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Assessment of the Pamukkale Destination Image According to Attraction Factors

Pamukkale destinasyonu imajının çekicilik faktörlerine göre değerlendirilmesi

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Abstract

The attraction image of a tourism center is an important factor in the formation of the destination image. The present study is designed to determine the attraction factors and superiorities of the Pamukkale destination image from the perspective of foreign tourists and to assess destination alternatives. Both because the issue of image assessment is relative and because the issue of determining the alternatives require making a multi-variable decision, the theory of fuzzy sets has been used as the research method. The image of Pamukkale and its vicinity according to the attraction factors is divided into four areas: Pamukkale travertine, ancient monuments, health/spa tourism and shopping opportunities. Because the attraction factor image of Pamukkale travertine is dominant, the levels of the other factors have remained low. Therefore, the region is perceived not as a place in which to spend several days on the basis of tourism but as a sightseeing place to spend a few hours. To mediate this perception, the {B-E} points where there are opportunities for Pamukkale travertine, ancient monuments and health/spa tourism should be evaluated as an entire destination marketing scheme.

Keywords: *Pamukkale Turkey, Destination image, Attraction factors, Fuzzy theory; FCM, AHP and TOPSIS*

JEL codes: *L83, Z3*

Özet

Bir turizm merkezinin çekicilik özelliği, destinasyon imajının oluşumunda önemli bir unsurdur. Bu çalışmada, Pamukkale destinasyonu imajnın çekicilik faktörlerinin ve üstünlüklerinin yabancı turistler açısından belirlenmesi ve destinasyon alternatiflerinin değerlendirilmesi amaçlanmaktadır. İmaj değerlendirme konusunun göreceli olmasından ve alternatiflerin belirlenmesi konusunun çok değişkenli karar vermeyi gerektirdiğinden dolayı, araştırmanın yöntemi olarak bulanık kümeler kuramından yararlanılmıştır. Pamukkale ve çevresinin çekicilik faktörlerine göre imajı dört grupta toplanmış olup bunlar sırasıyla; Pamukkale travertenleri, antik kentler, sağlık/SPA turizmi ve alışveriş imkanları olarak belirlenmiştir. Pamukkale travertenleri çekicilik faktörü imajı baskın olduğundan diğer faktörlerin düzeyleri zayıf kalmıştır. Bu nedenle bölge, turizm açısından yaşanılacak yer değil, birkaç saatliğine görülüp dönülecek yer şeklinde algılanmaktadır. Bu algıyı aşmak için Pamukkale travertenleri, antik kentler, sağlık/SPA turizmi fırsatlarının bulunduğu {B-E} noktaları bir bütün destinasyon pazarlanması olarak değerlendirilmelidir.

Anahtar kelimeler: *Pamukkale Türkiye, Destinasyon imajı, Çekicililik faktörleri, BBH, AHS ve TOPSIS*

JEL kodları: *L83, Z3*

1. INTRODUCTION

The subject of destination image is significantly important from the aspect of tourism marketing because it can affect not only the country in which the destination is located but also other destinations and products from the tourists' country of origin in the destination country. The attraction image of a tourism center is an important factor in the formation of the destination image.

Studies on destination image have gained impetus over the past twenty years, and the most important of these studies are concerned with consumer behavior in the destination image (Gartner, 1994; Pizam & Milman, 1993; Sharaiha & Collins, 1992; Walmsley & Young, 1998). Numerous studies have been conducted on the analysis of the destination image (Baloğlu & McCleary, 1999; Pike, 2002). Conversely, other studies have been designed to measure the perceived images of the destinations (Baloğlu & Mangaloğlu, 2001; Echtner & Ritchie, 2003; Milfelner et al., 2011; O'Leary & Deegan, 2002; Yang et al., 2012). In recent years, however, attention has been drawn to the different methods used in the analyses of these studies (Chen & Phou, 2013; Hunter & Suh, 2007; Yang et al., 2012). There are various studies in which fuzzy set theory has been used in tourism studies in recent years (Fu &Tzeng, 2016; Horng et al., 2013; Cho et al., 2015). Huang and Peng's studies (2012) on competition in the tourism industries using the TOPSIS method are examples of the use of fuzzy set theory. Zhang et al. (2011) assessed tourism destination competitiveness in China using a similar methodology.

