

# The Perceptual Maps of the Regions in Turkey Where Mass Tourism is Implemented in Terms of Sustainable Tourism

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## Abstract

Tourism is an important fact for developed and developing countries due to its economic, cultural and environmental effects. The developments in the tourism sector have positive effects such as increasing the employment and national income; but also some negative effects when we consider from social, cultural and environmental dimensions. Such negative effects are more frequently seen in regions where mass tourism is implemented. This study used the data of the years between 2001 and 2012 and the multi-dimension scaling method for Antalya, Mugla, Izmir, Aydin and Nevsehir where mass tourism is implemented was used to draw perceptual maps and the changes within 10 years was examined. The analysis has used data such as tourism incomes, number of tourists, number of facilities, number of beds, tourism investments, total employment, green areas, forestry, buildings, solid waste and water consumption. According to the date of eleven variables used in two-dimensional perceptual maps, the dimensions are set as economic and environmental dimensions. It has been seen that in terms of economy, Antalya was in a better position than other cities in 2011 and Izmir was in a positive location in terms of environment. In 2012, it has been determined that Aydin has shown a progress at environmental dimension.

**Keywords:** Tourism, Sustainable Tourism, Mass Tourism, Multidimensional Scaling

**Jel Codes:** C39, L83

## 1. Introduction

When we consider the economic, environmental and cultural effects, we can say that tourism is an important fact for all the countries, whether developed or developing. Tourism sector is becoming global and the local travel agencies and national tour operators are being replaced by international companies. The number of tourists increases each year, which cause a rise of employment and national income in countries that receive tourists and contribute to balance of payments. But, in addition to these positive impacts, the ongoing decrease of individual and group travels are being replaced by mass tourism; which causes different negative social, cultural and ecological changes.

Turkey has a young population and one of the most important problems is the economic ones. When we examine the factor of labor with the increasing unemployment rates in our country; we see a significant increase of labor supply. One of the ways to overcome this excess and to partially prevent the increasing unemployment rates is to develop the service sector. Tourism has the first place in service sector and it is remarkable as it reaches to the best result with the least investment.

Lately, Turkey has encouraged tourism in significant amounts and adopted the policies of increasing the number of tourists, income from foreign tourism and to overcome the balance of payments gaps and economic growth; which had been a successful policy. But, in regions where mass tourism became prevalent; there have been significant social, cultural and ecological changes.

The aim of this study is to examine the economic and environmental dimensions for five cities where mass tourism is made in Turkey (Antalya, Mugla, Nevsehir, Izmir and Aydin). For this purpose, multidimensional scaling method was used. 2001 and 2012 were considered in the study and the changes in these cities where mass tourism is done within 10 years period is also analyzed.

In the second chapter concepts of tourism and mass tourism and the tourism sector in Turkey was considered in the third chapter. Fourth and fifth chapters have explained the methodology and data. Sixth chapter is about the findings. Final chapter contains result and evaluations.

## 2. Tourism, Sustainable Tourism and Mass Tourism

Although tourism has been defined in very different ways throughout time; today it is defined as the travels of people to places other than they live and work; and the events and relations built by them during their visits with

tourism businesses and their consumption of goods and services provided by such organizations (Ahipaşaoğlu 2005). Another definition of tourism is the complete relations and events that appear due to travel and accommodation of foreigners as long as they are not transformed into settlement (Barutçugil 1989). Ministry of Culture and Tourism defines tourism as "travels made by people to another place than they reside for business, free time and similar goals with the condition of not exceeding 12 months".

A unit is needed in order to understand tourism, and to state and measure its scope. As the individual is the main factor that creates tourism, our unit is individual. Individual causes and directs tourism and also is considered as the focal point of it and that individual is named as tourist.

In order to collect the statistics on the tourism movements within the world in a proper and accurate way and to obtain information about the volume of tourism and other aspects; international institutions have made the necessary definitions and countries have tried to obtain information by these definitions (Toskay 1983).

