

Prioritization of Tourism Strategies in Turkey Using a SWOT-AHP Analysis

Yavuz Ozdemir^{*}, Tufan Demirel

Industrial Engineering Department, Yildiz Technical University, Istanbul, Turkey

Email address

ozdemiry@yildiz.edu.tr (Y. Ozdemir)

^{*}Corresponding author

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Abstract: This paper aims to explore and analyze the internal and external factors of the tourism sector in Turkey, and define strategies according to these factors. SWOT, the acronym for Strengths, Weaknesses, Opportunities, and Threats analysis, is a commonly used tool for analyzing internal and external environments. This paper has two purposes; first of them is to define and to prioritize the strengths, weaknesses (internal factors); opportunities, threats (external factors) and their subfactors for tourism in Turkey. The second purpose is to determine and to evaluate the tourism strategies and prioritize them. The combination of SWOT and AHP methods are used in this paper. With using a package software the main factors, subfactors and the strategies have been prioritized and sensitivity analysis have been given for SWOT groups and strategy alternatives. To the authors' knowledge, this will be the first study for tourism strategies which uses a SWOT-AHP analysis.

Keywords: Analytic Hierarchy Process, Sensitivity Analysis, Strategy, SWOT, Tourism

1. Introduction

In developing countries, tourism policies are outdated, incomplete, or poorly applied [1], and tourist attractions, such as natural parks, do not have management or land use plans [2]. Recent studies related to recreational ecology showed that mountain tourism in developing regions had adverse effects on natural areas, protected areas, and wetlands [3, 4].

According to United Nations World Tourism Organisation (UNWTO) tourism industry is one of the biggest industries all over the world with its contribution to employment, number of people whom to service and also its revenue and added values [5].

The investments and strategies must be defined clearly to develop this sector. The strengths, weaknesses, opportunities and threats of Turkish tourism sector must be determined and according to these factors, strategies must be found. This paper guide to strategists and politicians with prioritization of these strategies.

2. Tourism in Turkey

In a worldwide assessment, international tourism is the widest point of foreign trades. For several countries, tourism has a position that the most important export resource, the most important sector that provides the most currency and the motor of the development [6]. Third World countries have utilized tourism to achieve improvements in balances of payments, to increase the general income level, to create additional employment opportunities, to stimulate economic diversification and to decrease regional imbalances [7]. As reported by the World Travel and Tourism Council (WTTC), the contribution of tourism to the global economy in 1999 encompassed 11 percent of Gross National Products; created 200 million jobs, which equates to 8 percent of total employment and generated 5.5 million new jobs per annum by the year 2010 [8].

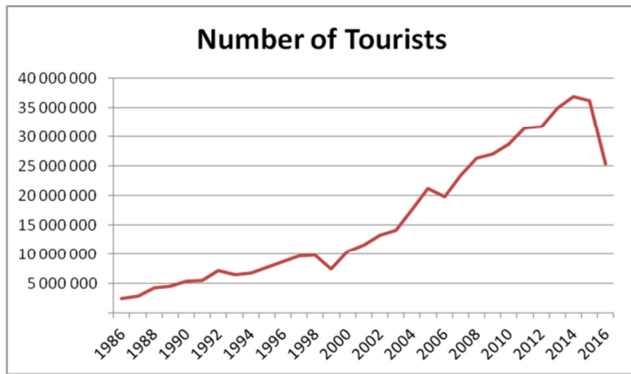


Figure 1. The number of incoming foreigners in Turkey [9].

Table 1. The proportion of tourism receipts in Gross National Product (GNP) [9].

Years	GNP (million \$)	Receipts (million \$)	Share of Tourism Receipts in the GNP (%)
1980	57198	327	0.6
1985	52598	1482	2.8
1990	150758	3225	2.1
1995	170081	4957	2.9
2000	200002	7636	3.8
2005	360876	18153	5.0

Table 2. The rate of tourism receipts in exports [9].

Years	Exports (million \$)	Tourism Receipts (million \$)	Rate of tourism receipts in exports (%)
1980	2910	327	11.2
1985	7958	1482	18.6
1990	12959	3225	24.9
1995	21637	4957	22.9
2000	27775	7636	27.5
2005	73476	18153	24.7

According to Turkey State Planning Organization 9th Development Plan, the number of incoming foreigners in 1980 are increased 17,6 times in 2005 (Figure 1). Tourism receipts in 1980 are increased 45 times in 2005; the proportion of tourism receipts in Gross National Product (GNP) increased from 0.6% to 5.0% between 1980 and 2005 (Table 1). And the rate of tourism receipts in exports increased from 11.2% to 24.7% between 1980 and 2005 (Table 2). The target of Turkey Ministry of Culture and Tourism for 2020 is 60 million tourist and 50 billion USD tourism receipts. Because of there is a need for planning strategies for Turkish tourism. This paper helps to prioritize the determined strategies according to SWOT Analysis.

Strategic planning which focuses on rural tourism is based fundamentally on the adjusting the changes in the operational environment. Consequently there exists a wide range of planning methods developed for analyzing the interactions of both external and internal environments simultaneously [10].

3. Methodology

3.1. SWOT Analysis

SWOT, the acronym for Strengths, Weaknesses, Opportunities, and Threats analysis, is a commonly used tool

for analyzing internal and external environments in order to attain a systematic approach and support for a decision situation. The most important internal and external factors to the enterprise's future are referred to as strategic factors and they are summarized within the SWOT analysis. The final goal of a strategic planning process, of which SWOT is an early stage, is to develop and adopt a strategy resulting in a good fit between internal and external factors. SWOT can also be used when strategy alternative emerges suddenly and the decision context relevant to it has to be analyzed [11, 12].

Tekken and Kropp [13] aimed to evaluate the regional development risk for the luxury tourism sector in Saidia, north-eastern Morocco. An input for tourism-related water management and governance was provided. SWOT analysis were used to assess and discuss risks and opportunities of current tourism development. Core strategies and related measures were derived to provide impulses for sustainable water management and governance and as a support for concrete policy implementation.