In this study, we use the perceived image assessment model developed by Hasiloglu (2012) using fuzzy analytic hierarchy process (AHP), TOPSIS (technique for order preference by similarity to ideal solution) and cognitive mapping methods based on fuzzy set theory. With this model, it is possible to determine which factors should be emphasized in the event that it is necessary to identify the factors that affect perceived image as well as image evaluation and image change. In other words, it may be possible to make the appropriate recommendations regarding the determination and solution of the problem using this model.

2. LITERATURE REVIEW

According to Barich and Kotler (1991), image is defined as the whole of one's belief in, attitudes toward and impressions about a product, firm, place or individual. Accordingly, it is formed according to the perception process of the consumer. The transferrable quality of the perceived image is a significant subject that is mentioned in marketing strategy studies. For example, a consumer who only knows a mobile phone made by Samsung may transfer the positive image he holds of this product to other Samsung products, such as washing machines and televisions, thus making a decision to buy those products from Samsung. Similarly, such transference is validated in the studies regarding country image. In a model called the "Halo effect" (Han, 1989), it was maintained that country image affects the beliefs of consumers who have poor or limited knowledge of products and that their beliefs determine their attitudes. In the Halo effect model, if there is scarce knowledge about the product or service, there is a tendency to refer to the country image or the image of the other products from that country. Conversely, when consumers are not unfamiliar with the product, it is argued that country image is a concept that summarizes the consumers' beliefs about the qualities of the product and that it directly affects the consumers' attitudes about the trademark. The model that Han (1989) called the "summary effect" is defined as the state in which consumers with high knowledge of the

product transfer their views of and attitudes about that product to the country of origin of the product. According to the summary effect model, if the consumers have more knowledge about the products of a country than about that country, they transfer their knowledge of the product to the country. Therefore, a destination image may affect the country in which that destination is located as well as the other destination and country of origin products, and in turn, the image may be affected by the country or the products.

One of the pioneers of the image studies, Nagashima (1970), assessed the image dimensions using the semantic differential scale. Han and Terpstra (1988) reduced the scale developed by Nagashima (1970) to five dimensions and evaluated the country image from the aspects of technically developed level, prestige value, workmanship, price and service. The dimension of service is also closely connected with the issue of destination image in tourism.

As in the general concept of image, destination image in tourism is expressed as the whole of the potential tourist's belief in, attitude toward, and perception, views and impressions about the destination (Ruzzier, 2010; Gallarza et al., 2002; Gartner, 1994; Hunt, 1975). Early studies found that destination image is an effective factor in the process of the tourist's decision to buy and to select the destination (Dadgostar & Isotalo, 1992; Jenkins 1999; Milman & Pizam, 1995).

Baloğlu and McCleary (1999) maintained that the perception of touristic qualities of a tourism center is the most important factor in the formation of the destination image. The touristic qualities of a tourism center are also the tourism attraction of that center. Alhemoud and Armstrong (1996) separated the tourism attractions that they used to evaluate the perceived image in their study into the following four groups: natural attractions, historical attractions, cultural attractions, and manufactured attractions. This study is intended to evaluate the image of Pamukkale and its vicinity of Denizli in Turkey for foreign tourists, considering the tourism attraction factors.

3. METHODOLOGY

3.1. The Purpose and Questions of the Study

The purpose of the study is to determine the attraction factors and the superiority of the Pamukkale destination image for foreign tourists and to evaluate the destination alternatives. The questions addressed by the study are as follows:

Q1. What is the attraction factors of the Pamukkale destination image?