According to the definitions of World Tourism Organization which are accepted by Ministry of Culture and Tourism and TUIK; a "visitor" is the person who travels to a different place than his/her permanent residence for a period shorter than 12 months for no commercial purposes. Visitors can be separated in two groups as "tourist" and "day tripper". Tourist is the visitor who resides in the place he/she goes for at least a night and a day tripper is the visitor who stays for less than 24 hours without any accommodation. In addition to above, those concepts are separated into two as international and local.

"The fundamental economic importance of tourism is the expenditures made by the tourists visiting a country or a region. The main economic importance of tourism, whether national or international, is the economic contribution of tourists to the country and local people via the expenditures they make. Each year, high amount of value transfer is being made from developed economies to others via tourism." (Zengin 2010).

The positive impacts of tourism on developing countries' economies put the economic side of this sector at the forefront. Tourism is considered as an important solution for the national or international problems due to its dynamic and economic features (Tavmergen 1998). The positive impacts of tourism can be listed as; its impact on balance of payments, impact of income, impact of import within country, labor force impact, its impact of arranging export and income distribution, generating new job opportunities and providing more employment, generating economic development and foreign currency income, improvement of small scale businesses and increasing the living standards and quality. However, in addition to the positive impacts of tourism, the concept of sustainability should be considered.

Collin has defined sustainability as the activities implemented for preserving the natural resources while meeting the current requirements and to leave a good environment for future generations. Yu-Fai Leung et.al. have defined sustainable tourism as preserving and developing opportunities for future while meeting the current requirements of visitors and host regions by taking the sustainable development principles as base (Collin 2004).

The starting point of sustainable tourism are the concerns that occurred by the social and environmental effects of mass tourism which accelerated in 1960s and 1970s. In 1988, principle of sustainable tourism were determined by UNWTO-World Tourism Organization and they have been defined as the management of natural resources in a way to provide cultural integrity, basic ecological processes, biological diversity and life support systems and to maintain economic, social and aesthetic needs.

Following the Industrial Revolution, the increase of free time for travel and income level and the progress in the transportation sector, along with extension of air travel after World War 2 have helped the tourism to turn into a mass activity (Ovalı 2007).

Mass tourism is nourished by nature, history and culture along with the fact that the touristic organizations such as transportation and accommodation are easy; but as it is realized that mass tourism has started to give harm to these values, preserving nature and cultural assets has become important, which resulted with the appearance of new tourism types such as eco-tourism and culture tourism (Gülbahar 2009).

Mass tourism is based on accommodating the tourist population at high capacity facilities on the coastal are or at a similar attraction center and to make them spend money to consume touristic products; and by time it started to push the capacity of regions, even exceeding that capacity. This type of tourism is based on consumption and a visual pollution to the concretion, environmental pollution due to intense population and utilization of resources have caused the environmental unbalance as the impact of socio-cultural differences have brought cultural deterioration together.

### **3. Tourism and Mass Tourism in Turkey**

One unit development in tourism causes two units of vitalization in our economy. It directly affects the sector by the purchases and creates 26 billion USD turnovers annually. This makes tourism the twentieth sector among 50 main sectors. Tourism has a vital position for some sectors in our country. Fishery sector sells 51 %, food and beverage sector sells 20 % and furniture sector sell 14 % of their products to tourism businesses. The sales made to tourism by twenty sectors are higher than their export rates (Aktob 2014).

The balance of services in current account balance has the second place after foreign trade balance. The

most important factor for this is the tourism incomes (<http://www.tcmb.gov.tr> 2014).

Tourism incomes of Turkey have increased by 6.4 % in 2014 and became 34 billion 305 million 904 thousand USD. 81.5 % of this income was obtained from foreign visitors, whereas 18.5 % was from the Turkish citizens who lived abroad. In 2014, a total of 41.415.070 visitors have visited Turkey and their average spending was 828 USD. The average spending of a foreign citizen was 775 USD, whereas this amount was 1130 USD for a Turkish citizen who lives abroad (<http://www.tuik.gov.tr>). When we look at the shares of tourism income in GDP and export; we see that the rate of Tourism Income/GDP in 2008 was 3.4 and it became 4.3 in 2014; whereas the rate of Tourism Income/Export rate has increased to 21.8 from 16.6 and the rate of Tourism Income/Foreign Trade Gap decreased to 34 from 36.9 (<http://www.tursab.org.tr>). In 2014, the foreign trade gap of Turkey was 84 billion 508 million 918 thousand USD and the tourism income of 34 billion 305 million 904 thousand USD was 40.59 % of this gap (<http://www.tursab.org.tr>).