Emir and Arslanturk [14] aimed to analyze the strengths, weaknesses, opportunities and threats of thermal tourism through the opinions of tourism students. According to their results, the existence of a university found as the strength and non-existence of an airport as the weakness of Afyonkarahisar. Besides, thermal tourism's being done during the year found as the opportunity and construction problems' negative effects on tourism as the threats.

Yu et al. [15] proposed beach management strategies for developing tourism on the island, using the experience of developed tourist islands. They selected Pingtan and Xiamen islands as case studies. This paper addressed beach management practices implemented on both islands, and the important factors affecting the effectiveness of beach management using SWOT analysis.

Khoshtaria and Chachava [16] reviewed the opportunities of ecotourism development in South Georgia. They studied the example and experience of Borjomi-Kharagauli National Park, natural conditions, balneology resources and medieval cultural heritage of the Gujarati valley. They analyzed the supporting and obstructing factors of the development in the SWOT-table.

One of the main limitations of this approach, however, is that the importance of each factor in decision-making cannot be measured quantitatively. As such it is difficult to assess which factor influences the strategic decision most. If it is used in combination with analytic hierarchy process (AHP), however, SWOT approach can provide a quantitative measure of importance of each factor on decision-making [17, 18, 19]. The multi-criteria decision-making method, AHP, is preferred since it enables decision makers to assign a relative priority to each factor through pair-wise comparisons. Shrestha *et al.* [20] attempt to assess the effect of environmental, economic, and social factors related to silvopasture adoption decisions. SWOT approach is used in combination with AHP to achieve this task. The SWOT-AHP allows to define silvopasture adoption decision process in a hierarchical structure of factors, evaluate factors in pairs, and

quantify the relative importance of each factor to the adoption decision. Kurttila *et al.* [17] examine a new hybrid method for improving the usability of SWOT. AHP and its eigenvalue calculation framework are integrated with SWOT analysis. AHP's connection to SWOT yields analytically determined priorities for the factors included in SWOT analysis and makes them commensurable. The aim to apply the hybrid method is to improve the quantitative information basis of strategic planning process.

Brudermann *et al.* [21] conducted an integrated SWOT-AHP analysis for agricultural biogas plants in Austria in order to identify strengths, weaknesses, opportunities and threats (SWOT factors), and to weight the factors identified based on expert judgments, calculated according to the Analytic Hierarchy Process (AHP) method.

Posch *et al.* [22] focused on the strategic level of energy management, specifically, on the analysis of the internal and external conditions that form the basis for strategic development. They applied a hybrid method by combining an analysis of Strengths, Weaknesses, Opportunities and Threats (SWOT) with an Analytic Hierarchy Process which was based on a survey of expert opinion.

Erdil and Erbiyik [23] aimed to determine the best strategy and the development of small business management via SWOT (Strengths, Weaknesses, Opportunities, Threats), and AHP. For this purpose, they implemented SWOT analysis for a small scale enterprise in the food sector (milk factory) and they determined alternative strategies that are based on SWOT factors. And then they converted the SWOT matrix into a hierarchical structure. Finally they solved the model structure with AHP method.

Bartusková and Kresta [24] focused on external part of SWOT analysis. They aimed to propose evaluation of the partial results of external strategic analyses, which are basis for creation of external part of SWOT matrix. They used Analytic Hierarchy Process for the evaluation and applied this method on data of the selected organization.

Canto-Perello *et al.* [25] combined SWOT analysis and Analytical Hierarchy Process (AHP) to study utility tunnel planning in urban areas. Their hybrid method took account of internal resources and capabilities (strengths and weakness) and external factors (opportunities and threats). SWOT analysis is a structured way to analyze these four factors, while AHP technique achieves pairwise comparisons among factors in order to prioritize them using the eigenvector

method.

Hidayah *et al.* [26] studied to provide baseline information of the biophysical condition and to formulate strategies towards sustainable management of the Gili Timur Island, East Java Province Indonesia. They then used the evaluation of the current biophysical state to determine the influence of existing condition to the management strategies using SWOT and AHP methods.

Santopuoli *et al.* [27] focused on the evaluation of the priority of the variables that landowners take into account during forest plantation establishment. Their combined use of SWOT analysis and Analytic Hierarchical Process facilitates the priority ranking, allowing the assessment of the variables regarding fire-related aspects. Their combined methodology applied represented a helpful tool for decision makers, offering them the possibility to assess the current gaps in plantation establishment with a particular focus on fire-related aspects.

SWOT analysis is traditionally a firm-level tool [28, 29]. But it can be used for the larger levels, for example, at the national level, as long as you can determine the strengths, weaknesses, opportunities, and threats of the problem at that level [30]. When the literature is searched, there is no literature about tourism strategies which uses a SWOT-AHP analysis.

3.2. SWOT-AHP Analysis for Prioritization of Tourism Strategies in Turkey

In this section, the fundamentals of SWOT analysis and AHP will be given. Through SWOT analysis, the strengths (S), weaknesses (W), opportunities (O) and threats (T) for the success of tourism in Turkey will be determined. AHP will be used to determine the weight of each main and sub factor by pair-wise comparisons of these factors. Later, these techniques will be combined to prioritize the tourism strategies.

A scan of the internal and external environment is an important part of the strategic planning process. Environmental internal factors to the organization can be usually classified as strengths (S) or weaknesses (W), and external factors to the organization can be classified as opportunities (O) or threats (T). Such an analysis of the strategic environment is called as a SWOT analysis. Figure 2 shows how SWOT analysis fits into an environment scan.

