Research Article

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The Hotel Site Selection: Determining Locational Factors by Fuzzy TOPSIS

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Abstract: Just like in other industries, it is very important to choose the best possible location in hotel investments. As there are too many alternatives and changing touristic demands, there is serious competition within the hospitality sector. Therefore, all the investors want their properties located at the most profitable and competitive sites. To do so, they should decide the hotel location site by doing a well-analysed feasibility study. The hotel location selection can be influenced by some elements such as natural, economical, socio-cultural, legal, psychological factors and agglomeration effects. All of these factors have important roles of a hotel's business success. However, especially in the last few years, the increasing numbers of hotel investments call in doubt that these factors are not considered properly. With this doubt, the main problems of this research have been revealed: what main factors do the investors consider in their investment decisions, and how do they decide the best site to locate the hotel? These problems also create the aims of this paper, which are to determine the factors that are important for investors and to find out where the most selected investment zones are. To achieve this goal, Istanbul has been divided into five agglomeration (investment) zones such as Historical Peninsula, Taksim-Beşiktaş-Şişli, Sarıyer-Maslak-Levent, Airport Area and Anatolian Side, according to their agglomeration effects. Then, interviews were completed with six hotel investors from these areas in order to get their opinions about the investment decisions. The gathered information has been analysed by the fuzyy TOPSIS method, which helps to calculate the subjective thoughts of the investors in a quantitative way. Then, the order of preference within the investment zones was calculated to determine the most popular site among the investors. The results showed that the most important factors for hotel location selection are agglomeration effects and economical factors. According to the order of preference, the most preferred location site has been determined as the Historical Peninsula, which includes Fatih, Eminönü, Sultanahmet and Topkapı zones.

Keywords: Hotel investments; Location site; Agglomeration; Fuzzy TOPSIS.

1 Introduction

Being one of the most important decisions during a business life cycle for any kind of establishment, the investment decisions determine the success of an entrepreneur in the related sector. All the entrepreneurs wish to gain more money than what they invested; that is why, they want to choose the best projects to invest for themselves. In order to make the right investments, it is important to understand the term of investment and the investment process.

In general, an investment is defined as the transfer of all resources to particular areas with the expectation that some benefits will be provided in the future (Kahraman, 2010). In other words, investment or investing is defined as the act of committing money to a business or a project with the expectation of obtaining an additional income or profit. It also includes all the capitals put into a study of a prospective company.

Investments are important for countries to develop mostly in an economical way. When the positive effects of tourism in the regional and national economic growth are considered, it is also possible to mention that investing in the tourism industry is essential for regional development as well. This way, especially the developing countries are trying to increase the amount of tourism investments.

Tourism investments refer to all the provision of capital that is being used in any kind of touristic establishment in order to meet the needs of the guests during their

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stay. Therefore, tourism investments include infrastructural investments, accommodation facility investments and other service facility investments. As tourists start to come to a destination and spend money there, some economical and sociological effects will occur, and this will encourage the governments and private entrepreneurs to invest more in that area. Regarding this point of view, it is possible to say that, infrastructural investments affect the investments of accommodation establishments, while other service facility investments accelerate them.

On the other hand, the return of investments can take a long time, and touristic demand can be changeable because of the effect of political, economic and social factors. That is why, tourism investments are mostly considered as a risky business, and this makes some of the entrepreneurs stay away from tourism investments. Therefore, it is essential to complete a detailed feasibility analysis and determine the factors that can be affectious, in order to decrease these risks during the investment process. These factors can be listed in different ways in different sources, but, no matter what, one of the most important factors that should be analysed properly is the location site selection, especially for hotel investments. However, the increasing numbers of hotel investments, especially in Istanbul, within last ten years show that the site selection factors are not been considered properly. Especially, when the hotel investments increased in the Atatürk Airport area even when the airport is closed, the need of investigating the reasons that lie behind these investments. That is why, this paper has been structured as an exploratory research design that helps to find out the main problems and the reasons of them.

This research aims to determine the factors that can affect the hotel location site selection during the feasibility study for a hotel investment and also to determine the most preferred hotel location site. To achieve this aim, interviews have been completed with six tourism investors in Istanbul by applying a survey that helps to learn the most important evaluated factor to decide the location zone. Also, by diving the city of Istanbul into five investment zones, it is asked to the participants to evaluate these zones by using the location site factors that they evaluated before. The data gathered from the interview has been applied by using fuzzy TOPSIS method in order to determine to importance weights of the factors that affect the hotel location site. Finally, with the help of the algorithm of fuzzy TOPSIS method, the most preferred hotel location site has been figured out.

2 Literature Review

Tourism investments are done with the purposes of developing the company's performance and gaining positive returns. They are also sensitive to any kind of exterior changes. That is why, they need to be planned properly (Rahmani, 2017; Tiainen, 2013). At this point, the investment process comes into play. Even though the investments can differ in compliance with the activity fields of the business, the investment process and the steps should be applied to show similar features in every sector (Tiainen, 2013). The basic steps of an investment are listed as: "*1) emerging the project idea, 2) pre-research, 3) the feasibility study, 4) evaluation of the alternatives and choosing the appropriate one, 5) financing the investment project, 6) implementation of the project, and 7) control*" (Rutherford & O'Fallon, 2007). These steps help the entrepreneurs to make the investment decisions more rational.

All investment projects start with the idea of a project or entering a business in tourism, just like the other sectors. But, one of the most important steps of the process is the feasibility study for the projects. Because if the project wished to be involved is not profitable enough or does not provide the economical positivity, there will not be a reason or logic to continue this investment. So, the feasibility study helps the investors if a project is profitable or not.

Feasibility study is an analysis of how successfully a project can be completed accounting for factors that can be effectful such as economic, technological, social and legal factors (Rutherford & O'Fallon, 2007). In other words, it can be defined as a study that reveals if an investment project can produce sufficient demands in the selected site and if the potential revenue gained from the investment can fulfil the amount of investment (Kahraman, 2010). The main purpose of the feasibility analysis is to reveal potential problems that could occur if an investment is pursued, and to determine if, after all significant factors are considered, the investment project should be pursued. It also helps the investors to figure out where and how they will operate a business, potential obstacles, competition and the funding needed to get the business up and running (Kahraman, 2010; Rutherford & O'Fallon, 2007; Tiainen, 2013).

The feasibility analysis, which is also important for identifying and solving nearly all business-related problems, contains four components. Market feasibility studies help describe the industry, the current and future market potential, competition in the market, sales projections and prospective buyers, while economic and financial feasibility studies clarify the economical effects of the

investments, the projection of the amount of funding or start-up capital needed and what sources of capital can be used. Technical feasibility studies lay out the details on how a good or service will be delivered with all the engineering perspective, including transportation, business location and materials. Finally, legal feasibility studies concern the business's legal status, the legal process to be pursued and the legal allowances determined by the government for the location site (Erkan, Şahin, & Nasöz, 2015; Uğurlu, 2016).

2.1 The Hotel Location Site Selection

To understand if it makes sense to build or invest a hotel, another important factor, as much as the feasibility, is the hotel location site selection. Because nearly the only thing to support the results of the feasibility studies and to determine the profitability is the hotel's location site. And, if the location site is wrongly decided, no matter how qualified the hotel is, it will not be as successful as projected.

Location site selection is basically defined as the most appropriate place that all the circumstances are provided in order to continue the business's activities and achieve its goals (Tırmıkçıoğlu Çınar, 2010). When it is considered according to tourism investments, it is defined as selecting the best destination that provides the highest profit potential with the lowest costs to produce the tourism products with the quality needed (Erkan et al., 2015). Regarding this perspective, the hotel location site is accepted as the place that ensures lower costs during the investment step and higher profitability during the operation step (Akgöz, 2018; Tırmıkçıoğlu Çınar, 2010).

The location site of a business affects the sales prices, the procurement process of the goods and services, and usage of the natural resources of the destination (Özel, 2012). Therefore, as it is in all industries, location site selection is a strategic subject needed to be paid long-term attention for tourism as well (Akgöz, 2018), because the location site is important not only in the development phase but also operational and growing phases. Especially, in service sectors like tourism where the production and consumption are actualised simultaneously, it is accepted as a factor that determines the demand of the businesses. That is why, the location site selection should be done by considering the elements such as market structure, needs, wants and likes (Kozak, 2012).