In order to make tourism have positive impacts on local, regional and national economy along with socio-cultural values and environment, a planned development is necessary. A region passes through certain processes while being discovered, becoming a touristic region and after becoming a recognized touristic space; and this creates certain impacts on the residents and on environment (Çalışkan & Tütüncü 2008). If tourism will develop in an unplanned way, the damage to the environment will become intense, which may cause unrest among local population and the decrease of demand towards that region.

In parallel with the developments in world tourism, mass tourism has become a priority in Turkey as well. When considering in general; the legal regulations, incentives and marketing were mostly about mass tourism. Mass tourism based on sea, sand and sun were improved in Mediterranean and Aegean coasts and this has contributed a lot to Turkish economy on a long-term basis (Gülbahar 2009).

However, as a result of incentives, unplanned structures and intensity, without considering the sustainability have caused the damage of nature along with historical and cultural heritage. The pressure of international foreign tour operators with high levels of material power is another important factor for the products towards mass tourism for long years (Gülbahar 2009).

5 cities where mass tourism is extensively made in Turkey are Antalya, Mugla, Izmir, Aydin and Nevsehir.

Third Development Plan which contained the years 1973-1977 has stated that tourism incentive works would have inefficient investment results if distributed all around the country; and Mediterranean, Goreme, Uludag, Southern Aegean and Marmara were considered as "privileged regions". Except for Goreme and Uludag, all these regions are coastal regions. Fourth Development Plan for 1979-1983 has also predicated the establishment of facilities for mass tourism in the privileged regions for tourism (Naycı 2009).

Antalya, Mugla, Izmir, Aydin and Nevsehir are cities where mass tourism was very intense during the years and therefore included to this study; and the tourist numbers (foreign, national and total) for 2001 and 2012 were provided on Table 1.

Table 1: Tourist Numbers for 2001 and 2012

2001	Foreign	National	Total	<i>Source:</i> Republic of Turkey Ministry	2012	Foreign	National	Total
Antalya	3 507 343	829 762	4 337 105		Antalya	10 183 562	2 603 361	12 786 923
Mugla	1 018 974	677 921	1 696 895		Mugla	1 661 475	827 611	2 489 086
Izmir	434 792	677 058	1 111 850		Izmir	683 331	1 193 403	1 876 734
Aydin	346 223	235 390	581 613		Aydin	677 556	400 228	1 077 784
Nevsehir	343 308	142 518	485 826		Nevsehir			

try of Culture and Tourism, General Directorate on Investment and Business  
[www.ktyatirimisletmeler.gov.tr/TR,9857/isletme-belgeli-tesisler.html](http://www.ktyatirimisletmeler.gov.tr/TR,9857/isletme-belgeli-tesisler.html)

According to Table 1; Antalya was the most preferred destination in both terms by foreign and national visitors, which is followed by Mugla and Izmir, consecutively.

#### 4. Methodology

Multi-dimensional scaling is one of the multi variant statistical analysis methods and it administers the n number of units or items to be positioned at k dimension according to p number of variables. This method is also known as perceptual mapping. Positioning of p number of variables at k dimension is done by scaling the units or items according to their similarities or distances with one another (Lattin et. al 2003). Such similarities or distances are usually determined by Euclid distances. In multi-dimensional scaling, if the data is with equal intervals or if there is a proportional scale than the distances are determined by metric multi-dimensional scaling; and if the data is nominal or ordered scale, then non-metric multi-dimensional scaling will be used.