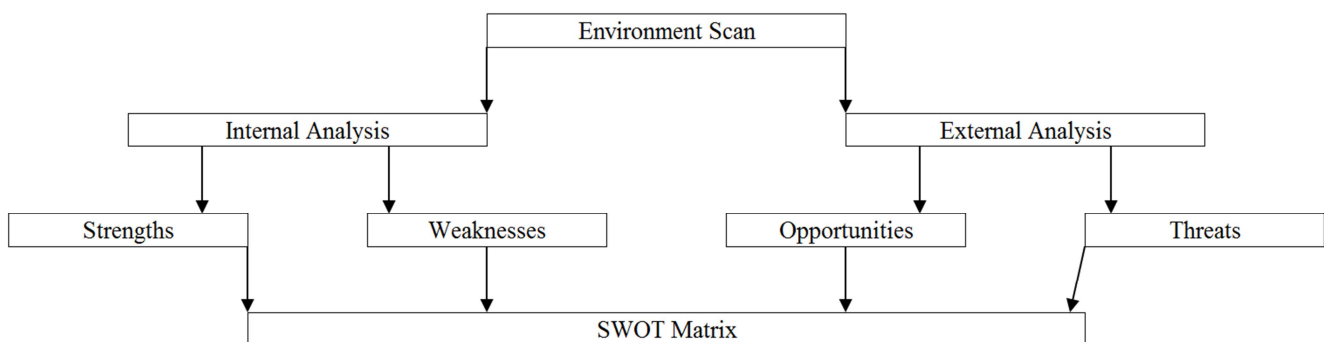


Figure 2. SWOT analysis framework [31].

One of the first applications of the AHP was Saaty's use of it to choose a school for his son [32]. The choice was to be made from among three possibilities: schools A, B, and C. Important aspects of school quality were identified as learning, friends, school life, vocational training, college preparation, and music classes.

The AHP has been used in many different fields as a multi-attribute decision analysis tool with multiple alternatives and criteria [33, 34, 35]. AHP uses 'pair-wise comparisons' and matrix algebra to weigh criteria. The decision is made by using the derived weights of the evaluative criteria [32].

After the hierarchy of the problem is constructed, the matrices of pair-wise comparisons (Eq. 1) are obtained [32]. In this matrix, the element $a_{ij}=1/a_{ji}$ and thus, when $i=j$, $a_{ij}=1$. The value of w_i may vary from 1 to 9, and 1/1 indicates equal importance while 9/1 indicates extreme or absolute importance.

$$A = (a_{ij}) = \begin{bmatrix} 1 & w_1/w_2 & \cdots & w_1/w_n \\ w_2/w_1 & 1 & \cdots & w_2/w_n \\ \vdots & \vdots & \cdots & \vdots \\ w_n/w_1 & w_n/w_2 & \cdots & 1 \end{bmatrix} \quad (1)$$

In the comparisons, some inconsistencies can be expected and accepted. When A contains inconsistencies, the estimated priorities can be obtained by using the matrix (Eq. 1) as the input using the eigenvalue technique (Eq. 2) [32].

$$(A - \lambda_{\max} I)q = 0, \quad (2)$$

where $\lambda_{\max}$ is the largest eigenfactor of matrix A of size n; q, is its correct eigenfactor; and I is the identity matrix of size n. The correct eigenfactor, q, constitutes the estimation of relative priorities. Each eigenfactor is scaled to sum up to one to obtain the priorities. Saaty [36] demonstrated that $\lambda_{\max} = n$ is a necessary and sufficient condition for consistency. Inconsistency may arise when $\lambda_{\max}$ deviates from n due to inconsistent responses in pair-wise comparisons. Therefore, the matrix A should be tested for consistency using index, CI, has been constructed (Eq. 3) [32].

$$CI = (\lambda_{\max} - n)/(n-1) \quad (3)$$

CI estimates the level of consistency with respect to a comparison matrix. Then, because CI is dependent on n, a consistency ratio CR is calculated, which is dependent of n (Eq. 4) [32].

$$CR = CI / RI \quad (4)$$

where CI is the consistency index; RI is random index generated for a random matrix of order n, and CR is

consistency ratio [37]. The general rule is that $CR \leq 0.1$ should be maintained for the matrix to be consistent. Otherwise, all or some of the comparisons must be repeated in order to resolve the inconsistencies of the pair-wise comparisons.

The hierarchy of the problem taking the SWOT analysis framework into account was constructed. The hierarchy in this study is composed of the goal, which is the selection of the best strategies, the main factors which are strength (S), weaknesses (W), opportunities (O), and threats (T) and the sub-factors and finally the alternative strategies.

3.3. The Method for Utilizing AHP in SWOT Analysis

The idea in utilizing AHP within a SWOT framework is to systematically evaluate SWOT factors and commensurate their intensities. If it is used in combination with analytic hierarchy process, SWOT approach can provide a quantitative measure of importance of each factor on decision making [18]. The following four steps show how SWOT and AHP can be combined [17].

Step 1: *SWOT analysis is carried out.*

The relevant factors of the external and internal environment are identified and included in SWOT analysis. When standard AHP is applied, it is recommended that the number of factors within a SWOT group should not exceed 10 because the number of pair-wise comparisons needed in the analysis increases rapidly [32]. Thus, the results of the comparisons are quantitative values expressing the priorities of the factors included in SWOT analysis.

Step 2: *Pair-wise comparisons between SWOT factors are carried out within every SWOT group.*

When making the comparisons, the questions at stake are: (1) which of the two factors compared is a greater (strengths, opportunity, weakness, or threat); and (2) how much greater. With these comparisons as the input, the relative local priorities of the factors are computed using the eigenvalue method. These priorities reflect the decision maker's perception of the relative importance of the factors.

Step 3: *Pair-wise comparisons are made between the four SWOT groups.*

The factor with the highest local priority is chosen from each group to present the group. These four factors are then compared as in Step 2. These are the scaling factors of the four SWOT groups and they are used to calculate the global priorities of the independent factors within them. This is done by multiplying the factors' local priorities (defined in Step 2) by the value of the corresponding scaling factor of the SWOT group. The global priorities of all the factors sum up to one.

Step 4: *The results are utilized in the strategy formulation and evaluation process.*

The contribution to the strategic planning process comes in the form of numerical values for the factors. New goals may be set, strategies defined and such implementations planned, taking into close consideration the foremost factors.