A wrongly chosen location site will bring together the issues of building transport and will cause the sources to be tabescenced and natural environment to be blasted. This results in increasing the purchasing, marketing, transportation, telecommunication and substructural costs while decreasing the profitability (Eleren, 2007; Ertuğral, 1998; Özel, 2012). Hence, the location site should be selected by considering economical, technical and regional factors with the types of the business and its aims (Akgöz, 2018).

2.2 Factors Affecting the Hotel Location Site Selection

There are various effective elements in location site selection of businesses. These elements, also known as location site factors, are the features that affect costs, sales revenues and capital structure of the business in case of settling in a place (Akgöz, 2018; Ertuğral, 1998). As one of the most important aims of investment is reducing the costs, these factors should be analysed in detail.

Most of the investors decide the hotel location site by considering the criteria of availability of touristic attractions, infrastructure and accessibility, easiness in purchasing and delivering of inputs and the priority of the destination in tourism development policies (Rutherford & O'Fallon, 2007). It seems that the site selection factors are categorised differently in the local and foreign literature. For instance, Bull (1994) suggested that these factors can be gathered into three groups as accessibility, characteristics of physical areas and characteristics of business environment, while Barutçugil (1989: 2) has classified these factors as "*touristic attractions, substructure and transportation resources, the easiness of providing the production inputs, and the importance of the location site has according to tourism*".

On the other hand, modern researchers approached these factors in the marketing perspective and listed them as: distance to attractions, distance to business centres, agglomeration effects and market share in the area, psychological factors, star rating of the hotel, social and political factors (Özel, 2012; Song & Ko, 2017). Chan & Wong (2006) differentiated these factors as: local economical structure, regional regulations, height permission of buildings, transportation and parking possibilities, local management companies, geographical features of the area and the size of the area. According to Yang, Wong, & Wang (2012), these factors can be classified as star ratings, the operating period after the opening, service diversity, legal owning status, agglomeration effect, substructure services, accessibility, distance from subway and distance from other tourism establishments. When all the classifications are reviewed in the literature, the most commonly referred ones are gathered, summarised and listed as:

1) natural factors, 2) economic factors, 3) legal factors, 4) socio-cultural factors, 5) psychological factors and 6) agglomeration effects (Akgöz, 2018; Ermağan, Kızılırmak, & Yazırdağ, 2017; Ertuğral, 1998; Kahraman, 2010; Olalı & Korzay, 1993).

According to this classification, natural factors refer to all the natural resources and attractive elements of an area such as its climate, beaches, forests, natural touristic sites, archaeological sites, area structure and height, weather conditions, earth conditions. The economical factors are the economical structure of the area and its inhabitants, which also helps the area to protect the competitive advantage and contain transportation, distance from customers and supply centre, area and construction costs, employment and waging, regional finance policies, regional rentability (Akıncı, 2016; Erkan et al., 2015).

The socio-cultural factors are the elements that can affect tourists' experiences and recovery. They include: shopping possibilities, art centres, exhibition centres, open- and closed-air sport centres, recreational amusement parks, food and beverage facilities. The legal factors include laws and regulations, construction permissions, height limits, etc. and also are important for all types of businesses, both in investment and activity phases. Therefore, they include the area construction permissions, the regional regulations, the historical site conditions of the area and the incentives given from the government, etc. (Kahraman, 2010).

The psychological factors are related with the local people of the selected destination and their perception of touristic development there. If the local people's perceptions are high, they will create more positive attitudes. But, vice versa, their attitudes will be negative and they will react offensively to the touristic activities in their zones (Tırmıkçıoğlu Çınar, 2010). On the other hand, locals' attitudes are not enough to select the best location for hotels. As Puciato (2020) claims that the behavioural factors of hotel investors, which mostly rely on their past experiences and place of origin or residence, are also important for location site selection.

The agglomeration effects are one of the most important factors affecting the location site selection. Because, it refers to utilising all the benefits of a site that the businesses can receive from clustering (Yang, Luo, & Law, 2014). In other words, it is defined as the cumulation of the businesses in a region by noticing the positive results of the factors taken into consideration during the location selection process (Canina, Enz, & Harrison, 2005). By clustering the same kind of businesses in a region, it will be possible to force the employment, to develop the socio-cultural environment and to create a fair competition in the industry (Ertuğral & Yakar, 1997). That is why, while selecting a location site, all agglomeration possibilities and the potential of regional development should also be considered.

3 Methodology

3.1 Research Area

As being an economically contributive industry for countries, tourism attracts lots of local and international investors. Such that, the numbers of new investments prove this attraction. However, when examining the hotels in Istanbul, it is seen that most of them are not 100% occupied. Despite this data, the increase in the hotel investments is thought-provoking. Likewise, the concentration of the investors only on four- and five-star hotels brings to minds the idea of investment decisions are taken without making a fulfilled market feasibility analysis.

When the tourism supply of Istanbul is evaluated numerically, room, bed and person capacities of tourism facilities, which stand out as striking figures, are taken into consideration. Istanbul, which has a population of approximately 15.1 million, ranks eighth in the OECD Metropolitan Region according to the Regional Evaluation Report prepared by the OECD in 2008 and is classified as a mega city (Istanbul Kalkınma Ajansı - ISTKA, 2019).

This crowded population has led to the construction of accommodation, food and beverage, entertainment and recreation facilities, each of which will be used for the consumption of local people, who are considered potential tourists. Both the increase in the number of these businesses and the promotional activities carried out by using the feature of being a mega city have led Istanbul to become a city that attracts tourists all over the world over time. As a result, many domestic and foreign investors have made many investment initiatives that they may need during their travels for potential and existing domestic and foreign visitors, especially the number and capacity of accommodation businesses have increased rapidly all over the city.

The districts of Istanbul are grouped by considering the agglomeration ratio of facilities. As the result, Istanbul is divided into five agglomeration zones:

- Historical Peninsula – with Eminönü, Beyazıt, Sulahmet, Topkapı, Kazlıçeşme and Samatya districts included,
- Sarıyer-Maslak-Levent – Kâğıthane included,
- Taksim-Beşiktaş-Şişli – Beyoğlu included,

– Airport Zone – with Arnavutköy, Avcılar, Bağcılar, Bakırköy, Bahçelievler, Bayrampaşa, Başakşehir, Beylikdüzü, Büyükçekmece, Çatalca, Esenler, Esenyurt, Gaziosmanpaşa, Güngören, Küçükçekmece, Silivri and Zeytinburnu districts included,
– Anatolian Side – with Adalar, Ataşehir, Beykoz, Kadıköy, Kartal, Maltepe, Pendik, Şile, Tuzla, Ümraniye and Zeytinburnu districts included.

According to Figure 1 and Figure 2, it is seen that, mostly, the facilities are centred on Historical Peninsula and Tak-

