Developments in Tourism Climatology

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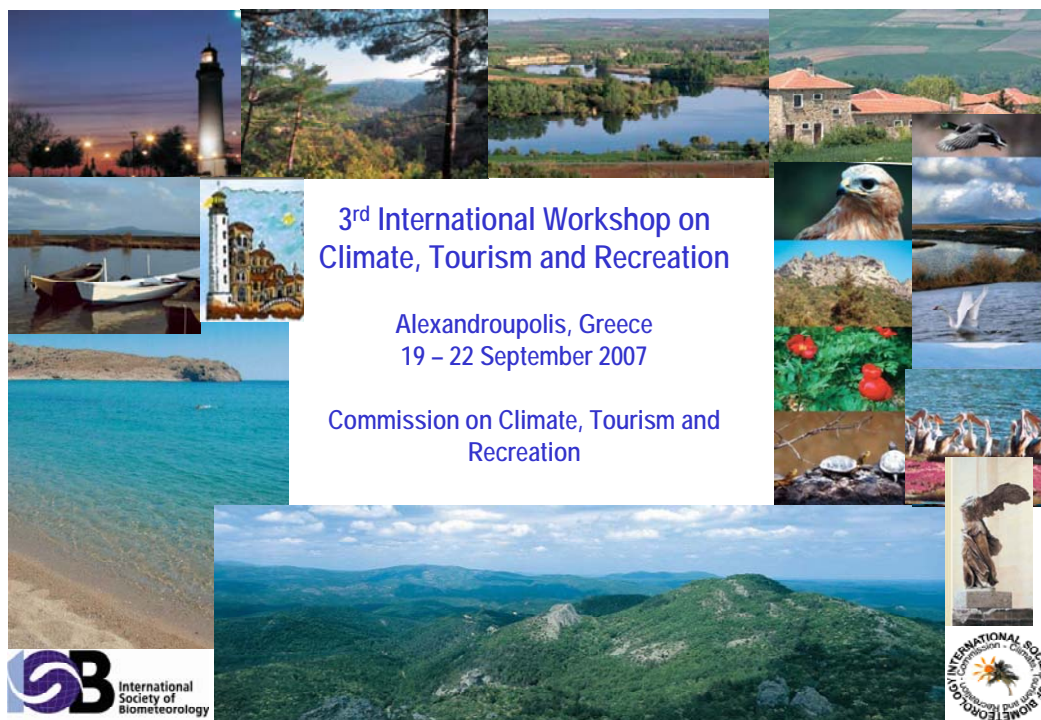
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SPA DESTINATION DEVELOPMENT USING A DECISION SUPPORT SYSTEM - THE ROLE OF CLIMATE AND BIOCLIMATE INFORMATION

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ABSTRACT The success of a tourism destination in attracting tourists depends upon the quality of the essential benefits that it offers. Especially for spa tourism (the term spa is used here to describe health-oriented vacation opportunities) it is crucial to offer not only facilities, accessibility and attractions, but also natural factors such as a good bioclimate regime. The study will propose a decision support system (DSS) that takes into account the bioclimate regime and spa features crucial for spa tourism development in Greece. The DSS will be based on a computer based information system and will aid an evaluation of the factors mentioned previously and is the decision making regarding the suitability of a place for a health/spa resort.

KEYWORDS: *Spa/health/wellness tourism, bioclimate regime, DSS, Analytical Hierarchy Process*

INTRODUCTION

Previous papers on health tourism have defined climate as an important factor that satisfies the needs of visitors of a spa/health resort (Didaskalou et al., 2004). The good climatic and bioclimatic conditions are of crucial importance for the competitiveness of a destination as weather and climate are the main motivations for travel, apart from the destination's natural resource base and attractions. Effective planning and management of a destination must take account of many factors that influence one's choice of a holiday to a specific region, especially when the tourism product is coherent with the market segment of spa tourism. It must be mentioned that, although the term health/spa/wellness tourism is widely used in European tourism, unfortunately there is no universally agreed-upon definition of spa tourism. For the purposes of this study it is assumed that tourism activities of this market segment are for "healthy" people whose main motive is to preserve or improve their health.

The diverse nature of recreation and tourism makes it hard for policy-makers and planners to define it and grasp it conceptually. This has resulted in substantial difficulties to develop appropriate policies, while the coordination of the various elements of the recreation and

tourism product has been extremely difficult (Hall and Page, 2006). As decision making in the tourism industry, and especially in the segment of health/spa/wellness tourism, becomes increasingly complex for organizations and business, as one demands a genuine experience, decision makers might benefit from a Decision Support System (DSS). Decision support systems couple the intellectual resources of individuals with the capabilities of the computer to improve the quality of decisions, as for example the choice of a location for a new spa/health resort (Turban et al., 2005).