4. Application

4.1. SWOT Analysis for Tourism Strategies in Turkey

The subfactors of the strengths, weaknesses, opportunities, and threats for prioritization of tourism strategies of Turkey have been determined with experts' view and brainstorm meetings. These subfactors will be used to prioritize the tourism strategies and also can guide to further researches.

Strengths

The four main strengths are determined as follows.

- i. Rich historical, cultural and natural beauties (S1): Turkey's historical beauties from Romans, Byzantium and also from Ottoman Empires can not be underestimated. There are lots of buildings, cultural and architectural designs and also natural beauties such as sea-sand, lakes, mountains, rivers, plateaus, etc to attract tourists.
- ii. Four seasons at the same time (S2): In Turkey four seasons can be lived at the same time. Such as, in Palandoken Mountain you can ski, in Antalya you can swim and also in Trabzon you can sit under rain in a plateau.
- iii. Geographical location (S3): Closeness to both of Europe and Asia and also to Middle East is a positive impact of Turkey. Besides its strategic importance for politicians, being in the center of Europe, Asia and Middle East and arrive easily are big strengths of Turkey.
- iv. Young labor to direct to tourism (S4): High young population rate in Turkey and possibility to direct them to tourism sector are the another strengths that can be counted.

Weaknesses

The five main weaknesses are determined as follows.

- i. Lack of interest of governance and tourism policies (W1): Not interesting about tourism sector and about their problems is an on-going problem in Turkey. And for this reason effective tourism policies can not be generated. For this reason some geographical locations and some tourism types are so important and well-known, besides another locations or types are not known adequately.
- ii. Lack of qualified employee (W2): Besides high young population rate in Turkey, qualified employee rates are not high as well. Because of educating and directing young populations to tourism is crucial.
- iii. Shadow economy (W3): Possibility of illegal activities in economy can be a subfactor of weaknesses as shadow economy.
- iv. Irregular construction (W4): Irregular constructions especially in big cities are also problems for silhouette and architectural dimensions.
- v. Lack of education of the society about tourism and tourists (W5): Especially in small cities the society does not know the importance of tourism and how to behave to tourists.

Opportunities

Five subfactors of opportunities for tourism strategies in

Turkey are determined as follows.

- i. Increasing interest to congress, health and culture tourism (O1): New types of tourism is crucial. By this way the structure of the sector and the market can change and also can expand.
- ii. Quickly developing world tourism (O2): Developing global tourism market is absolutely an opportunity for Turkey.
- iii. EU candidature of Turkey (O3): Tourists from all over the Europe can travel to Turkey without visa or anything. Being a member of EU will provide Turkey new tourism markets, and also will increase the tourism market sharing.
- iv. Easier and cheaper travelling (O4): Competition between travelling agencies and the decrease of the travel costs can increase the tourism rate.
- v. Being so cheap according to Europe (O5): Accommodations, travelling costs, foods and beverages, gifts (and so on) are cheaper than most of Europe. For example tin soft beverages are about 0,50 €, hamburgers about 2 €, pizzas about 4 €, one night standing in a five star hotel (all inclusive) starting from 30 €, travelling from one city to another in Turkey about 30€ by plane, 5-20 € by train and by bus.

Threats

The five main threats are determined as follows.

- i. Getting stronger of EU member competitor countries with the membership of EU (T1): Traveling without a visa or another official actions are positive effects for a tourist. For this reason, EU member countries are one step ahead according to Turkey.
- ii. Image problem of Turkey (T2): Image problem is one of the major threats of Turkey. Especially in Europe and some other countries, Turkey is not known or wrong-known. The problem of Turkey's image must change day by day with the effective tourism policies, behaves, and also with advertisements.
- iii. Environmental problems (T3): Environmental problems such as global warming, air pollution, water pollution, etc. are the threats for all countries.
- iv. Political and economical instability (T4): Political and economic instability all over the world is a problem for tourism sector, such as terror (as a political instability), and financial crisis (as an economic instability). They are the negative effects for the sector globally.
- v. Damaging the natural structure with the unconscious tourism investments (T5): Damaging the natural structure for commercial reasons can be the major problem of the natural environment in the next decades.

4.2. SWOT-AHP Analysis

When the analysis has been completed, a SWOT matrix can be generated and used as a basis of goal setting, strategy formulation, and implementation. The internal and external analysis and strategies are shown in Figure 3 and the subfactors and strategies of SWOT analysis are placed in a SWOT matrix as shown in Figure 4.

Internal Analysis External Analysis	Strengths - Rich historical, cultural and natural beauties (S1) - Four seasons at the same time (S2) - Geographical location (S3) - Young labor to direct to tourism (S4)	Weaknesses - Lack of interest of governance and tourism policies (W1) - Lack of qualified employee (W2) - Shadow economy (W3) - Irregular construction (W4) - Lack of education of the society about tourism and tourists (W5)
Opportunities - Increasing interest to congress, health and culture tourism (O1) - Quickly developing world tourism (O2) - EU candidature of Turkey (O3) - Easier and cheaper travelling (O4) - Being so cheap according to Europe (O5)	S-O STRATEGY * Government promotion of 3 seasons investments (except summer) and scientific and commercial meetings to organize in low seasons	W-O STRATEGY * (1) Eliminate the lack of education of the society about tourism and tourists and create labor classes that recognize different cultures * (2) Government promotion about transportation and investment to the areas that have high tourism potential but low recognition
Threats - Getting stronger of EU member competitor countries with the membership of EU (T1): - Image problem of Turkey (T2) - Environmental problems (T3) - Political and economical instability (T4) - Damaging the natural structure because of the unconscious tourism investments (T5)	S-T STRATEGY * (1) Conscious and planned investments in a such way that not to damage rich historical, cultural and natural beauties * (2) Image improvement with the advertisements, promotion and education and create a “cheap, qualified and secure” image for Turkey	W-T STRATEGY * Making the tourism areas more secure and stable that have high tourism potential but low secure

Figure 3. Strategy components of SWOT matrix.