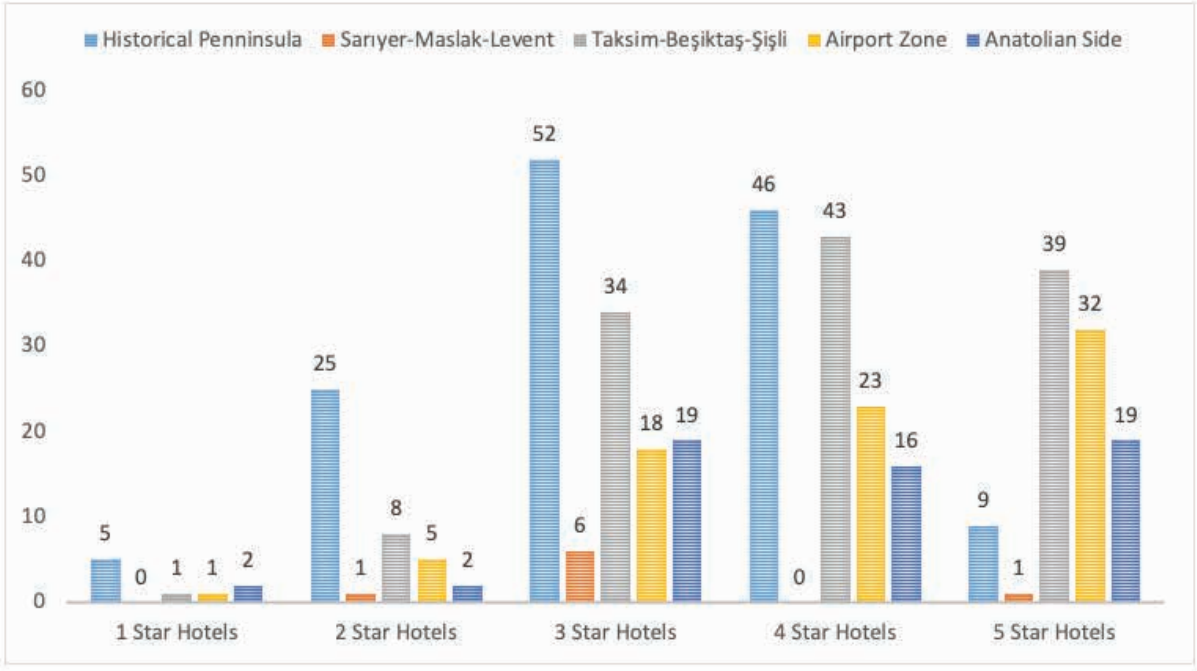


Figure 1: Distribution of hotels in agglomeration zones of Istanbul by star ranking.
Source: Own elaboration based on the data received from Kültür ve Turizm Bakanlığı (2019).

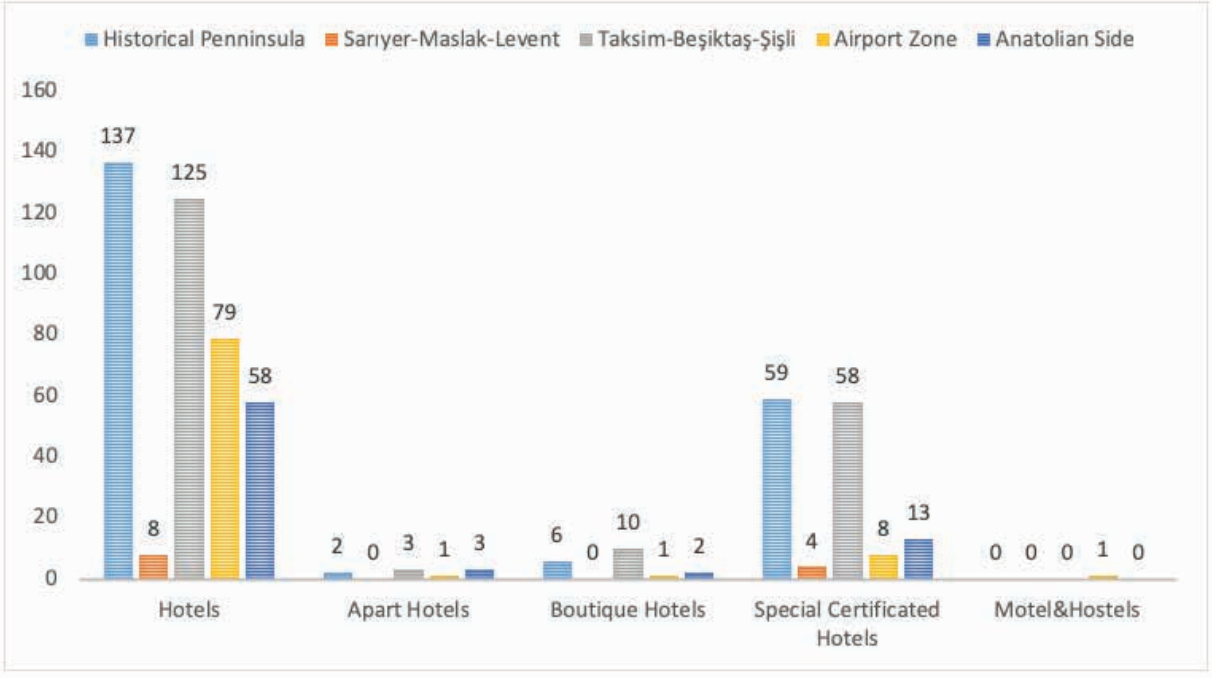


Figure 2: Distribution of accommodation facilities in agglomeration zones of Istanbul by type.
Source: Own elaboration based on the data received from Kültür ve Turizm Bakanlığı (2019).

sim-Beşiktaş-Şişli zones. In the third place comes the Airport Zone.

Thanks to its historical and natural attractions, touristic facilities and recreation areas, Istanbul attracts many tourists from all over the world with different profiles and different purposes. Such that, it is included in the World and European Destination Cities List almost every year, where the visitor and spending trends of the 162 most travelled cities in the world are examined by Mastercard. According to the Destination Cities report issued in 2018, while it ranks third in Europe in terms of the number of incoming tourists, it rose to ninth place in the world ranking. On the other hand, as of the end of 2017, Istanbul hosted 10.7 million visitors, exceeding the predictions made at the end of 2016 in terms of the number of tourists visiting both Ministry- and Municipality-certified facilities (Mastercard, 2018). The distribution of tourists coming to Istanbul according to the agglomeration zones is shown in Figure 3.

Figure 3 shows that there is a tendency to increase the total tourist figures, and most of the tourists stayed in Historical Peninsula and Taksim-Beşiktaş-Şişli zones since 2000. It is also seen that the Airport Zone got a big potential after 2012, and the numbers of tourists stayed there increased rapidly. This figure also proves that Istanbul is one of the cities where a large number of tourists gravitate, also thanks to its attractions, infrastructure and tourism facilities. Especially in recent years, with the increase in tourism activities for business and congress purposes, the need for accommodation in Istanbul is also increasing. Seeing this need for accommodation and the tourist potential for the city, investors also increase their investments in the tourism sector, even if they work in different sectors. The distribution of tourism investments in Istanbul, whose number is increasing every year, is as shown in Table 1.

According to Table 1, although it seems that there has been a decrease in hotel investments in Istanbul in some years, it can be said that there is an increasing investment rate in general. However, these investments do not only cover completely new investments, but also cover continuing investments from previous years.

Although the demand potential for Istanbul seems to necessitate new investments, when the current supply capacity and demand are compared, it is seen that the current bed capacity exceeds the existing tourists. Such that, it is stated that Istanbul hosted a total of 10,297,170 tourists with a bed capacity of 184,742, whereas the total occupancy remained at 62.29%. Nevertheless, it is also observed that, as of 2019, new investments of approximately 21,000 beds have been made in Istanbul in accommodation facilities, especially in hotels. When evaluated in this respect, it is possible to say that the realisation of hotel investments in Istanbul above the demand leads to an increase in capacity, especially in the accommodation sector, and many accommodation businesses cannot