Q2. What are the levels of preference among the attraction image factors?

Q3. What are the privileged destination alternatives?

Both because the issue of image evaluation in the purpose of the study is relative and because the issue of the determination of the alternatives depending on the order of preference require making a multi-variable decision, the theory of fuzzy sets was used as the methodology for this study. The approach of fuzzy logic developed by Zadeh (1965) was especially used in the solution of the problems and decision-making practices. In the defuzzification of the fuzzy numbers, the fuzzy ranking function used by Liou and Wang (1992) was utilized.

3.2. Data Collection and Research Model

In the research model, the process used by Hasiloglu (2012) to evaluate the origin country image was used (Figure 1). The first stage of the model is the collection of the data. The methodology of the study (Eden, 1988; Saaty, 1977) suggests that in collecting the data, specialized people (experts) on the subject should be referenced. Depending on the complexity of the subject and the dimension of the factors, the number of specialized people should not exceed the number of the members in the study group. Accordingly, the data have been gathered from a sum of nine people: three guides with direct contact with the tourists in the region, three front line staff members from the accommodation facility and three tourism/marketing academic staff members.

The collected data were used to determine the attraction image factors of Pamukkale and its vicinity calculate the weights of the factors and list the destination alternatives. To determine the attraction image factors, fuzzy cognitive mapping (FCM) was used. To calculate the weights of the factors and alternatives, fuzzy analytic hierarchy process (AHP) was used. To order the alternatives, both fuzzy AHP and TOPSIS (technique for order preference by similarity to ideal solution) method were used. The TOPSIS method developed by Hwang and Yoon (1981) is a solution process based on the principle of the proximity of the decision points to the ideal solution and is used in problem solving and decision making (Zanakis et al., 1998).

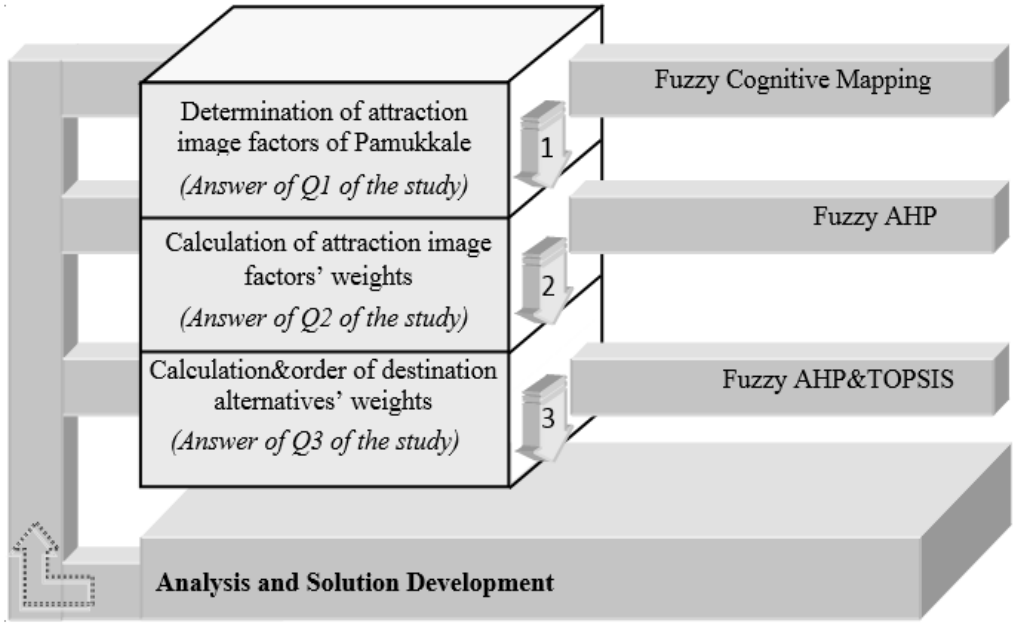

Figure 1. Research model
Reference: Hasiloglu (2012, p.170)