Figure 1: Greek islands under consideration in the model's construction

The following study is of an exploratory nature and will introduce a computerized decision support system that can provide guidance to a tourism organization in the decision making process regarding the most suitable destination for spa development - taking into account the climate regime and other factors. The aim of the authors is not to give an overall framework as special information is needed. The given model provides a necessary basis but requires further enhancement. The destinations studied here are Corfu, Zakynthos, Santorini and Samos.

HEALTH TOURISM IN GREECE

Health and wellness tourism is the fastest growing tourism sector as spas now offer a relaxation and health component in addition to the traditional holiday. There may be several reasons for this trend but the following factors play a crucial part (García-Altés, 2005):

Population Ageing: The postwar baby-boom cohort is approaching the age of highest disposable income and highest propensity to travel. They may be less price-conscious and also more sensitive to other aspects of the marketing mix (location, destinations, confidentiality, quality, etc.)

Lifestyle Changes: Demographics and lifestyles of these target markets will mean a marked increase in demand for cosmetic surgery, spas, retirement communities, fitness centres, and addiction treatment centres.

Tourism Alternatives: Today's consumers are already well-traveled and look for a new and different holiday experience.

As there will be an increasing demand for spiritual products based on inner experiences, a current boom for health and spa products is expected. Health products will also increasingly be added to other tourism and leisure products and accommodation operators will develop combined products in the areas of health and creative tourism.

Tourism in Greece has been growing significantly in certain areas such as Rodos, Crete, Corfu and Myconos. As the environmental impact is very extensive, the attempt to promote off-peak tourism to these or other destinations represents one way of reducing the pressure on the environment (Didaskalou and Nastos, 2003). The issue of seasonality in tourism flows has attracted the attention of tourism researchers for several decades (Amelung et al., 2007). The conventional sun-and-sea segment is still the dominating form of Greek tourism, but the seasonality in tourism flows has attracted the attention of those who are responsible for providing guidance for the industry. One of the objectives of the Greek tourism strategy is to promote various forms of tourism and, indirectly, reduce the seasonality of demand. Within the scope of this strategy investments of special tourism infrastructure for the development of thematic forms of tourism (hydrotherapy centres etc.) are financed. The trend of decline in spa tourism in Greece is a consequence of the focus that is set on reducing the guest's illness. On the other hand, wellness is seen as a new market segment and is being strongly encouraged through attractive package deals. The enrichment of the Greek spa tourism product is necessary as it is affected by a growing competition from emerging countries, especially from Eastern Europe. Competition is also emerging from countries that reposition themselves in the market by diversifying the old-fashioned image these resorts conveys, which is basically linked to health and mainly addressed to an aged segment. Facilities that may be provided by spa resorts are: sauna, solarium, sport/fitness, steam bath, swimming pool, whirlpool and a medical centre (Müller and Kaufmann, 2001). It is an asset if the resort offers services using thermal spring water.

But which destinations can be successful as a spa destinations? Which places must be promoted as places to visit because they offer a good spa tourism product that ensures a special experience for visitors, meeting or exceeding their expectations, while maximizing the benefits of the destination? This is quite a complex topic. All destinations share certain characteristics. Their success in attracting tourists will depend upon the quality of the essential benefits that they offer: attractions, facilities, accessibility and climate (Holloway, 2006). Also the diverse nature of recreation and tourism has meant that the industry is difficult for policy-makers and planners to define and grasp conceptually; so any decision making by tourism organizations or businesses is not an easy job.

DECISION SUPPORT SYSTEMS IN TOURISM

As the tourism industry changes rapidly, one must use new tools and techniques in making effective decisions. But the tourism industry has yet to recognize the value that decision support technologies like DSS can provide. This refers to demand-oriented systems such as the destination management or consumer-oriented travel-counseling systems (Wöber and Gretzel, 2000). A DSS is usually built to help finding a solution to a certain problem or to evaluate an opportunity. As such it is called a DSS application. A DSS usually uses models and is built (often by end-users) as an interactive and iterative process. It supports all phases of decision-making and may include a knowledge component. A DSS can be used by a single user on a PC or can be web-based in order to be uses by many people at different locations. A major characteristic of a DSS is the inclusion of at least one model. These models can represent systems or problems with various degrees of abstraction. Most DSS analyses are performed numerically with mathematical or other quantitative methods (Turban et al., 2003). As conceptualized, DSSs support the intellectual resources of human decision makers through the design of computer models and the simulation of real-life experiences, DSSs continue to improve the quality of decisions by standardizing the process and logic information managers' choices and making the criteria for determining appropriate outcomes systematic (Piccoli and Wagner, 2003).