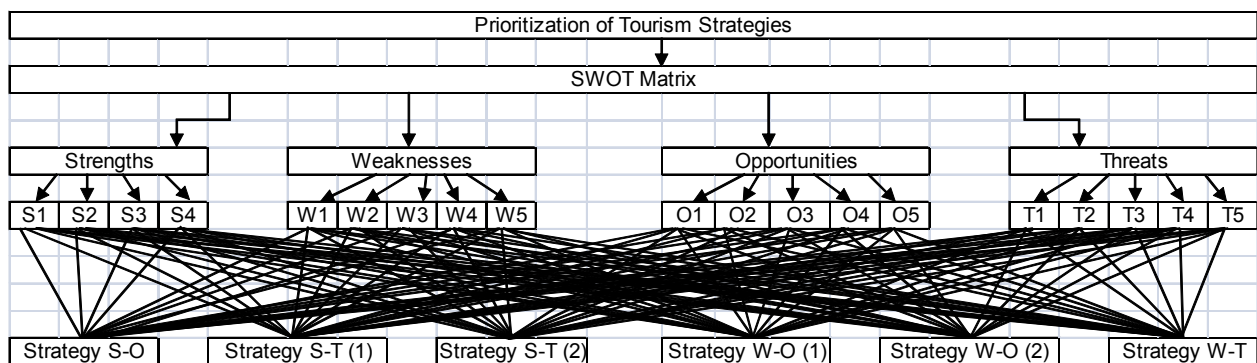


Figure 4. Hierarchical SWOT Matrix.

The pair-wise comparison matrices among SWOT groups and the subfactors of SWOT groups are given below (Table 3-7). These matrices were filled by the experts who are working in tourism sector.

Table 3. Priorities of SWOT groups.

With respect to the goal	Strengths	Weaknesses	Opportunities	Threats
Strengths	1	1/5	1	3
Weaknesses		1	5	7
Opportunities			1	3
Threats				1

Table 4. Priorities of strengths criteria.

With respect to strengths group	S1	S2	S3	S4
S1	1	3	7	5
S2		1	5	3
S3			1	1/3
S4				1

Table 5. Priorities of weaknesses criteria.

With respect to weaknesses group	W1	W2	W3	W4	W5
W1	1	3	5	5	3
W2		1	3	3	1
W3			1	1	1/3
W4				1	1/3
W5					1

Table 6. Priorities of opportunities criteria.

With respect to opportunities group	O1	O2	O3	O4	O5
O1	1	1	1/5	1/3	1/3
O2		1	1/5	1/3	1/3
O3			1	3	3
O4				1	1
O5					1

Table 7. Priorities of threats criteria.

With respect to threats group	T1	T2	T3	T4	T5
T1	1	3	5	3	5
T2		1	3	1	3
T3			1	1/3	1

Table 8. Priorities and consistency ratios of comparisons of the SWOT group and factors.

SWOT group	Priority of the group	SWOT factors	Inconsistency ratio	Priority of the factor within the group	Overall priority of the factor
Strengths	0.151	S1. Rich historical, cultural and natural beauties	0.04	0.565	0.085
		S2. Four seasons at the same time		0.262	0.039
		S3. Geographical location		0.055	0.008
		S4. Young labor to direct to tourism		0.118	0.018
Weaknesses	0.635	W1. Lack of interest of governance and tourism policies	0.01	0.466	0.296
		W2. Lack of qualified employee		0.194	0.123
		W3. Shadow economy		0.073	0.046
		W4. Irregular construction		0.073	0.046
		W5. Lack of education of the society about tourism and tourists		0.194	0.123
Opportunities	0.151	O1. Increasing interest to congress, health and culture tourism	0.01	0.073	0.011
		O2. Quickly developing world tourism		0.073	0.011
		O3. EU candidature of Turkey		0.466	0.070
		O4. Easier and cheaper travelling		0.194	0.029
		O5. Being so cheap according to Europe		0.194	0.029
Threats	0.062	T1. Getting stronger of EU member competitor countries with the membership of EU	0.01	0.466	0.029
		T2. Image problem of Turkey		0.194	0.012
		T3. Environmental problems		0.073	0.005
		T4. Political and economical instability		0.194	0.012
		T5. Damaging the natural structure because of the unconscious tourism investments		0.073	0.005

The priority weights of the categorized subfactors can be seen from Table 8. Among the subfactors of weaknesses, *Lack of interest of governance and tourism policies* has the largest weight. This subfactor is the main sub-weakness, which forces government to have policies about tourism and to interest with tourism, and this must be eliminated by

With respect to threats group	T1	T2	T3	T4	T5
T4				1	3
T5					1

Using the pair-wise comparison matrices given above and Expert Choice software package, the following priorities of the SWOT groups and subfactors have been obtained (Table 8). To show how Expert Choice finds the priorities in Table 8, the calculation steps for the priorities of the SWOT groups is given below:

The first step is the sum the numbers in each column of Table 3. Then you must find the results 7.333, 1.543, 7.333, and 14.000, respectively. Later, each number in a certain column is normalized by dividing the column's sum. In doing so, the first line of the matrix of Table 3 is obtained as 0.136, 0.130, 0.136, and 0.204. And finally, the priority of Strengths is calculated by summing the numbers in the first line and dividing the frequency that is 4 in this case: $(0.136 + 0.130 + 0.136 + 0.204)/4 = 0.151$. The inconsistency ratios represent if the experts are consistent with themselves while assigning the scores in the pair-wise comparison matrices. If this ratio is at most 0.10, this means the pair-wise comparison matrix is consistent. The priorities of the factors within the groups are obtained in the same way by using the matrices in Tables 4-7. The overall priorities are calculated by multiplying the priorities of the factors within a group by the priority of that factor's group. For example, $0.151 \times 0.565 = 0.085$.

Turkey. *Rich historical, cultural and natural beauties* is the most important strength that will increase the potential of Turkey. *EU candidature of Turkey* is the opportunity with the largest priority that will create new opportunities to Turkey. Also, *Getting stronger of EU member competitor countries with the membership of EU* is the most important threat.

After calculating the priorities of each group and each subfactor within the group and the overall priority of the subfactor, the next problem is to prioritize the possible tourism strategies with respect to each group and each subfactor of each group. So, the next step is to define the possible tourism strategies.