In the first stage of the model, the FCM method was used. Guiding the behaviors of the person or group, the cognitive maps show the relationships between quantifiable or unquantifiable thoughts and events within a systematic framework (Chandra & Newburry, 1997). The cognitive mapping method, the origin of which is based on the graphics theory formulated by the mathematician Euler in 1736. This is a method used to define the cause-and-effect

relationships between the modelling and compounds of the complex systems. Accordingly, it has been used in many social and technical sciences (Çoban & Seçme, 2005; Kandasamy & Smarandache, 2003; Özesmi & Özesmi, 2004).

In accordance with the approach of the fuzzy set theory, lingual and visual terms were used rather than numerical terms when making the fuzzy cognitive maps. For this reason, the arrows on the map are drawn thick or thin, depending on the strength of the causality relationship. The decision maker determines the fuzzy value of each arrow, depending on its thickness.

Developed by Saaty (1977) and used as the second stage of the model, the analytic hierarchy process (AHP) method is commonly used in the field of social sciences today. The most important feature of the method is that the practitioners' subjective views in the process of decision making are usable in a scientific framework. The earliest studies on fuzzy AHP were conducted using the triangular fuzzy numbers of Van Laarhoven and Pedrytcz (1983) and the trapezoidal fuzzy numbers of Buckley (1985). In this study, triangular fuzzy numbers were used. In addition, various methods were developed to calculate the fuzzy weights (Chang, 1996; Chen & Chen, 2005), and the fuzzy geometric mean method was used in the study. According to this method, the fuzzy geometric average of Ã matrix is taken first. The reverse of the obtained vector and the sum of the vector's elements are found. As a result of the procedure, the fuzzy eight vector is obtained by multiplying each fuzzy geometric average vector element by the vector the reverse of which is taken. For a weight factor to be consistent in AHP, the (CR) value of the consistency rate should be less than 0.10. If the CR value obtained is higher than 0.10, inconsistency in the value of Ã matrix elements is expected, and a double comparison procedure is thus repeated (Saaty, 2001, p.23).

In the last stage of our research model, the fuzzy AHP and TOPSIS methods were used, and the preference ordering of the alternatives was found.

When calculating the ordering, positive and negative ideal solution functions of the TOPSIS method were used (Agrawal et al., 1991; Hwang & Yoon, 1981), and the relative proximity coefficients to the ideal solution were found.

4. RESULTS

4.1. Determination of Destination Attraction Image Factors

At the stage when the first findings of our study were obtained, the aim was to determine the attraction factors of the Pamukkale destination image for foreign tourists. The data were collected from the participants in accordance with the cognitive mapping methodology. Table 1 contains the variable number (N) and the connection numbers of the individual cognitive map and decision cognitive map (C) as well as the connection index (D) value. As observed in the table, the average density index (D), which is the density value of the individual maps, was determined to be 0.46, and the density index of decision cognitive map was found to be 0.48.

Table 1. Density Values of the Cognitive Mapping

Maps (Number of Maps: 9)		Variable N	Connection C	Density D
Individual Cognitive Maps	Total	45	104	0.46
	Mean	5	11.56	
	Std. Deviation	1	2.6	
Decision Cognitive Map		**1+4**	**12**	**0.48**

The drawn decision cognitive map is provided in Figure 2. As observed in the map, in addition to the destination image, four variables (shopping opportunity, health/spa tourism, Pamukkale travertine and ancient monuments) and 12 connections were determined. The variable of ancient monuments is primarily influenced and affected by the Hierapolis, Laodikeia and Cleopatra ancient pools; the variable of health/spa tourism is primarily affected by the thermal springs in Karahayıt and Pamukkale towns; the variable of shopping opportunity is primarily affected by regional products and factory outlets. The order of preference according to the centrality degrees of the variables is as follows: Pamukkale travertine, ancient monuments, health/spa tourism and shopping opportunity.