Before implementing multi-dimensional scaling method, the differences between the measuring units of variables should be reviewed. If the measuring units are different, first these values have to be standardized. After the data is converted, the distances matrix will be calculated to indicate the distance between units or items. This matrix is the data matrix generated by n number of unit or item according to p number of variables. Some measures are used in order to determine the dimensions of space where this data matrix will be indicated at. The most commonly used one among these measurements is the stress measure. Stress measure measures the appropriateness of the solutions obtained for each dimension with the distances matrix. After the number of dimensions is determined, the display distances will be calculated according to data distances. These distances are calculated as (Tinsley & Brown 2000)

$$d_{ij} = a + b\delta_{ij} + e$$

The regression method used changes according to the data type. Linear regression methods will be used in metric scaling; and monotonic regression methods will be used if non-metric scaling was used. The estimate values obtained by regression equation are named as disparity. Then the stress parameter will be calculated. Stress parameter is a value that determines the appropriateness between the data distances and estimate display distances and Kruskal stress value is the mostly used one in application. This value is calculated as (Cengiz & İhtiyaroğlu 2012).

$$stress1 = \sqrt{\frac{\sum \sum_{i < k} (d_{ij} - td_{ij})^2}{\sum \sum_{i < k} (td_{ij})^2}}$$

This calculated stress value is expected to be close to zero. The Table 2 below indicates how appropriateness is according to calculated stress values (Timm 2005).

Table 2: Appropriateness according to calculated stress values

Stress Value	Compliance
0.20	Appropriateness
0.10	Not Appropriate
0.05	Good
0.025	Perfect
0.00	Full

The appropriateness between data distances and estimated display distances can also be determined via a graphic also known as Shepard graphic. On X axis of Shepard diagram we see the difference values, and on Y axis we seen the observed distances. If the scatter plot that appears according to these values is linear, then a linear model will be applied to the data. Finally, the coordinates of n number of unit or item according to p number of variables in a k dimension space will be obtained. According to these coordinates, a map will be generated in which each unit or item is positioned according to other units or items. The relations between units or items are determined according to this map and the results will be interpreted.

## 5. Data and Variables

In this study, the variables in Table 3 were evaluated by multi-dimensional scaling method in order to research the environmental and economic dimensions for Antalya, Mugla, Izmir, Aydin and Nevsehir between 2001-2012.

Table 3: Variables Used in Analysis

Variable	Description	Data Source
Tourism Incomes	It was obtained by multiplying the number of tourists visiting the cities and the average expenditures.	Ministry of Culture and Tourism www.kultur.gov.tr
Number of Tourists	The number of tourists arrived in cities by air, ground, train and sea.	
Number of Beds of Facilities	Number of beds of the facilities with tourism business certificates. Number facilities with tourism business certificates.	
Tourism Investments	Fixed investments (national and foreign) in tourism sector with investment incentive document	Republic of Turkey, Ministry of Economy, www.ekonomi.gov.tr
Total Employment	Total employment in tourism sector	Turkish Statistical Institution www.tuik.gov.tr
Green Areas	Total processed agricultural area and hectare-based area of plants with long life	
Forestry	(HA) Forestry activities	
Buildings	The number of buildings with licenses	
Solid Waste	Total amount of waste in summer and winter	
Water Consumption	Total amount of water used for drinking and utilization network	

Among these variables; tourism income, number of tourists, number of beds, number of facilities, tourism investments and total employment variables were considered to examine the economic dimension; whereas green area, forestry, buildings, solid waste and water consumption variables are considered to examine the environmental dimension.