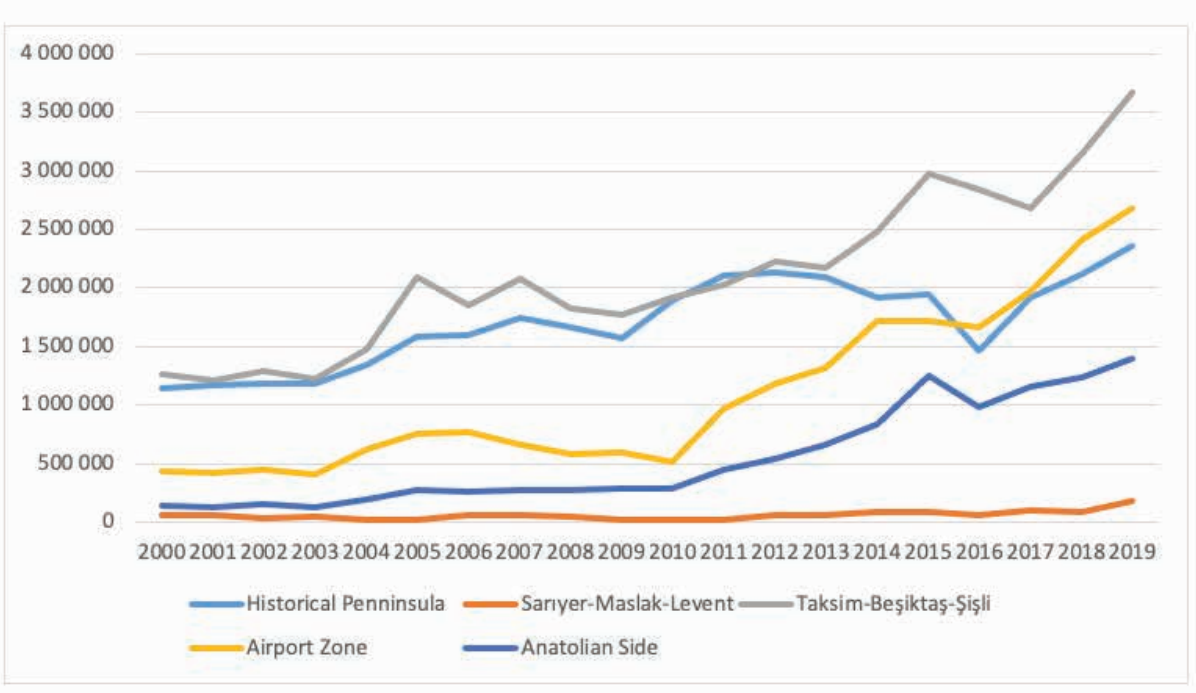


Figure 3: Distribution of tourists in agglomeration zones of Istanbul in the years 2000–2019.
Source: Own elaboration based on the data received from Mastercard (2018).

Table 1: Accommodation investments in Istanbul in the years 2000–2019.

Years	Number of facilities	Number of rooms	Number of beds
2000	82	10,602	25,319
2001	76	10,422	24,307
2002	78	11,230	26,086
2003	84	12,309	28,488
2004	83	11,986	27,802
2005	71	10,665	22,644
2006	69	10,852	23,154
2007	66	10,162	21,942
2008	79	11,711	24,987
2009	85	14,454	30,915
2010	103	16,192	34,787
2011	106	16,821	35,748
2012	130	19,915	41,754
2013	167	24,232	50,230
2014	186	22,197	45,857
2015	207	22,223	45,740
2016	200	21,832	45,399
2017	180	17,404	36,497
2018	171	14,365	30,251
2019	108	10,472	21,056

Source: Own elaboration based on the data received from Kültür ve Turizm Bakanlığı (2019).

operate at full capacity. This situation causes the existing facilities not to get enough share from the demand market. Such that, in the *December 2016 Investment Incentive Report* (TUROB, 2017), it is emphasised that the hotel investments, which have been realised even as of 2016, have remained idle in the current market. It is also stated that the number of empty beds has gradually increased, and this situation created an annual financial loss of approximately 3 billion dollars for hotels.

This study, which was prepared based on all this situation analysis, focuses on the factors for which hotel investment decisions in Istanbul are taken. In this way, it was tried to determine how rational and balanced hotel investments are made.

3.2 Related Works

When the previous researches have been examined, it can be seen that various methods have been used for location site selection for hotels. In the oldest researches, researchers mostly relied on the factors that affected the site selection. For instance, according to two different papers, it is understood that hotels were clustered especially near touristic attractions and the investors preferred the agglomeration effect possibilities while starting up a hotel business (Ertuğral, 1998; Ertuğral & Yakar, 1997). Canina et al. (2005) also researched the effects of agglomeration and discussed the reasons for agglomeration from both production and demand perspectives. According to them, for the production perspective, agglomeration allows individuals in the cluster to have access to resources, leading suppliers, special services and special relationships. For the demand perspectives, agglomeration reduces the consumers' searching costs. Also, they have revealed that agglomeration of hotels affects the hotel prices. Similarly, Napierała & Leśniewska (2015) and Pawlicz & Napierała (2017) found out hotel room rates are affected by hotel locations. According to their different studies, the rates are getting higher when they located at the city centre.

But, as time passes, the research perspectives have been changed, and the number of researches done by mathematical and multiple-criteria decision-making methods are increased day by day. For instance, Chen, Lin, & Huang (2006) prepared a paper that aims to present a fuzzy decision-making approach to deal with the supplier selection problem in a supply chain system. They created a hierarchy of multiple-criteria decision-making model by using triangular fuzzy numbers. Their paper shows that the proposed fuzzy model is very well suited as a decision-making tool for supplier selection decisions and can be applicable to other industries that need multi-criteria selections. Chou, Hsu, & Chen (2008) have applied the fuzzy multi-criteria decision-making model into an international hotel location selection. They used all the methods of fuzzy set theory, linguistic variables, hierarchical structure analysis and fuzzy analytic hierarchy process to evaluate decision-makers' assessments about criteria weightings. Finally, they identified the international hotel location selection in Taiwan by showing the effectiveness of this method.

Ermağan et al. (2017) have determined the most proper destination within three alternatives by evaluating the location site factors with the fuzzy TOPSIS method. Akgöz (2018) has listed the possible destinations in Kyrgyzstan by using the MULTIMOORA technique, which is one of the multiple-criteria decision-making methods.

Song & Ko (2017) have developed two mathematical models by using the demand function in 2017, and as a result of their analysis, they revealed demand and agglomeration effects work simultaneously. According to this, the demand was affected previously by landscape, then transportation, distance to business centres and the

agglomeration effects in order. In their research, Yang et al. (2012) claimed that the high-standard hotels did not consider the agglomeration effects during site selection; however, when accessibility is the point of question, they emphasised that the sites that are near subways are mostly selected by hotel investors as agglomeration zones.

3.3 The Aim and Importance of Research

Despite the current hotel capacity of Istanbul can meet the touristic demand effectively, the reasons of continuing investments have been merely studied. Previous researches mostly focused on subjects like tourism's economic effects, domestic tourism movements, tourism's structural analysis and touristic demand models. This means, there is a gap in the literature in terms of studies about the rationality of the investment decisions taken in line with touristic supply and demand analysis.

In order to fill this gap, this study was designed as an exploratory and relational research model, with the aim of revealing which factors are more effective on location site selections of hotel investments. It is also aimed to discover which location sites are more popular among the investors.

3.4 The Sampling and Data Gathering Process

In order to achieve the goals above, a survey has been applied to hotel investors that have invested in four- or five-stars hotels in Istanbul. To do so, Istanbul is also divided into five investment zones, which will also help to figure out the most popular location sites.

As it will be very difficult and time-consuming to reach all the investors, the convenience sampling method, one of the non-random sampling methods, is used. Chen (2000) stated that the maximum sampling used in the fuzzy technique is 12 people, and the more the sampling is, the more blurred results. That is why, the sampling size is limited with six investors, as Chen (2000) suggests in the analysis technique in order to get the most accurate results.

The survey has been formed in two sections. In the first section, the location site factors are listed, and the investors asked to evaluate according to their perceptions of value towards these factors. Then, in the second section, it is requested from the investors to evaluate the investment zones by considering the location site factors. All the data gathered from the survey has been analysed with fuzzy TOPSIS method, which is one of the multiple-criteria decision-making methods. The touristic supply–demand balance of Istanbul creates the exploratory aspect and the relationship between this balance, and the results of the analysis create the relational aspect of this paper.

3.5 Fuzzy TOPSIS Method

Either in daily or in professional life, the decisions of individuals, who must choose between different alternatives in order to meet any need, can have subjective characteristics and may not always be clear. Such is that, room temperature can be perceived as cold by someone, while as hot by another. Likewise, food may taste good for a person, while it may taste bad for a different one (Ecer, 2006). These kinds of subjective assessments create a fuzzy environment where there are a lot of options between yes and no. And, these options create the fuzzy number sets, which are firstly included in the literature by Zadeh (1968). At this point, multiple-criteria decision-making methods are used to solve the fuzzy environments and ease the decision-making process. One of these methods is fuzzy TOPSIS method, which became popular with the PhD thesis written by Negi in 1989 and a book written by Chan and Hwang in 1992, after being presented by Hwang and Toon by 1981 (Chen, 2000).