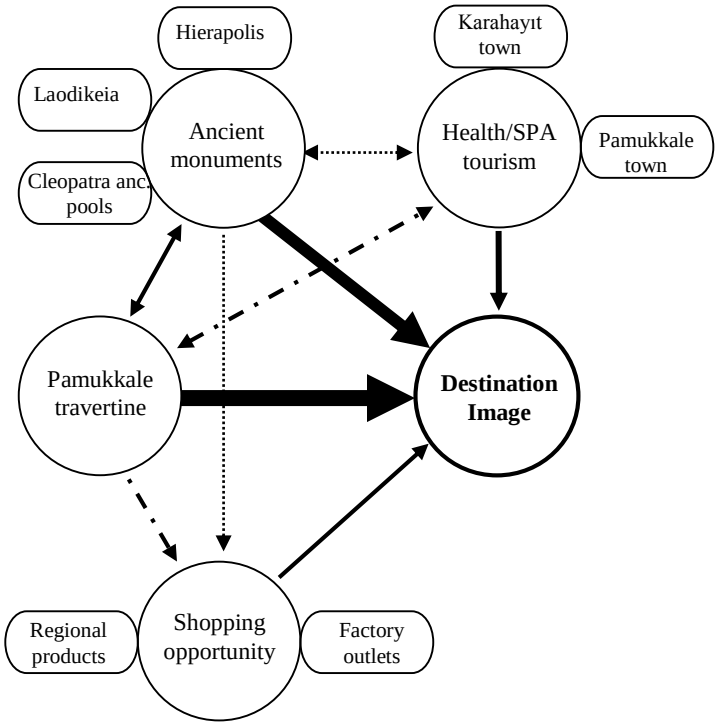

Figure 2. Decision Cognitive Map

4.2. Calculation of the Fuzzy Weights for the Factors and Alternatives

The stage after determining the attraction image factors is calculating the fuzzy weights for these factors. At the end of this stage, when the fuzzy AHP method was applied, the fuzzy weights of each alternative according to the criteria were found. Figure 3 presents the hierarchical structure with the attraction image factors and destination alternatives. As observed from the hierarchical structure, the variables consist of the attraction image factors obtained from the FCM method. The alternatives were categorized into five groups according to the sub-destinations within the scope of the research (Figure 4).

