & 0,01 & 0,00 \\ 0,14 & 0,43 & 0,00 & 0,38 & 0,00 & 0,00 & 0,01 & 0,01 & 0,01 & 0,00 \\ 0,14 & 0,43 & 0,00 & 0,38 & 0,00 & 0,00 & 0,01 & 0,01 & 0,01 & 0,00 \\ 0,14 & 0,43 & 0,00 & 0,38 & 0,00 & 0,00 & 0,01 & 0,01 & 0,01 & 0,00 \\ 0,14 & 0,43 & 0,00 & 0,38 & 0,00 & 0,00 & 0,01 & 0,01 & 0,01 & 0,00 \end{pmatrix}$$

Table 9 shows the equilibrium state vector constituting each row of the equilibrium state possibility matrix. The equilibrium state vector also gives information about the long-term preference rates of accommodation preferences. According to this vector, the participants' future accommodation choices following the Covid-19 pandemic [in the long term] are Tent Rentals-Camping with 43%, Secondary Housing [rental-summer houses] with 38% and Boutique Hotels with 14%, respectively. While it is estimated that hostels, lodging houses, motels and other accommodation types will not be preferred in the future, it was predicted that apart hotels, resort hotels and holiday villages will be preferred with a very small 1% probability in the long term. In such a case, it can be said that resort hotel and holiday village accommodation, which is one of the most important examples of mass tourism, with a high dependency rate of 46%, will decrease in the long term to a very small preference rate of 1% as long as the pandemic conditions continue.

DISCUSSION

While tourism is a large industry, it is viewed as vulnerable to unexpected circumstances such as natural disasters and crises. Changes may occur in the economic environment and demand during times of crisis (Jong & Soh, 2021). As a result of the Covid-19 outbreak, non-citizens and non-residents were restricted from entering certain countries and borders were closed (Polyzos et al., 2021). In this context, the tourism industry has been one of the most affected by the measures taken to prevent the spread of the Covid-19 pandemic, which is in line with expectations. In addition to the low supply in the tourism industry, there is also a decrease in demand due to risk perception. The tourism industry experienced not only low income on the supply side, but also demand restriction on the demand side, which was reflected in risk perceptions (Li et al., 2020b). Therefore, it is predicted that the travel and accommodation choices of tourists will be altered in response to natural disasters, crises and pandemics. In the study conducted by Wen et al. (2005) during the SARS outbreak, which exhibited features of a pandemic, it was found that SARS had a large impact on individuals' lives, jobs and travel patterns and changed their travel tendencies and leisure trip preferences.

It was stated that as a result of the Covid-19 pandemic, which has affected even larger masses compared to SARS, tourists would prefer nature tourism and short travels while factors of attraction such as security, sanitation and hygiene would be emphasized (Wachyuni & Kusumaningrum, 2020). Li et al. (2020a) emphasized that tourists would start to consider short trips and domestic travel following the pandemic. It is expected that destinations and tourism enterprises will respond in accordance with the process against these changes (Villacé-Molinero et al., 2021). On the other hand, it is important to investigate whether the accommodation choices of domestic tourists will change and to make accurate predictions regarding their future choices for the tourism industry to sustain its planning and operational activities. Therefore, in the present study, the accommodation choices of individuals who travel/want to travel in Turkey following the pandemic were examined using the Markov chain analysis. In this sense, based on the assumption that previous experiences impact future ones, the change in the accommodation choices of tourists who have previously stayed in an accommodation enterprise was examined with the factor variable of the Covid-19 pandemic.

In this study, when the preference rates after the pandemic were compared to the preference rates prior to the pandemic, it was discovered that secondary housing had the highest increase

with 60.39%. Secondary housing, which had a preference rate of around 10% prior to the pandemic, became the second most preferred type of accommodation following the pandemic, with a rate of 22.39%. On the other hand, excluding the accommodation types that had preference rates below 6% prior to the pandemic despite experiencing a significant decrease afterwards [such as hostels with 447% and lodging houses with 100%], resort hotels, which had a preference rate of around 20% before the pandemic, became one of the most declining types of accommodation with a decrease of 80%. Behind secondary housing, the type of accommodation that experienced the greatest surge in preference rate following the pandemic was tent rentals-camping, which increased by 22.39%.