On the basis of the method, there are the alternatives to be preferred, the decision criteria of these alternatives to be evaluated and the decision makers who will make the evaluation (Chu, 2002). And, in the implementation process, the decision makers firstly evaluate the importance levels of decision criteria subjectively, and then they rank the alternatives by evaluating those criteria (Ecer, 2006). The assessments of the decision makers are done by using linguistic variables such as very successful, pretty good, very bad, etc. After that, these variables are digitised and converted into triangular fuzzy numbers in order to solve the fuzzy environments in a quantitative way (Chen et al., 2006). In the solution step of the method, the distance coefficient of the digitised linguistic variables between 0 and 1 is calculated with the distance to positive and negative solution set. Finally, the order of preference is calculated by comparing the distance from solution sets (Dündar, Ecer, & Özdemir, 2007).

Even though fuzzy TOPSIS helps people to assess the various quantitative and qualitative criteria together, the researchers agree that there are some deficiencies to it. The final structure of this method has been completed by Chen (2000) by fulfilling these deficiencies. Differing from the others, Chen (2000) accepted the rank between

0 and 1 of values, used in grading step, as v_j^* (1,1,1) and v_j^- (0,0,0) and emphasised the most preferred model should be triangular numbers in terms of calculation easiness (Eleren, 2007). According to him, a triangular fuzzy number is stated as $\tilde{n}$ (n_1,n_2,n_3) and is shown in Figure 4. According to Figure 4, *X* means the universe of discourse, and $\mu_{\tilde{n}}(x)$ means a membership function, which associates with each element in *X* a real number in the interval of [0,1].

The importance weights of the criteria used in fuzzy TOPSIS analyses and the values of the criteria showing qualitative features are accepted as linguistic variables, and these variables are expressed as positive triangular numbers, as shown in Table 2 and Table 3.

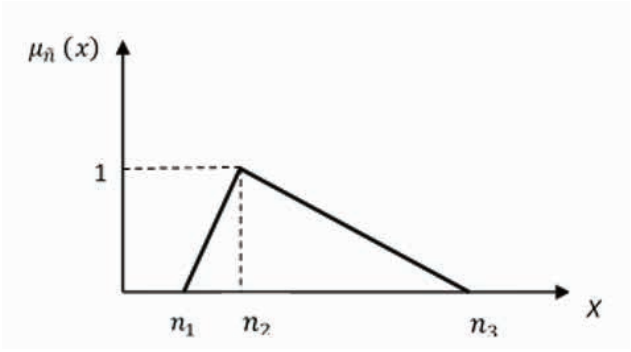


Figure 4: Triangular fuzzy number. Source: Chen (2000: 3).

All the assessments of individuals are digitised by using the numbers shown in the tables above. After this transformation, the nine-step algorithm is used in order to reach the solution. According to the algorithm developed by Chen (2000), the steps of fuzzy TOPSIS, which have a specific formulation to solve, are:

- Determining the decision makers' committee and identifying the decision criteria.
- Evaluating the decision criteria and the alternatives by using the linguistic variables.
- Transforming the linguistic variables into triangular fuzzy numbers and calculating the importance weights of decision criteria and the criteria values of alternatives.
- Construction of fuzzy decision and the normalised fuzzy decision matrixes.
- Construction of the weighted normalised fuzzy decision matrix.
- Figuring the positive and negative ideal fuzzy solution sets.
- Calculating the distance of each alternative from positive and negative solution sets.
- Calculating the distance coefficient of each alternative.

Table 2: The importance weights for linguistic variables of decision criteria.

Abbreviation	Importance	Importance weights		
VH	Very high	0.9	1.0	1.0
H	High	0.7	0.9	1.0
MH	Medium high	0.5	0.7	0.9
M	Medium	0.3	0.5	0.7
ML	Medium low	0.1	0.3	0.5
L	Low	0	0.1	0.3
VL	Very low	0	0	0.1

Source: Chen (2000: 5).

Table 3: The linguistic variables used for alternative criteria.

Abbreviation	Rating	Fuzzy numbers		
VG	Very good	9	10	10
G	Good	7	9	10
MG	Medium good	5	7	9
F	Fair	3	5	7
MP	Medium poor	1	3	5
P	Poor	0	1	3
VP	Very poor	0	0	1

Source: Chen (2000: 5).

– Ranking the alternatives in preference order according to the distance coefficient of each (Chen, 2000: 6).

4 Results

In this research, to determine which factor is more important for the investors in hotel location selection and to figure out the most preferred location site by the fuzzy TOPSIS method, six investors were chosen as decision makers (DM). Then, the six location site factors of natural factors (C1), economical factors (C2), sociological factors (C3), legal factors (C4), psychological factors (C5) and agglomeration effects (C6) were presented to them as decision criteria. The decision makers were asked to evaluate these factors according to their importance levels by using the linguistic variables, which are shown in Table 2. The results of their evaluations are shown in Table 4.

After the evaluation of the factors, the hierarchical structure tree of this research was created and is shown in Figure 5.

After determining the factors that can be effective on hotel location site selection, the city of Istanbul was divided into five investment (agglomeration) zones as alternatives to be ranked in order of preference, such as Historical Peninsula (A1), Sarıyer-Maslak-Levent (A2), Taksim-Beşiktaş-Şişli (A3), Airport Zone (A4) and Anatolian Side (A5). In order to make the preference order of these alternatives, the decision makers were asked to evaluate them by using the decision criteria and the lin-

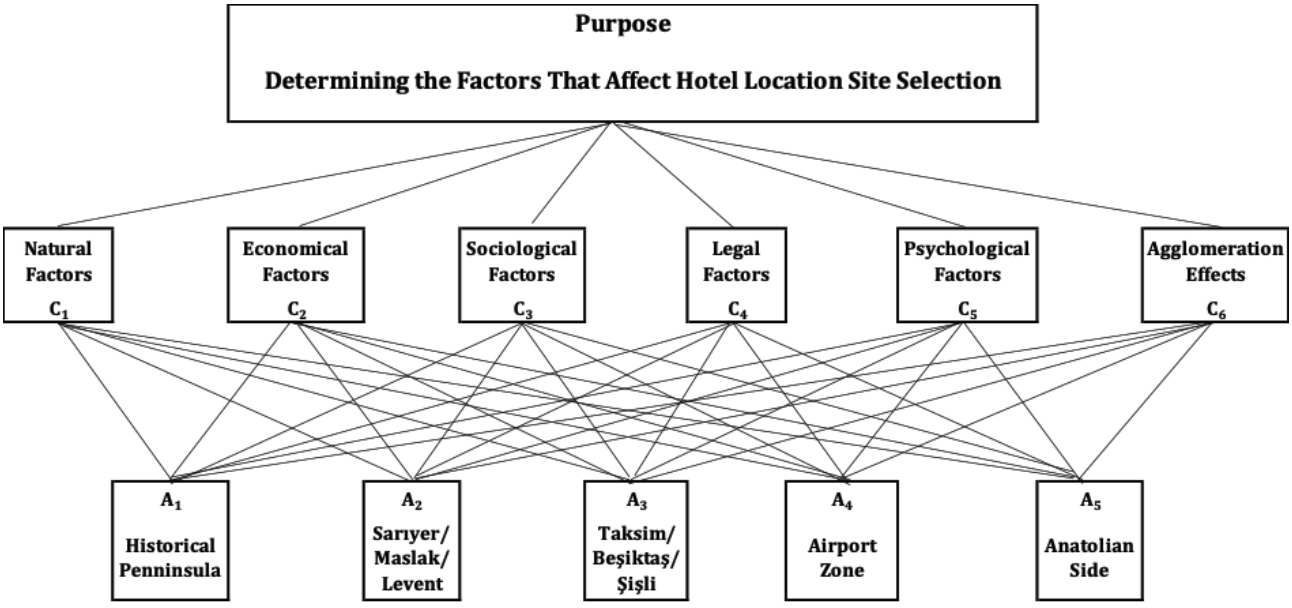


Figure 5: The hierarchical structure tree.

Table 4: Evaluation of decision criteria by decision makers.