### 6. Findings of Multi-Dimensional Scaling

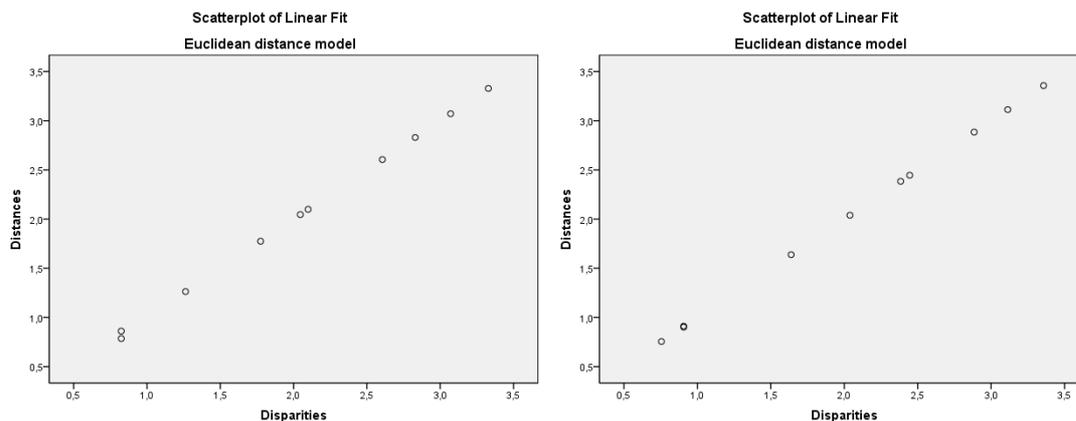
By using the data for 2001 and 2012, a perceptual map was established with multi dimensional scaling method for Antalya, Mugla, Izmir, Aydin and Nevsehir where mass tourism is implemented. The variables explained in Table 3 are used in this study. At first, the stress values in order to determine the appropriateness between the data distances and estimate display distances were calculated and indicated on Table 4.

Table 4: Stress Values for 2001 and 2012

Iteration	Stress Values		Fixed Value	
	2001	2012	2001	2012
1	0.00554	0.00062		
2	0.00455		0.00100	
Kruskal Stress 1	0.00753	0.00094		
R <sup>2</sup>	0.99961	0.99999		

According to Table 4, the stress value for 2001 was 0.00455 and it was 0.00062 for 2012. According to these values, a complete coherence is present for both years. When we look at Shepard graphic in Figure 1 in order to examine the appropriateness between the data distances and estimate display distances; we seen that distribution is linear for both years.

Figure 1: Shepard Graphics



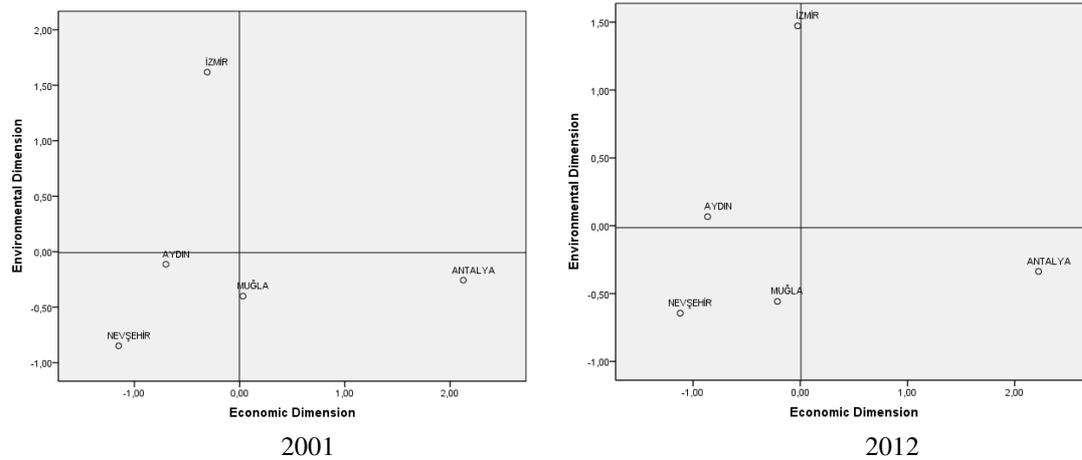
The study has also examined the correlations between dimensions and variables and the results are given in Table 5.

Table 5: Correlations Between the Variables and Dimensions

Variables	Dimension Name	Dimension 1		Dimension 2	
		2001	2012	2001	2012
<i>Tourism Incomes</i>	Economic Dimension	0.994	0.976	0.103	0.211
<i>Number of Tourists</i>		0.994	0.976	0.103	0.211
<i>Number of Beds</i>		0.989	0.944	0.139	0.222
<i>Number of Facilities</i>		0.953	0.939	0.092	0.269
<i>Tourism Investments</i>		0.974	0.983	0.221	0.176
<i>Total Employment</i>		0.967	0.984	0.252	0.156
<i>Green Areas</i>	Environmental Dimension	0.386	0.224	-0.080	-0.174
<i>Forestry</i>		0.032	-0.087	-0.939	-0.878
<i>Buildings</i>		0.363	0.539	-0.896	-0.801
<i>Solid Waste</i>		0.226	0.487	-0.956	-0.846
<i>Water Consumption</i>		0.337	0.523	-0.926	-0.830