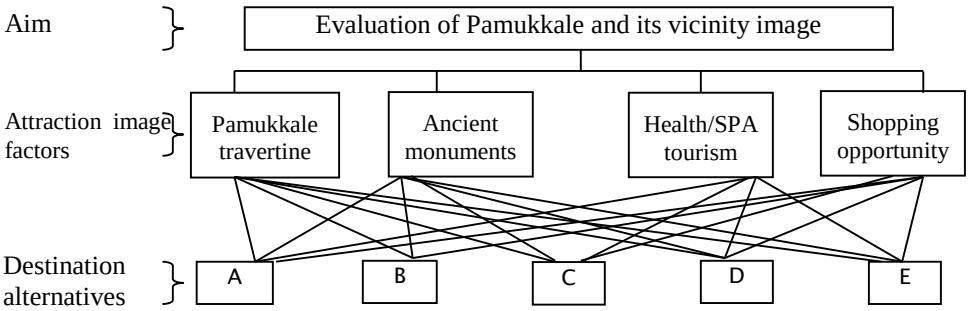

Figure 3. Fuzzy AHP Hierarchical Structure

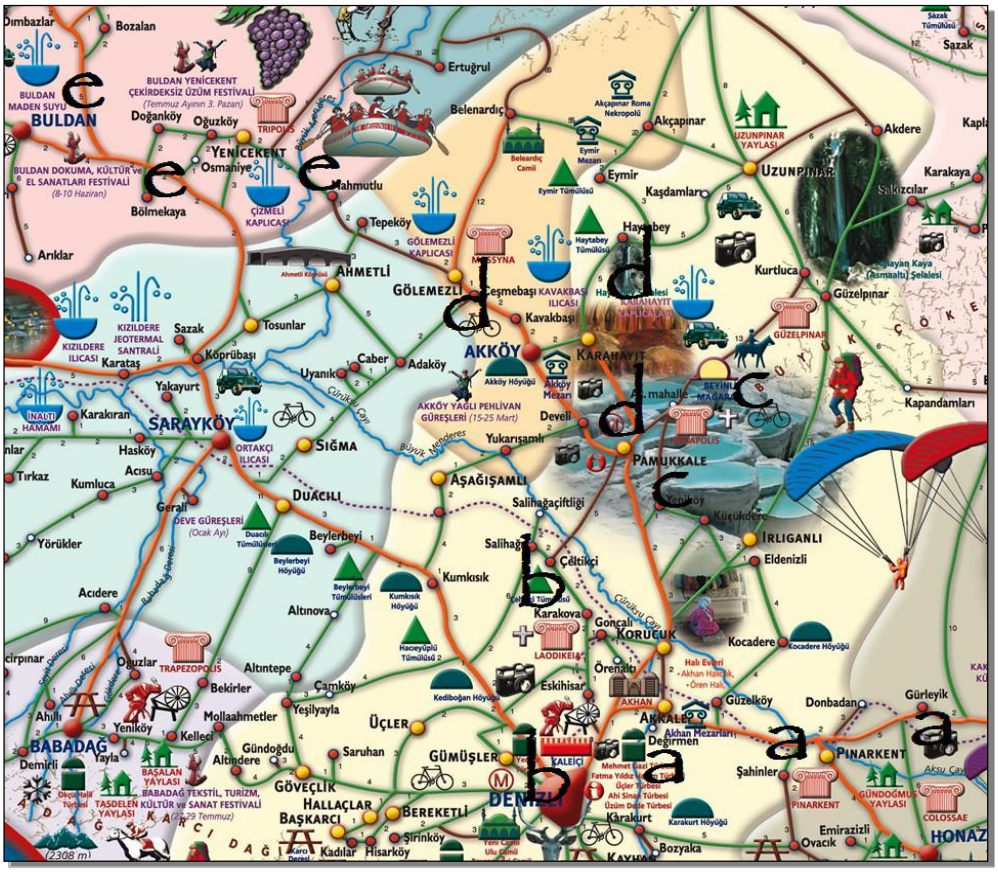

Figure 4. Destination alternatives
Reference: Republic of Turkey Ministry of Culture and Tourism

Table 2 shows the weights of the factors according to the fuzzy AHP method. Similar to the finding of centrality degrees in FCM, Pamukkale travertine's factor has the highest weight, while the factor of shopping opportunity has the lowest. With a CR=0.012 (CR<0.10), the procedure conducted appears to be consistent.

Table 2. Fuzzy Weights of Factors

	Fuzzy Geo. Mean	**Fuzzy Weights**	**W** (α=0,5)	**Consistency**
Pamukkale travertine	(1.31 , 1.96 , 2.43)	(0.2 , 0.42 , 0.79)	0.46	λ = 4.034 CR = 0.012 Consistent
Ancient monuments	(1 , 1.56 , 2.11)	(0.15 , 0.33 , 0.69)	0.38	
Health/SPA tourism	(0.47 , 0.75 , 1.41)	(0.07 , 0.16 , 0.46)	0.21	
Shopping opportunity	(0.29 , 0.42 , 0.75)	(0.04 , 0.09 , 0.24)	0.12	

Table 3 contains the fuzzy weights obtained from the double comparison fuzzy values of each factor according to the alternatives.