4.3. Possible Tourism Strategies

Possible tourism strategies are the alternatives for the AHP problem above. According to strengths, weaknesses, opportunities and threats main factors and their subfactors, the strategies are defined with experts' view (Figure 3). The possible strategies are as follows:

(S-O) *Government promotion of 3 seasons investments (except summer) and scientific and commercial meetings to organize in low seasons.*

In several countries, tourism is more active in certain seasons. Summer tourism is the highest season in Turkey and it is rather popular. Therefore government promotion to spring, winter tourism, or summer tourism areas but not in summer will increase Turkey's feasible investments and market sharing.

(W-O(1)) *Eliminate the lack of education of the society about tourism and tourists and create labor classes that recognize different cultures.*

Surely, conscious and well-educated society will increase the tourism potential of Turkey.

(W-O(2)) *Government promotion about transportation and investment to the areas that have high tourism potential but low recognition.*

In Turkey, very limited touristic areas are known among tourists and there are lots of other beautiful and attractive locations. Government promotion to the investments in these areas and to the transportation to these areas will be a positive effect on Turkey's tourism potential.

(S-T(1)) *Conscious and planned investments in a such way that not to damage rich historical, cultural and natural beauties.*

Also invested areas are important for this sector. Damaged historical, cultural and natural areas can not attract tourists.

(S-T(2)) *Image improvement with the advertisements, promotion and education and create a "cheap, qualified and secure" image for Turkey.*

As mentioned before, cheapness of Turkey can be an opportunity to increase tourism market sharing if it combines with high quality and high reliability.

(W-T) *Making the tourism areas more secure and stable that have high tourism potential but low secure.*

As defined in W-O(2) strategy, there are lots of areas that have rich natural beauties, historical and cultural beauties, but low security (i.e. terror). Making these areas more secure will surely increase the tourism potential of Turkey.

4.4. Evaluation of Tourism Strategies of Turkey

Taking into account the hierarchy in Figure 4, in this

section the importance weights of tourism strategies will be determined. For every subfactor in the hierarchy, the strategy alternatives will be pair-wise compared. The strategy with the largest weight should be implemented.

Table 9. The pair-wise comparisons of alternative strategies with respect to the strengths.

With respect to	Inconsistency ratio	Priorities of the alternatives with respect to
S1		
S-O	0.01	0.186
W-O(1)		0.068
W-O(2)		0.068
S-T(1)		0.423
S-T(2)		0.186
W-T		0.068
S2		
S-O	0.00	0.375
W-O(1)		0.125
W-O(2)		0.125
S-T(1)		0.125
S-T(2)		0.125
W-T		0.125
S3		
S-O	0.00	0.083
W-O(1)		0.083
W-O(2)		0.250
S-T(1)		0.250
S-T(2)		0.250
W-T		0.083
S4		
S-O	0.00	0.100
W-O(1)		0.300
W-O(2)		0.100
S-T(1)		0.100
S-T(2)		0.300
W-T		0.100

Table 10. The pair-wise comparisons of alternative strategies with respect to the weaknesses.

With respect to	Inconsistency ratio	Priorities of the alternatives with respect to
W1		
S-O	0.00	0.311
W-O(1)		0.170
W-O(2)		0.170
S-T(1)		0.089
S-T(2)		0.089
W-T		0.170
W2		
S-O	0.01	0.073
W-O(1)		0.443
W-O(2)		0.073
S-T(1)		0.073
S-T(2)		0.210
W-T		0.129
W3		
S-O	0.00	0.111
W-O(1)		0.222
W-O(2)		0.222
S-T(1)		0.111
S-T(2)		0.111
W-T		0.222

With respect to W4	Inconsistency ratio	Priorities of the alternatives with respect to W4
S-O	0.01	0.073
W-O(1)		0.073
W-O(2)		0.210
S-T(1)		0.443
S-T(2)		0.073
W-T		0.129
With respect to W5	Inconsistency ratio	Priorities of the alternatives with respect to W5
S-O	0.01	0.073
W-O(1)		0.443
W-O(2)		0.073
S-T(1)		0.073
S-T(2)		0.210
W-T		0.129

Table 11. The pair-wise comparisons of alternative strategies with respect to the opportunities.

With respect to O1	Inconsistency ratio	Priorities of the alternatives with respect to O1
S-O	0.01	0.423
W-O(1)		0.186
W-O(2)		0.068
S-T(1)		0.068
S-T(2)		0.186
W-T		0.068
With respect to O2	Inconsistency ratio	Priorities of the alternatives with respect to O2
S-O	0.01	0.060
W-O(1)		0.334
W-O(2)		0.151
S-T(1)		0.060
S-T(2)		0.334
W-T		0.060
With respect to O3	Inconsistency ratio	Priorities of the alternatives with respect to O3
S-O	0.01	0.059
W-O(1)		0.160
W-O(2)		0.059
S-T(1)		0.160
S-T(2)		0.402
W-T		0.160
With respect to O4	Inconsistency ratio	Priorities of the alternatives with respect to O4
S-O	0.01	0.068
W-O(1)		0.068
W-O(2)		0.423
S-T(1)		0.186
S-T(2)		0.068
W-T		0.186
With respect to O5	Inconsistency ratio	Priorities of the alternatives with respect to O5
S-O	0.01	0.068
W-O(1)		0.068
W-O(2)		0.186
S-T(1)		0.068
S-T(2)		0.423
W-T		0.186

Table 12. The pair-wise comparisons of alternative strategies with respect to the threats.