When we look at the results, we see the first dimension as the economic dimension and the second one as the environmental dimension. According to the marks of correlations; as the correlations of environmental dimension had negative markings, the environmental dimension in perceptual map was interpreted reverse. The perceptual maps of five cities for 2001 and 2012 according to economic and environmental dimension is in Figure 2.

Figure 2: Perceptual Maps for 2001 and 2012



The findings for each province are as follows after the perceptual maps are examined;  
 Antalya province is in a positive area in terms of economic dimension, but in a negative area in terms of environmental dimension in 2001. In 2012, we see that the economic dimension of Antalya has a positive increase whereas the environmental dimension has a negative increase.

Mugla province had almost the zero point at the positive area for the economic dimension in 2001 and in negative area for environmental dimension; and in 2012 economic and environmental dimensions have both increased in negative areas.

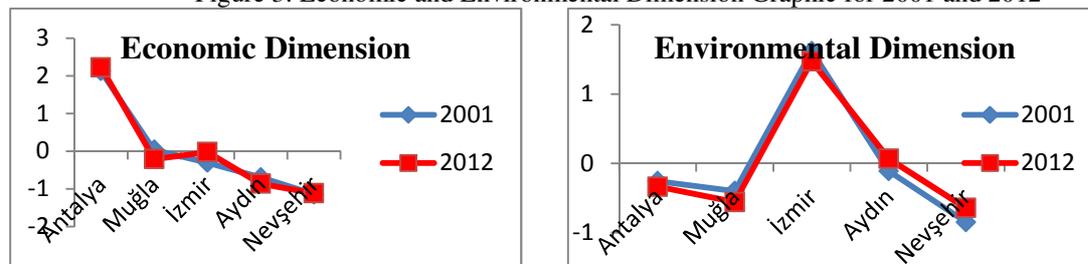
Izmir province was in negative area for the economic dimension and in positive area for the environmental dimension in 2001; and it has reached to zero point economically and had a positive increase at the environmental dimension in 2012. In other words, there were positive developments for both dimensions.

Aydin province was in negative area for both dimensions in 2001; and in 2012, it almost kept its position for the economic dimension and had its place in the positive area for environmental dimension.

Finally, Nevsehir province was in negative area for both dimensions in 2001 and in 2012, it has a positive development at the environmental dimension.

Figure 3 has the graphics for both years and economic and environmental dimensions for five provinces.

Figure 3: Economic and Environmental Dimension Graphic for 2001 and 2012



In 2001, when we look in general for five provinces, we see that Antalya province had a better position as positive when compared with other provinces in terms of economic dimension. For environmental dimension, Izmir province had a different position and it was positively better. In 2012, we see an improvement in terms of environmental dimension in Aydin province; and there are only slight changes for other provinces.

## 5. Conclusion and Evaluation

According to multi-dimensional scaling results; we see that Antalya and Izmir have positions which are more distant than center among the 5 provinces analyzed by considering tourism incomes, number of tourists, number of beds, number of facilities, tourism investments, total employment, green area, forestry, buildings, solid waste and water consumption for 2001 and 2012.

These two provinces are ordered as Antalya and Izmir, when we consider tourist, facilities, tourism investments and green area both for 2001 and 2012; and for forestry, buildings, solid waste and water consumption, this order is Izmir and Antalya.

But when the increase rates of both countries are compared for 2001 and 2012; we see that Antalya precedes Izmir in terms of increase on number of tourists, facility numbers and tourism investments. Green areas have decreased in both provinces and it is seen that this decrease was faster in Antalya; and when we look at

forestry rates, in Izmir where green areas have decreased, forestry was 8 times more than Antalya. In terms of increase of buildings and waste solid, although Izmir proceeded in terms of numerical values, Antalya is far more leading in terms of increase rates. When we examine the multi-dimensional scaling results and existing tourism data, we see that the theoretical result fits with the real case.