Table 3. Fuzzy Weights of the Alternatives According to the Criteria

Destination.	Pamukkale / travertine	Antique cities	Thermal / health	Shopping tourism
A	(0.04, 0.08, 0.17)	(0.05, 0.12, 0.38)	(0.04, 0.07, 0.15)	(0.07, 0.2, 0.52)
B	(0.05, 0.08, 0.17)	(0.12, 0.29, 0.69)	(0.04, 0.08, 0.19)	(0.15, 0.34, 0.75)
C	(0.23, 0.48, 1.00)	(0.13, 0.36, 0.79)	(0.14, 0.27, 0.47)	(0.04, 0.08, 0.24)
D	(0.11, 0.29, 0.63)	(0.06, 0.12, 0.33)	(0.2, 0.37, 0.7)	(0.04, 0.09, 0.24)
E	(0.04, 0.07, 0.14)	(0.05, 0.11, 0.29)	(0.09, 0.22, 0.45)	(0.11, 0.28, 0.66)
CR	0.024 *Consistent*	0.050 *Consistent*	0.009 *Consistent*	0.023 *Consistent*

4.3. Ordering of the Alternatives

At the stage when the last findings of the study were attained, the advantage ordering of the alternatives in this hierarchical structure was determined (Table 4). Each column in the table indicates the advantage order and the weight of the alternatives.

In all cases in the interval of $\alpha \in [0,1]$ (Liou & Wang, 1992), the advantage ordering of the alternatives is almost the same. In each case, the weights of the B, C, D and E destination alternatives are very close to each other. Accordingly, when the B, C, D and E destinations are a whole group (integrated {B-E} destination), the A destination is separated from the others.

Table 4. Normalized Distribution of Destination Alternatives

Destinations	C_I (α=0.1)		C_{II} (α=0.3)		C_{III} (α=0.5)		C_{IV} (α=0.7)		C_V (α=0.9)	
A	0.120	5	0.123	5	0.124	5	0.125	5	0.126	5
B	0.216	4	0.211	4	0.208	4	0.207	4	0.206	4
C	0.216	3	0.223	2	0.226	1	0.228	1	0.230	1
D	0.224	2	0.224	1	0.224	2	0.224	2	0.224	2
E	0.225	1	0.220	3	0.218	3	0.216	3	0.215	3

5. CONCLUSION AND IMPLICATIONS

The images of Pamukkale and its vicinity according to the attraction factors and foreign tourists are collected and divided into four groups. The groups are as follows: Pamukkale travertine, ancient monuments, health/spa tourism and shopping opportunity. The image of the Pamukkale travertine, with the largest weight, is above the others and more dominant. Once heard, the word "Pamukkale" creates an image of the travertine as a natural wonder. According to Halo-summary model, the image of the Pamukkale travertine also reflects the image of Turkish tourism. However, the dominance of this image has overshadowed the other attraction factors of the region. Conversely, the other attraction factors, except for Pamukkale, contribute more to the economy of the region.

Because Pamukkale is very close to the Mediterranean and Aegean coasts, it is usually marketed as a one-day excursion. The foreign tourists thus traveling to the Aegean and Mediterranean coastlines visit the region to see the travertine during daily excursions. Most of the tourists lack prior knowledge of the region and realize only during their visit to Pamukkale that the region has more features and more to offer than just the travertine. The same is true for the foreign tourists who travel independent of the tours. They, too, plan accommodations for one day because of the dominant image of the Pamukkale travertine. The Pamukkale travertine is perceived as something to see, not as a place to spend significant time as a tourist. Therefore, most of the foreign tourists who travel to the region both independently and with a guide develop a better perception of the other attraction features when they visit the region because of the dominating influence of the image of the Pamukkale travertine. However, this delayed perception does not cause the tourists to change their travel plans and increase the length of their stay.

As observed in the final findings on the ordering of the alternatives, the B, C, D and E destinations should be marketed as a whole. The Pamukkale travertine is only on the C point in the region, whereas in terms of the attraction factors of the travertine, the ancient monuments and health/spa, B, C D and E are intertwined (integrated {B-E} destination).