With respect to T1	Inconsistency ratio	Priorities of the alternatives with respect to T1
S-O	0.01	0.044
W-O(1)		0.113
W-O(2)		0.113

S-T(1)		0.113
S-T(2)		0.505
W-T		0.113
With respect to T2	Inconsistency ratio	Priorities of the alternatives with respect to T2
S-O	0.01	0.060
W-O(1)		0.060
W-O(2)		0.151
S-T(1)		0.060
S-T(2)		0.334
W-T		0.334
With respect to T3	Inconsistency ratio	Priorities of the alternatives with respect to T3
S-O	0.01	0.186
W-O(1)		0.068
W-O(2)		0.186
S-T(1)		0.423
S-T(2)		0.068
W-T		0.068
With respect to T4	Inconsistency ratio	Priorities of the alternatives with respect to T4
S-O	0.01	0.066
W-O(1)		0.066
W-O(2)		0.117
S-T(1)		0.117
S-T(2)		0.200
W-T		0.434
With respect to T5	Inconsistency ratio	Priorities of the alternatives with respect to T5
S-O	0.02	0.057
W-O(1)		0.057
W-O(2)		0.150
S-T(1)		0.529
S-T(2)		0.057
W-T		0.150

In Table 9, the pair-wise comparison matrices of alternative strategies with respect to the strengths detailed in section ‘SWOT Analysis for Tourism Strategies in Turkey’ are given together with the inconsistency ratios. For example, with respect to *rich historical, cultural and natural beauties* (S1), the strategy with the largest priority is the *conscious and planned investments in a such way that not to damage rich historical, cultural and natural beauties* (S-T(1)). With respect to *four seasons at the same time* (S2), the strategy with the largest priority is the *government promotion of 3 seasons investments (except summer) and scientific and commercial meetings to organize in low seasons* (S-O) and so on.

In Table 10, the pair-wise comparison matrices of alternative strategies with respect to the weaknesses are given together with the inconsistency ratios. For example, with respect to W1, the strategy S-O has the largest priority, with respect to W2, the strategy W-O(1) has the largest priority. With respect to W3, the strategies W-O(1), W-O(2), and W-T have the same largest priorities.

In Table 11, the pair-wise comparison matrices of alternative strategies with respect to the opportunities are given together with the inconsistency ratios. And in Table 12, the pair-wise comparison matrices of alternative strategies with respect to the threats are given together with the inconsistency ratios.

Using the Expert Choice software, the results are obtained

and shown in Figure 5. These are the results of all the main and subfactors. The rank order of the tourism strategies is W-O(1), S-O, S-T(2), W-T, W-O(2), and S-T(1). Thus, the strategy *eliminating the lack of education of the society about tourism and tourists and create labor classes that recognize different cultures* has the largest priority that Turkey must take care.

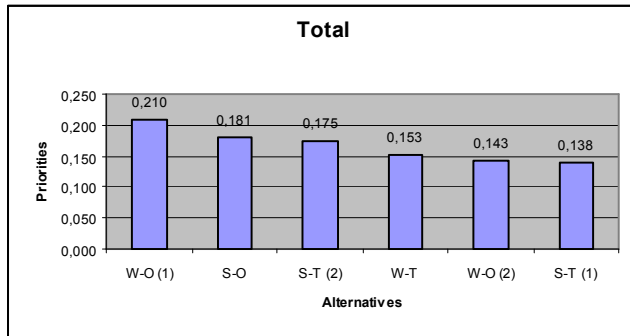
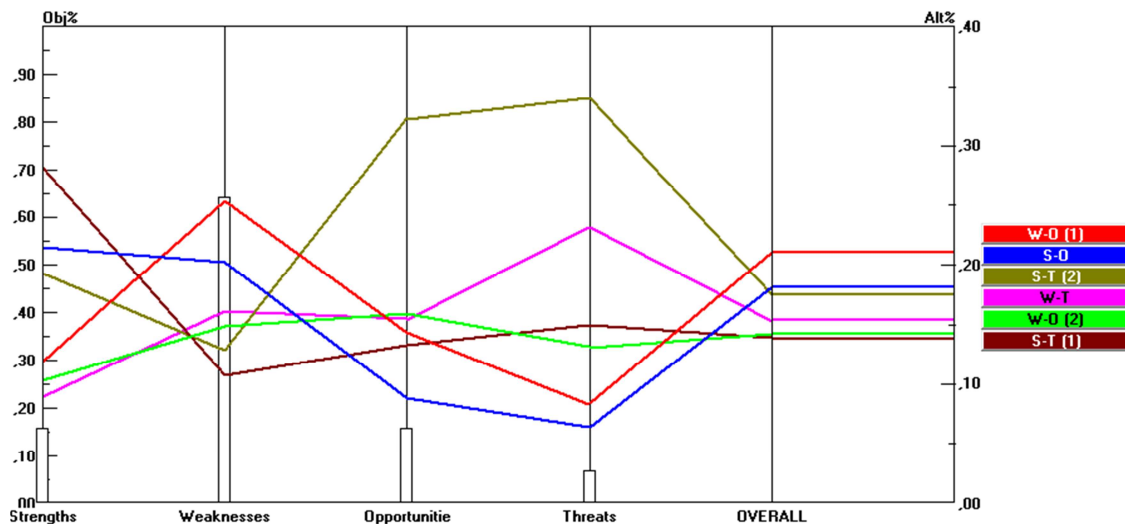


Figure 5. Priorities of tourism strategies.