Criteria	Decision makers					
	DM1	DM2	DM3	DM4	DM5	DM6
C1	M	MH	M	VL	H	MH
C2	VH	H	H	VH	VH	H
C3	MH	MH	MH	H	VH	M
C4	H	H	H	VH	VH	MH
C5	MH	MH	MH	VL	M	L
C6	H	H	H	VH	VH	MH

Source: Own elaboration. Abbreviations: natural factors (C1), economical factors (C2), sociological factors (C3), legal factors (C4), psychological factors (C5) and agglomeration effects (C6); very high (VH), high (H), medium high (MH), medium (M), medium low (ML), low (L), very low (VL).

Table 5: Evaluation of decision criteria by decision makers.

Criteria	Alternatives	Decision makers					
		DM1	DM2	DM3	DM4	DM5	DM6
C1	A1	G	G	MG	VG	F	F
	A2	MP	MP	F	MP	F	F
	A3	MP	MP	F	MP	G	P
	A4	MP	MP	MP	VP	F	F
	A5	MP	MP	MP	MP	MP	F
C2	A1	MG	MG	F	VG	G	B
	A2	MG	MG	MG	VG	G	P
	A3	G	G	MG	VG	G	MP
	A4	MG	MG	F	VG	MG	VP
	A5	F	F	F	VG	F	P
C3	A1	G	G	MG	MP	G	MP
	A2	G	G	MG	VG	G	MP
	A3	G	G	MG	VG	G	VP
	A4	F	F	MP	VP	G	VP
	A5	F	F	F	F	G	MP
C4	A1	MG	MG	F	MP	VG	VP
	A2	G	G	MG	MP	VG	VP
	A3	G	G	G	MP	VG	MP
	A4	MG	MG	MG	VP	VG	VP
	A5	MG	MG	F	VP	VG	VP
C5	A1	MG	MG	MG	MP	G	P
	A2	G	G	MG	MP	G	MP
	A3	MG	MG	MG	MP	G	MP
	A4	F	F	F	VP	MG	P
	A5	F	F	F	VP	G	MP
C6	A1	G	G	G	G	VG	P
	A2	VG	VG	G	G	VG	VP
	A3	G	G	G	G	VG	VP
	A4	F	F	F	MP	VG	VP
	A5	VG	VG	F	MP	VG	VP

Source: Own elaboration. Abbreviations: natural factors (C1), economical factors (C2), sociological factors (C3), legal factors (C4), psychological factors (C5) and agglomeration effects (C6); Historical Peninsula (A1), Sarıyer-Maslak-Levent (A2), Taksim-Beşiktaş-Şişli (A3), Airport Zone (A4) and Anatolian Side (A5); very good (VG), good (G), medium good (MG), fair (F), medium poor (MP), poor (P), very poor (VP).

Table 6: Transfiguration of importance weights of decision criteria into positive triangular fuzzy numbers.

Criteria	Decision makers					
	DM1	DM2	DM3	DM4	DM5	DM6
C1	0.3;0.5;0.7	0.5;0.7;0.9	0.3;0.5;0.7	0;0;1	0.7;0.9;1	0.5;0.7;0.9
C2	0.9;1;1	0.7;0.9;1	0.7;0.9;1	0.9;1;1	0.9;1;1	0.7;0.9;1
C3	0.5;0.7;0.9	0.5;0.7;0.9	0.5;0.7;0.9	0.7;0.9;1	0.9;1;1	0.3;0.5;0.7
C4	0.7;0.9;1	0.7;0.9;1	0.7;0.9;1	0.9;1;1	0.9;1;1	0.5;0.7;0.9
C5	0.5;0.7;0.9	0.5;0.7;0.9	0.5;0.7;0.9	0;0;1	0.3;0.5;0.7	0;0.1;0.3
C6	0.7;0.9;1	0.7;0.9;1	0.7;0.9;1	0.9;1;1	0.9;1;1	0.5;0.7;0.9

Source: Own elaboration. Abbreviations: natural factors (C1), economical factors (C2), sociological factors (C3), legal factors (C4), psychological factors (C5) and agglomeration effects (C6).

Table 7: Transfiguration of evaluation results of location site alternatives into positive triangular fuzzy numbers.

Criteria	Alternatives	Decision makers					
		DM1	DM2	DM3	DM4	DM5	DM6
C1	A1	7;9;10	7;9;10	5;7;9	9;10;10	3;5;7	3;5;7
	A2	1;3;5	1;3;5	3;5;7	1;3;5	3;5;7	3;5;7
	A3	1;3;5	1;3;5	3;5;7	1;3;5	7;9;10	0;1;3
	A4	1;3;5	1;3;5	1;3;5	0;0;1	3;5;7	3;5;7
	A5	1;3;5	1;3;5	1;3;5	1;3;5	0;0;1	3;5;7
C2	A1	5;7;9	5;7;9	3;5;7	9;10;10	7;9;10	0;1;3
	A2	5;7;9	5;7;9	5;7;9	9;10;10	7;9;10	0;1;3
	A3	7;9;10	7;9;10	5;7;9	9;10;10	7;9;10	1;3;5
	A4	5;7;9	5;7;9	3;5;7	9;10;10	5;7;9	0;0;1
	A5	3;5;7	3;5;7	3;5;7	9;10;10	3;5;7	0;1;3
C3	A1	7;9;10	7;9;10	5;7;9	1;3;5	7;9;10	1;3;5
	A2	7;9;10	7;9;10	5;7;9	9;10;10	7;9;10	1;3;5
	A3	7;9;10	7;9;10	5;7;9	9;10;10	7;9;10	0;0;1
	A4	3;5;7	3;5;7	1;3;5	0;0;1	7;9;10	0;0;1
	A5	3;5;7	3;5;7	3;5;7	3;5;7	7;9;10	1;3;5
C4	A1	5;7;9	5;7;9	3;5;7	1;3;5	9;10;10	0;0;1
	A2	7;9;10	7;9;10	5;7;9	1;3;5	9;10;10	0;0;1
	A3	7;9;10	7;9;10	7;9;10	1;3;5	9;10;10	1;3;5
	A4	5;7;9	5;7;9	5;7;9	0;0;1	9;10;10	0;0;1
	A5	5;7;9	5;7;9	3;5;7	0;0;1	9;10;10	0;0;1
C5	A1	5;7;9	5;7;9	5;7;9	1;3;5	7;9;10	0;1;3
	A2	7;9;10	7;9;10	5;7;9	1;3;5	7;9;10	1;3;5
	A3	5;7;9	5;7;9	5;7;9	1;3;5	7;9;10	1;3;5
	A4	3;5;7	3;5;7	3;5;7	0;0;1	5;7;9	0;1;3
	A5	3;5;7	3;5;7	3;5;7	0;0;1	7;9;10	1;3;5
C6	A1	7;9;10	7;9;10	7;9;10	7;9;10	9;10;10	0;1;3
	A2	9;10;10	9;10;10	7;9;10	7;9;10	9;10;10	0;0;1
	A3	7;9;10	7;9;10	7;9;10	7;9;10	9;10;10	0;0;1
	A4	3;5;7	3;5;7	3;5;7	1;3;5	9;10;10	0;0;1
	A5	5;7;9	5;7;9	3;5;7	1;3;5	9;10;10	0;0;1

Source: Own elaboration. Abbreviations: natural factors (C1), economical factors (C2), sociological factors (C3), legal factors (C4), psychological factors (C5) and agglomeration effects (C6); Historical Peninsula (A1), Sarıyer-Maslak-Levent (A2), Taksim-Beşiktaş-Şişli (A3), Airport Zone (A4) and Anatolian Side (A5).

guistic variables shown in Table 3 before. The results of their assessments are shown as follows in Table 5.

The transfiguration of linguistic variables into positive triangular fuzzy numbers was completed by using the figures determined by Chen (2000) and shown in Table 2 and Table 3, and the results are shown in Table 6 and Table 7.

After transfiguring all the evaluation results into triangular numbers, the following steps of the fuzzy TOPSIS algorithm have been calculated. As the result of this calculation, the decision matrix, the normalised decision matrix, the weights of decision criteria and weighted normalised decision matrix have been determined.