As it can be seen, our analyses confirm each other. Even though Izmir and Antalya coordinates were different for Izmir and Antalya in the multi-dimensional scaling graph; they have kept their distance towards each other and had a distant position than other provinces. In order to understand the reasons of the difference of these both provinces; we need to look at the countries from which the tourists arrive, demands in domestic tourism, the investment permissions and the promotion of Turkey abroad.

Both for 2001 and 2012, Antalya has the first place in terms of touris numbers, followed by Mugla and Izmir, consecutively. As it can be seen; Antalya was the most preferred destination in both terms by foreign and national visitors, which is followed by Mugla and Izmir, consecutively.

In order to meet the high demand from European countries which has spread to the whole year due to winter tourism as well; tourism investments, number of facilities and buildings has increased in Antalya coast between Kemer and Alanya; and the green areas have decreased. As a result of this, we have seen that there is an economic improvement but a high level of damage in terms of environment.

When evaluated in terms of total demand, Izmir has the third place among the five provinces examined; but when we look at the distribution of this demand, we see that it is the only province where the number of national visitors is higher than foreign visitors. Type of facilities and type of vacation differs, depending on this. When we look at the data of 2012, we see that the rate of foreign visitors has increased when compared with 2001. When the tourism income is examined worldwide; we see that as 75 % of tourism mobility is at domestic tourism, 75 % of tourism income originates from foreign tourism.

Winter operations were previously done as Germany originated and Antalya centered ones in order to use those facilities during the winter; and they have been shifted to Aegean region currently, increasing the number of foreign visitors. Also, the successful marketing methods have resulted with different cruiser companies to add Izmir into their catalogs along with the renewed Aydin-Kusadasi port had positive impacts. We can explain the better position of Izmir when compared with Aydin; by the rational policies it followed in order to increase its share in Cruiser Tourism, and by the increase of participants in several sectoral fairs organized in Izmir (Zeytinoğlu & Sadiç 2013). As the foreign tourists who had arrived in Izmir by cruiser tourism were day trippers; there was no increase in facility requests, and in buildings. Increase of foreign visitor number resulted with economic increase. When the data is examined with this information, it will be seen that they are in compliance with truth along with multi-dimensional scaling results.

Other three provinces are very close to each other. According to the results of multi-dimensional scaling; Mugla province had a negative increase in 2001 and 2012 in terms of economic and environmental dimensions. The ongoing increase of demand in Marmaris and Bodrum, the distorted building structures and the damage on nature as a result of both can be indicated as the reasons of negative increase at environmental dimension.

When we look from overnight numbers, Mugla province is among the ones with the highest periods. Majority of foreign visitors who accommodate in Mugla are from England. They are followed by Germans. However, as 16-19 % of the British visitors accommodate in places where they own, where they have rented, or in places that belong to their friends; along with domestic visitors accommodating in their own houses or for rent, this can be helpful for us to explain the negative increase in economic dimension.

Aydin province is mostly known with the tourism activities in Kusadasi and around. The number of facilities in the province has increased by 25 % between 2001 and 2012, and the green area has decreased by 5 % whereas forestry has increased by 142 %. This data can be interpreted as Aydin has learned its lesson. Although the number of visitors increase; factors such as decreasing culture tours, increase in Kusadasi centered cruiser tourism have caused the appearance of day trippers who do not accommodate and who spend limited all of which can be explained to show the reasons of negative position in terms of economic dimension; whereas the decrease in number of facilities, increasing forestry and almost fixed values of green area explain the positive transition to environmental dimension.

In Nevşehir, we see almost no change in both dimensions. When we look in general, for the five provinces in Turkey where mass tourism is done, we see there are no big changes on the economic impacts of mass tourism between 2001-2012. This indicates that mass tourism does not have negative effects in terms of economic dimension. In terms of environmental effects, we see remarkable positive improvements. This finding indicates that Turkey has shown progress for eliminating the negative developments related with mass tourism and environment.

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