The most important pre-Hellenistic settlement of the region is the Colossae antique city in Herodotus and Xenophon. During the Hellenistic era, however, Tripoli was in the west of Big Menderes River, Karura, Trapezpolis, Attouda and Laodikeia across the Lykos Plain, while north of Laodikeia was Hierapolis. Of the antique cities in our study, Tripolis is on the E point, Mossyna on the D point, Hierapolis on the C point, Laodikeia on the B point and Colossae on the A point. For example, the antique city of Hierapolis is cited as the "Holy City" in the

archaeological literature. One of the seven reputed churches of Minor Asia, which has an important place in Christianity, is in Laodikeia.

Another attraction image factor in the region is spa/health tourism. The region lying between the towns of Pamukkale, Karahayıt, Akköy and Yenicekent is a thermal field that has a rich potential for health tourism in Turkey. In our study, Pamukkale is on the C and D destination alternative; Karahayıt and Akköy are on the D destination alternative; and Yenicekent is on the E destination alternative. The traces of settlement on the Lykos Plain covering this region date to 500,000 years ago. The presence of thermal springs in this plain is one of the most important reasons for this span. Archaeological digs in the region indicate that these thermal waters have been used for treatment purposes for thousands of years. In the region of geothermal springs with varying temperatures ranging from 36°C to 125°C, accommodations, entertainment, recreation and sports facilities that offer quality international standards are available. It is known that these waters are beneficial for cardiac diseases, blood pressure issues, rheumatism, rachitism, paralysis, neurologic diseases and such skin disorders as itching and scabies.

Another attraction image factor in the study is tourism shopping. However, this factor is very low in terms of weight and its position (A point) among the destination alternatives. The A point is where factory sales stores are located. However, the local handicrafts are very popular in the region.

Centuries ago, textile products were produced by hand-weaving tools in almost every house in the city, and such products were the favorites of the monarchs of the Ottoman Empire and their relatives. The fact that the products were of artistic quality and contained no chemical agents is considered the most important reason for the sustained interest in them. The hand-weaving, using original products, is an existing art in most parts within the provincial borders of Denizli. However, as can be understood from the findings of the study, it is not proper to sell such handiworks in shopping centers (A point) such as factory outlets. Instead, it is considered better to carry the handicrafts of the region to the integrated {B-E} destination.

The most important limitation of the study is that it has evaluated the region from the perspectives of the northern European tourists who visit it most frequently, while the perceptions of the citizens of other countries towards the region of Pamukkale may differ. Another limitation is that the collected data are of qualitative features. Although the data have been collected from the experts and these experts have a higher potential of representing the target mass, it is difficult to generalize for more than one million foreign tourists visiting the region.

As a result, Pamukkale and its vicinity have significant tourism potential with its natural wonder, cultural features, health benefits, and shopping opportunities. One of the most important features of the Pamukkale travertine is its beauty. The term Pamukkale evokes an unparalleled and matchless natural wonder with its white land cover. However, this evocation has not been reflected in the other elements of tourism, and in fact, it has even been disregarded. Pamukkale is also the name of the local town in the region. There are a number of accommodation sites in and around the town, most of which, in both Pamukkale and Karahayit, have geothermal springs. Therefore, these two towns also have a potential for health tourism. Moreover, the ancient city of Hierapolis, which is very close to the travertine

of Pamukkale and the Cleopatra ancient pools, has strong tourism attraction potential. However, unfortunately, both ancient monuments and health/spa tourism opportunities are ranked low as tourist attractions. Therefore, the region is perceived not as a place to spend a few days, but as a place to spend a few hours. The image transfer has changed accordingly. As long as the image transfer problem is not resolved, it is difficult for tourists to spend more than one day in the region. To overcome this perception, the {B-E} points with the Pamukkale travertine, ancient monuments and health/spa tourism opportunities should be marketed as a whole destination. Instead of providing tours to the points where there are factory outlets in the region, it would be better to offer products from these outlets along with the unique handicrafts and products of the region at the integrated {B-E} destination.

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