When all normalisation processes are finished, the positive and negative fuzzy solution sets were calculated, as is suggested in the sixth step of the algorithm. These solution sets were used to calculate the distance from the positive and negative solution sets of each alternative. The calculation was completed by using the vertex formula, which is stated as:

$$d(\tilde{m},\tilde{n}) = \sqrt{\frac{1}{3}[(m_1 - n_1)^2 + (m_2 - n_2)^2 + (m_3 - n_3)^2}$$

Then, the distance coefficient of each alternative was calculated by using

$$CC_i = \frac{d_i^-}{d_i^* + d_i^-}$$

and according to these calculations; it is revealed that the hotel location site alternative, which has the biggest coefficient, is the most preferred location site for hotel investments. The other sites are also ranked considering the coefficients as well. All the results are gathered in one table and are shown in Table 8 as follows.

The aim of this study was to determine the factors that affect the location site selections for hotels and to determine the most preferred location site among investors in Istanbul city. With this aim, the factors summarised from the literature review were presented to the selected investors, who were the decision makers of this study, and were asked to evaluate according to their point of view. Then, the investment zones were described to them as hotel location site alternatives. The decision makers have evaluated these alternatives according to their adequacy in terms of these decision factors. All these assessments were analysed by using the fuzzy TOPSIS method, which helps to make preferences easier in fuzzy environments.

According to the results of this study shown in Table 6, when we look at the importance weights of decision criteria, we can say that the weight of C2 is nearer to 1 than the others. This means the most important factor when choosing a location site is economical factors for an investor. On the other hand, when we look at the weights of C4 and C6, we see that the values are near to 1 as well, and there is a little difference as compared to C2. Thus, it is possible to see that legal factors and agglomeration effects are also important while selecting a hotel location site.

According to Table 8, the results of distance coefficients of the alternatives show that the highest value, the nearest value to 1, with 0.9419 belongs to A1. When the other values ranked from biggest to smallest, the preference order is shaped as A1, A3, A2, A5 and A4. That means the most preferred hotel location site is Historical Peninsula among the investors, and the rest are Taksim-Beşiktaş-Şişli, Sarıyer-Maslak-Levent, Anatolian Side and Airport Zone. This preference order matches the distribution of tourist demand by agglomeration zones as well. It also supports that agglomeration factors are important for investors as well as the economical factors. Because, Historical Peninsula includes Fatih, Eminönü, Sultanahmet, Beyazıt and Kazlıçeşme-Samatya zones where there are lots of hotels with different types and sizes with a big economic potential as being a tourist attraction.

5 Conclusions and Discussion

The tourism supply and demand are two components of the tourism industry that work together. The tourism supply sources such as natural attractions and tourism establishments attract more tourists to come; also, as tourists start to visit a destination growingly, this flow causes an economic impact on the regional development, and the destinations try to increase their sources by doing investments. The entrepreneurs who see the economic revenue potential in the tourism industry decide to get involved in this type of business.

However, investing in the tourism industry, especially in the hotel business, can be risky sometimes. Because, as much as there is wavy demand, there is also a big competition in the industry with various hotel alternatives.

Table 8: Distances from fuzzy +/- solutions, the distance coefficients and the preference order.

Alternatives	Sum of distances from fuzzy positive ideal solution d_i^*	Sum of distances from fuzzy negative ideal solution d_i^-	Distance coefficient of each alternative *CCi*	Preference order
A1	2.1517	2.4574	0.9419	1
A2	2.3440	2.6701	0.5325	3
A3	1.6964	2.7422	0.6178	2
A4	3.1868	1.8096	0.3622	5
A5	3.1085	2.0285	0.3949	4

Source: Own elaboration. Abbreviations: Historical Peninsula (A1), Sarıyer-Maslak-Levent (A2), Taksim-Beşiktaş-Şişli (A3), Airport Zone (A4) and Anatolian Side (A5).

Therefore, the investment decisions should be carefully considered by the help of a successful analysis.

To be advantageous in this competition, one of the most important decisions to make is the hotel location site selection. Because, if the location site is correctly selected, it will be beneficial for the regional development along with the shorter return on investments. That is why, factors that are effective for hotel location site selection should be considered properly.

This research shows that economical and legal factors should be taken into consideration with the agglomeration effects of the destination during the investment phase. Because all entrepreneurs wish to involve more profitable projects, and if a location's economic potential is high, they will be more willing to settle their business there. On the other hand, considering the agglomeration effects in location site selection will also provide an advantage to investors in terms of making more accurate demand estimations by analysing the tourism potential in the region and establishing a business that closes the relatively deficient aspects of other businesses. These results match up with the results of the previous studies that have been done by Ertuğral & Yakar (1997), Ertuğral (1998) and Song & Ko (2017) in the literature.

Nevertheless, in doing so, it is necessary to analyse whether the region really needs a new business and whether or not the region's carrying capacity has been exceeded, instead of saying "*there are some similar businesses in here, so another one will be fine*". Or, instead of making an investment decision by saying "*even if there is no hotel in this site, somehow there will be one*", it is necessary to analyse the development potential of the site well. Only in this way, it will be possible to make the most efficient use of the agglomeration effects. Thus, there will be an opportunity to provide competitive advantage in the current market. Otherwise, it will be difficult to get a share of the cake in the region, and the companies will run the risk of negatively affecting each other's activities.

Calculating the order of preference of hotel location site alternatives in the eyes of decision makers will enable a more rational evaluation of the demand for the destination in question for both tourism investors and destination administrations. Thus, together with statistical data such as the number of visitors, relevant institutions and organisations will be able to understand what tourists really care about. In this way, they will be able to develop more accurate investment strategies and policies.

According to the preference order results of this study, the location sites were ranked as Historical Peninsula, Taksim-Beşiktaş-Şişli, Sarıyer-Maslak-Levent, Anatolian Side and Airport Zone. This result can be commented that the investors intend to choose the most agglomerated zones of Istanbul when making their investment decisions. The reasons of this intention may not always be related to the prospects that the factors carry. On the other hand, even though these investment zones are prosperous for investors, the potential of growing investment zones such as the Airport Zone, which includes the highway route that connects to the Istanbul New Airport, should not be forgotten. That is why, in future studies, the other reasons of selecting the places where there are already numerous hotels instead of the places that have a big growth potential in terms of settling as an agglomeration zone should be searched. It is also suggested that the occupancy capacity and in which kind of accommodation establishment the tourists prefer to stay in each agglomeration zone should be studied.

In fuzzy decision-making environments where individuals use their subjective judgements, the usage area of the fuzzy TOPSIS method, which ensures the most accurate choice ranking by measuring the proximity coefficients of the alternatives, is not limited to the choice of destination only. It is anticipated that it will provide useful results in different areas as well as tourism issues such as accommodation, food and beverage and travel establishments, where the level of importance varies from person to person in the decision-making process.

Bionote

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References

[1] Akgöz, E. (2018). Turizm işletmelerinde kuruluş yeri seçimine MULTIMOORA yöntemiyle karar verilmesi [Decision making about tourism businesses' location choice by the MULTIMOORA method]. In K. Ulusoy (Ed.), *2nd International Eurasia Social Sciences Congress Proceedings Book* (pp. 574–589). Antalya.

[2] Akıncı, Z. (2016). *Otel İşletmeciliği ve Yönetimi [Hotel Management and Administration]*. Ankara: Detay Yayıncılık.

[3] Barutçugil, İ. (1989). *Turizm İşletmeciliği [Tourism Management]*. İstanbul: Beta Basım Dağıtım.