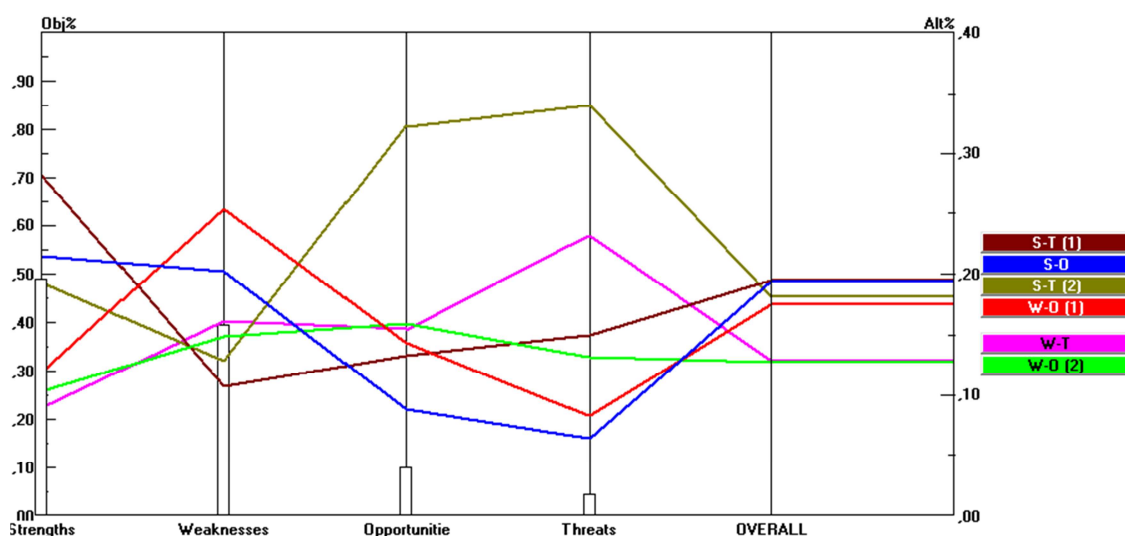
A sensitivity analysis is given for SWOT groups and strategy alternatives in Figures 6a, b and c. From Figure 6a, the performance sensitivity graph according to the pair-wise comparisons and prioritizations can be seen.

From Figure 6b, it can be seen that when the weight of the strengths group are increased to make it the largest of all the groups, as illustrated on strengths line, the rank order becomes S-T(1), S-O, S-T(2), W-O(1), W-T, and W-O(2). The overall weights on the right side of the figure, indicating that S-T(1) (*Conscious and planned investments in a such way that not to damage rich historical, cultural and natural beauties*) is the most important strategy of all.

From Figure 6c, it can be seen that when the weight of the threats group are increased to make it the largest of all the groups, as illustrated on threats line, the rank order becomes S-T(2), W-T, W-O(1), S-T(1), W-O(2), S-O. The overall weights on the right side of the figure, indicating that S-T(2) (*Image improvement with the advertisements, promotion and education and create a "cheap, qualified and secure" image for Turkey*) is the most important strategy of all.



a



b

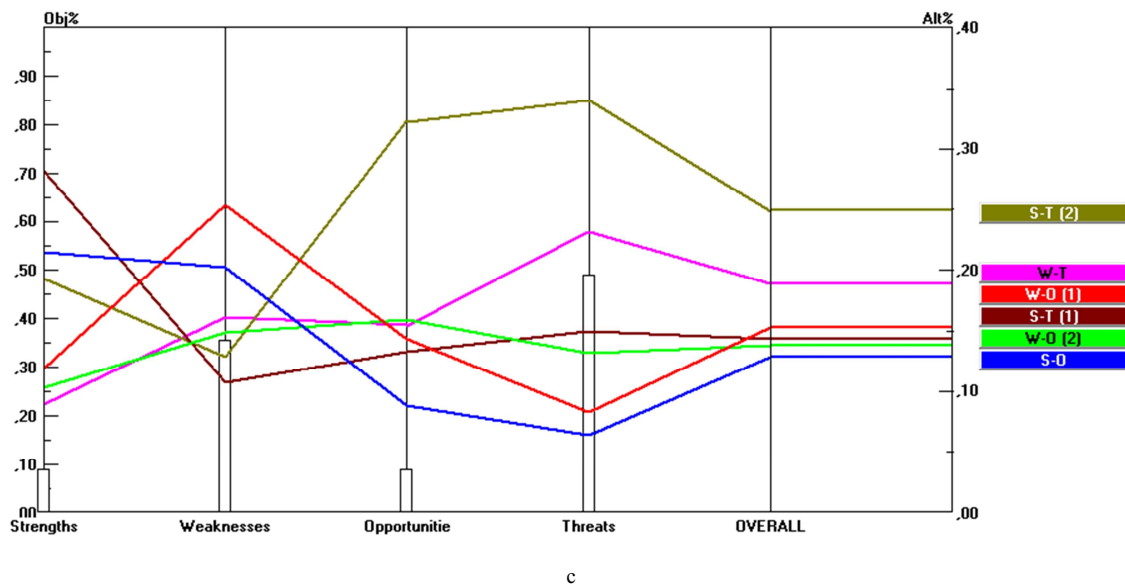


Figure 6. Sensitivity analysis for SWOT groups and strategy alternatives.

5. Conclusion

The analysis based on SWOT-AHP technique has been applied to various areas such as energy, agriculture, machine-tool industry, etc. Using these technique, the subfactors of SWOT factors could be prioritized and thus which subfactors of SWOT must be first given attention can be determined. This analysis has the ability of determining both the priorities of SWOT factors and the tourism strategies. This analysis also presents the possibility of making sensitivity analysis. The effect of any change in the importance of main factors can be seen on the sensitivity graphs.

Society and the government play the primary role to make tourism a success, to develop this sector and to increase the market share of Turkey. The framework explained in this paper provides a direction for consideration of the evaluation of tourism strategies. The case study of Turkey provides an illustrative reference for the strategy evaluation. This model would be beneficial for evaluating any other national tourism strategies and also comparing its priority with the other tourism strategies. The qualitative analysis of the factors and strategies is highly subjective and may differ from an expert to another.

This study concludes that among the SWOT subfactors, the weakness 'lack of interest of governance and tourism policies' is the most important subfactor whereas the second order subfactors are 'lack of qualified employee' and 'lack of education of the society about tourism and tourists'. The strategy 'eliminate the lack of education of the society about tourism and tourists and create labor classes that recognize different cultures' has been found as the most important strategy for tourism in Turkey. The second important strategy is 'government promotion of 3 seasons investments (except summer) and scientific and commercial meetings to organize in low seasons'. But the weights of strategies are near to another. This may be due to number of strategies. In further

researches these strategies can be classified as strategies for society, strategies for government or strategies for tourism employee, etc. And for further researches, the combination of SWOT and AHP may be changed to other well-known multicriteria methods (TOPSIS, ELECTRE, and Scoring), and the results of other methods with SWOT-AHP can be compared.

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