Although preference for boutique hotel accommodation declined by 8.3% from 29.10% prior to the pandemic, it still remained the most favored type of accommodation at 26.87% following the pandemic. Another type of accommodation whose preference rate increased by 23.64% is holiday villages. When domestic tourists' dependence to accommodation establishments is analyzed, it is discovered that the type of establishment to which they adhere the most (95%) is tent rentals-camping, followed by secondary housing (88%). As a result of the Markov chain model, which was developed in the context of the assumption that past experiences influence future preferences and the effect of the protective measures taken due to the Covid-19 pandemic on consumer behavior, in terms of the long-term plans following the pandemic, the most preferred type of accommodation for domestic tourists is tent rentals-camping, with 43%, followed by secondary housing with 38% and boutique hotels with 14%. It is known that types of secondary housing, particularly tent-camping, are nature-based, more secluded, and controllable housing types located away from densely populated places.

Similarly, it is known that boutique hotels are smaller-scale establishments that do not host large groups of people. It can be said that this type of accommodation is well-suited to domestic tourists' desires for a reliable and isolated business type. Considering that mass tourism is a form of tourism that holds large groups of people together, tourists may prefer boutique enterprises to feel more individualized (Aydın & Doğan, 2020; Türker, 2020). As a result of our study, as Huang stated, it was seen that short trips and nature-based tourism would be preferred after the pandemic. This finding is also consistent with the estimation of the UNWTO (2021) that when tourism is revitalized, the demand for outdoor and nature-based tourism activities will increase (2021).

Similarly, the findings of the present study are in parallel with the finding reported by Baba et al. (2020) that nature-based types of tourism that require less contact with others will be preferred after the pandemic, as well as the finding reported in the study conducted by Jafari et al. (2020) on Turkish tourists, stating that tourists would tend to travel to places where hygiene, security, reliable health systems and disinfection systems are taken into serious consideration, and that open-air activities as well as eco-tours would be preferred. As stated in the study conducted by Zoğal et al. (2020), secondary home owners desire to migrate to areas that are less populated and away from crowded regions, which is also in line with the findings of the present study. On the other hand, it was discovered that resort accommodation enterprises, which were the second most preferred type of accommodation prior to the pandemic, saw a significant reduction in choice following the pandemic. This finding is consistent with the conclusion of the study conducted by Craig & Karabas (2021) that tourists' tendency to make accommodation plans in hotels/resort hotels decreased.

CONCLUSION

Following the Covid-19 pandemic, individuals feel unsafe due to the risk of infection and want to avoid crowded spaces. For this reason, tourists prefer to be in more isolated environments during touristic activities and prioritize short-distance travel over long flights. Therefore, it is expected for tourists to shift their accommodation choices towards open-air, nature-based businesses. In this direction, it is important to develop policies and strategies that will allow travel, tourism and accommodation activities to succeed (Onat et al., 2021). For this reason, understanding how tourist behavior will change after the pandemic will enable the tourism industry to position itself appropriately in the future.

Finally, the present study involves certain limitations. Firstly, the future accommodation choices of tourists following the pandemic were predicted based on their previous experiences. Therefore, other variables that may impact their decision-making processes can be taken into consideration in future studies. The present study was carried out within the scope of a single country, and the accommodation choices of domestic tourists in other countries were not included. Finally, international arrivals were not included in the study, and only domestic tourists were studied. In future studies, it would be beneficial to study the accommodation choices of the citizens of different countries.

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Appendix-1

Sampling size for $\alpha = 0,05$									
Population Size	$\mp 0,03$ sampling error (d)			$\mp 0,05$ sampling error (d)			$\mp 0,10$ sampling error (d)		
	p=0,5 q=0,5	p=0,8 q=0,2	p=0,3 q=0,7	p=0,5 q=0,5	p=0,8 q=0,2	p=0,3 q=0,7	p=0,5 q=0,5	p=0,8 q=0,2	p=0,3 q=0,7
100	92	87	90	80	71	77	49	38	45
500	341	289	321	217	165	196	81	55	70
750	441	358	409	254	185	226	85	57	73
1000	516	406	473	278	198	244	88	58	75
2500	748	537	660	333	224	286	93	60	78
5000	880	601	760	357	234	303	94	61	79
10000	964	639	823	370	240	313	95	61	80
25000	1023	665	865	378	244	319	96	61	80
50000	1045	674	881	381	245	321	96	61	81
100000	1056	678	888	383	245	322	96	61	81
1000000	1066	682	896	384	246	323	96	61	81
10000000	1067	683	896	384	245	323	96	61	81

Source: Yazicioğlu & Erdoğan (2004, p. 50).

NOTAS

ⁱ Appendix-1 shows the population represented by the sample size.

ⁱⁱ Appendix-1 shows the table regarding the sample sizes representing the population for sampling error.

PROCESSO EDITORIAL

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