[4] Bull, A. O. (1994). Pricing a Motel's Location. *International Journal of Contemporary Hospitality Management*, *6*(6), 10–15. https://doi.org/10.1108/09596119410070422

[5] Canina, L., Enz, C. A., & Harrison, J. S. (2005). Agglomeration Efects and Strategic Orientations: Evidence From The U.S. Lodging Industry. *Academy of Management Journal*, *48*(4), 565–581. https://doi.org/10.5465/amj.2005.17843938

[6] Chan, E. S. W., & Wong, S. C. K. (2006). Hotel selection: When price is not the issue. *Journal of Vacation Marketing*, *12*(2), 142–159. https://doi.org/10.1177/1356766706062154

[7] Chen, C.-T. (2000). Extensions of the TOPSIS for group decision-making under fuzzy environment. *Fuzzy Sets and Systems*, *114*(1), 1–9. https://doi.org/10.1016/S0165-0114(97)00377-1

[8] Chen, C.-T., Lin, C.-T., & Huang, S.-F. (2006). A fuzzy approach for supplier evaluation and selection in supply chain management. *International Journal of Production Economics*, *102*(2), 289–301. https://doi.org/10.1016/j.ijpe.2005.03.009

[9] Chou, T.-Y., Hsu, C.-L., & Chen, M.-C. (2008). A fuzzy multi-criteria decision model for international tourist hotels location selection. *International Journal of Hospitality Management*, *27*(2), 293–301. https://doi.org/10.1016/j.ijhm.2007.07.029

[10] Chu, T.-C. (2002). Facility location selection using fuzzy topsis under group decision. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, *10*(06), 687–701. https://doi.org/10.1142/S0218488502001739

[11] Dündar, S., Ecer, F., & Özdemir, Ş. (2007). Fuzzy TOPSIS yöntemi ile sanal mağazaların web sitelerinin değerlendirilmesi [Evaluation of online stores' web sites by using fuzzy TOPSIS method]. *Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi*, *21*(1), 287–305.

[12] Ecer, F. (2006). Bulanık ortamlarda grup kararı vermeye yardımcı bir yöntem: fuzzy TOPSIS ve bir uygulama [A helping method for decision making in fuzzy environments: fuzzy TOPSIS and an implementation]. *Dokuz Eylül Üniversitesi İşletme Fakültesi Dergisi*, *7*(2), 77–96.

[13] Eleren, A. (2007). Kuruluş yeri seçiminin fuzzy TOPSIS yöntemi ile belirlenmesi: Deri sektörü örneği [Determination of location site choice by fuzzy TOPSIS method: leather sector example]. *Akdeniz İ.İ.B.F. Dergisi*, *13*, 280–295.

[14] Erkan, M., Şahin, M. A., & Nasöz, P. (2015). Turizm işletmelerinde muhasebe, finans ve yatırım proje değerlemesi [Accounting, finance and investment project evaluation in tourism establishments]. In O. Akova, İ. Kızılırmak, & H. Tanrıverdi (Eds.), *Turizm İşletmeciliği Temel Kavramlar ve Uygulamalar* (pp. 321–347). Ankara: Detay Yayıncılık.

[15] Ermağan, U., Kızılırmak, İ., & Yazırdağ, M. (2017). Konaklama işletmeciliğinde kuruluş yeri seçiminin TOPSIS yöntemiyle uygulanması [Implementation of location site selection with TOPSIS method in accommodation business]. In *4th Interdisciplinary Congress of Tourism Researches* (pp. 90–106). Kuşadası.

[16] Ertuğral, S. M. (1998). Otel işletmelerinde kuruluş yeri seçimi: İstanbul'daki beş ve dört yıldızlı oteller ile ilgili bir alan araştırması [Location site selection in hotel establishments: A field research about four and five starred hotels in Istanbul]. *Anatolia: Turizm Araştırmaları Dergisi*, *9*, 33–38.

[17] Ertuğral, S. M., & Yakar, G. (1997). Sürdürülebilir çevrede aglomerasyon alandaki turizm yatırımlarının etken ve etkinliğine ilişkin bir alan çalışması [An empirical research concerning effectiveness and efficiency of tourism investments in the agglomeration area and sustainable development]. *Anatolia: Turizm Araştırmaları Dergisi*, *8*, 95–98.

[18] Istanbul Kalkınma Ajansı - ISTKA. (2019). OECD Territorial Reviews: Istanbul, Turkey. Retrieved December 2, 2019, from https://istka.org.tr/media/117168/oecd-territorial-reviews-istanbul.pdf

[19] Kahraman, N. (2010). *Turizm Yatırım Projeleri Analizi [Tourism Investment Project Analysis]*. Ankara: Detay Yayıncılık.

[20] Kozak, N. (2012). *Turizm Pazarlaması [Tourism Marketing]*. Ankara: Detay Yayıncılık.

[21] Kültür ve Turizm Bakanlığı. (2019). Istanbul Accommodation Statistics. Retrieved January 20, 2020, from https://yigm.ktb.gov.tr/TR-201136/turizm-yatirim-ve-isletme-bakanlik-belgeli-tesis-istati-.html

[22] Mastercard. (2018). Mastercard Target Cities Index Report. Retrieved May 1, 2019, from https://newsroom.mastercard.com/eu/tr/?p=26904

[23] Napierała, T., & Leśniewska, K. (2015). Location-Based Determinants of Accommodation Prices. In M. Kozak & N. Kozak (Eds.), *Tourism Economics: A Practical Perspective* (pp. 124–139). Newcastle upon Tyne: Cambridge Scholars Publishing.

[24] Olalı, H., & Korzay, M. (1993). *Otel İşletmeciliği [Hotel Management]*. İstanbul: Beta Yayınları.

[25] Özel, Ç. H. (2012). Otelcilik endüstrisi [Hospitality Industry]. In M. A. Kozak (Ed.), *Otel İşletmeciliği* (pp. 1–28). Ankara: Detay Yayıncılık.

[26] Pawlicz, A., & Napierała, T. (2017). The determinants of hotel room rates: an analysis of the hotel industry in Warsaw, Poland. *International Journal of Contemporary Hospitality Management*, *29*(1), 571–588. https://doi.org/10.1108/IJCHM-12-2015-0694

[27] Puciato, D. (2020). Behavioral Factors in Hotel Location: a Study of Hotels from Opole Province in Poland. *Turyzm/Tourism*, *30*(1), 95–103. https://doi.org/10.18778/0867-5856.30.1.21

[28] Rahmani, F. (2017). Affecting investment in the tourism sector. *Journal of Administrative Management, Education and Training*, *13*(1), 230–237.

[29] Rutherford, D. G., & O'Fallon, M. J. (2007). *Hotel Management*. Hoboken: John Wiley & Sons Inc.

[30] Song, B. D., & Ko, Y. D. (2017). Quantitative Approaches for Location Decision Strategies of a Hotel Chain Network. *International Journal of Hospitality Management*, *67*, 75–86. https://doi.org/10.1016/j.ijhm.2017.08.004

[31] Tiainen, P. (2013). *Driving Factors of Tourism Investment Decisions and Lapland's Attractiveness in Tourism Investments*. Laurea Applied Sciences University, Espoo.

[32] Tırmıkçıoğlu Çınar, N. (2010). Kuruluş yeri seçiminde bulanık TOPSIS yöntemi ve bankacılık sektöründe bir uygulama [Fuzzy TOPSIS method for facility location selection and an application in banking sector]. *KMÜ Sosyal ve Ekonomik Araştırmalar Dergisi*, *12*(18), 37–45.

[33] TUROB. (2017). December 2016 Investment Incentive Report. Retrieved January 19, 2017, from http://www.turob.com/tr/istatistikler/aralik-2016-turob-yatirim-tesvik-raporu-40cb71f

[34] Uğurlu, K. (2016). Turizm tesisi yatırımlarında ön fizibilite çalışmalarının ve SWOT analizinin önemi: Bolu Göynük doğa oteli örneği [Importance of pre-feasibility study and SWOT analysis on investment of tourism facilities: the case of Bolu Göynük Doğa Hotel]. *Bartın Üniversitesi İ.İ.B.F. Dergisi*, *7*(13), 434–459.

[35] Yang, Y., Luo, H., & Law, R. (2014). Theoretical, empirical, and operational models in hotel location research. *International Journal of Hospitality Management*, *36*, 209–220. https://doi.org/10.1016/j.ijhm.2013.09.004

[36] Yang, Y., Wong, K. K. F., & Wang, T. (2012). How do hotels choose their location? Evidence from hotels in Beijing. *International Journal of Hospitality Management*, *31*(3), 675–685. https://doi.org/10.1016/j.ijhm.2011.09.003

[37] Zadeh, L. . (1968). Probability measures of Fuzzy events. *Journal of Mathematical Analysis and Applications*, *23*(2), 421–427. https://doi.org/10.1016/0022-247X(68)90078-4