Successful decision making needs information. Finding the right data for decision making is a general problem, but it is particularly true for tourism management, in which marketing research data are poor and frequently lack comparability. Especially for health/spa tourism the problem is that no detailed market research studies have yet been conducted on this market segment to understand how it operates. Due to lack of reliable data on market potential and on the target profiles and expectations, the authors defined criteria through literature review.

MODEL CONSTRUCTION

The Analytical Hierarchy Process is an excellent method for selecting competing activities using distinct criteria. The criteria can be quantitative or qualitative in nature, and even quantitative criteria are handled by a decision maker's preference structure, rather than numerically. The topic of this research is to give a model that solves the problem of selecting a destination for health/spa tourism development. Therefore, criteria must first be established (Tab. 1). A DSS tool for constructing the model is the software Web-HIPRE, which is available on-line from Helsinki University of Technology at http://www.hipre.hut.fi/. Web-HIPRE is a Java-applet for multiple criteria decision making based on the decision support software HIPRE 3+. In Web-HIPRE the problem is structured hierarchically to form a value tree (Fig. 1). In this value tree each criterion is divided into its subcriteria, which are weighted by their importance to the decision maker (on the lowest level criteria the alternatives are weighted). The total weights of the alternatives are calculated from these local weights. The resulting model is called a value tree or a hierarchy of criteria and objectives depending on the tradition referred to.

Table 1: The evaluation framework

Dimension	Criteria	Weights	
Climate		25*	
	Temperature (^{o}C)		25%**
	Relative humidity (%)		30%**
	Sunshine (Hours)		25%**
	Wind speed (Knotts)		20%**
Accessibility	Time (min)	10*	
Attractions		12*	
	Archaeological sites (number)		70%**
	Monuments (number)		30%**
Springs	Local occurrence of natural resources (Y/N)	15*	
Facilities		20*	
	Hotels 4*/5* (number)		60%**
	Subsidy (category)		40%**

* Use of SMART Method for Priorities: Assign 10 points to the least important attribute and then give points (>10) to reflect the importance of the attribute relative to the least important attribute
** In direct weighting the weights of sub-criteria or alternative are directly given. By normalizing the weights the sum of weights is set to one.

The results of the DSS model are presented in Table 3, Figures 3 and 4. Samos gets the maximum score, not only when a decision is made using all criteria, but it also receives a higher evaluation if climate is the only criterion.

Table 2: Data of Model

Destination	Corfu	Zakynthos	Santorini	Samos
Climate				
Temperature	17.5	17.9	17.9	18.4
Relative humidity	70.9	73.3	67.5	60.4
Sunshine	2554.4	2517.4	2842.6	2974.0
Wind speed	4.3	5.0	11.2	10.8
Accessibility	60	60	50	60
Attractions				
Archaeological sites	6	0	1	1
Monuments	14	5	2	1
Springs	N	Y	Y	Y
Facilities				
Hotels 4* & 5*	65	23	71	7
Subsidy	2	2	2	3
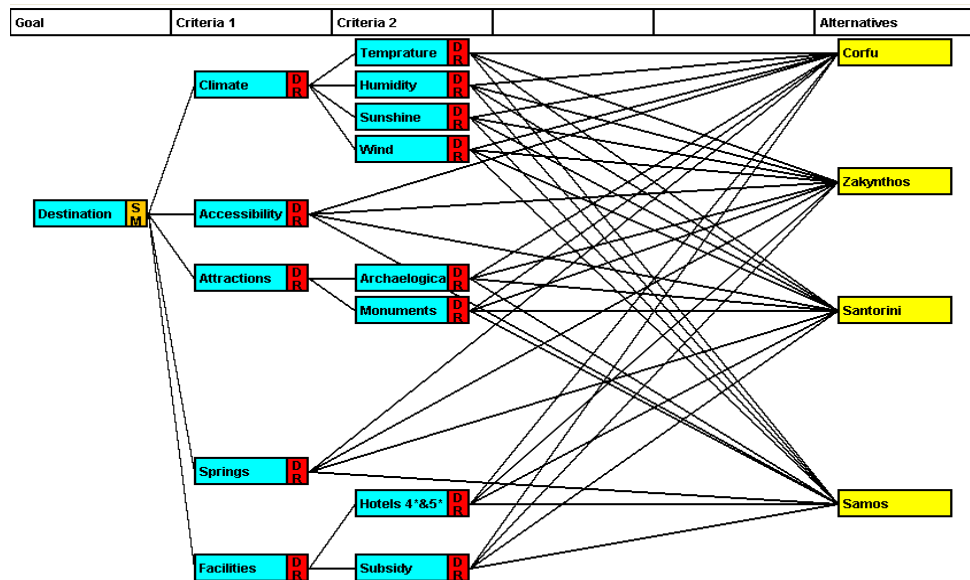
Figure 2: The Value Tree

Table 3: The scores for the destinations by DSS

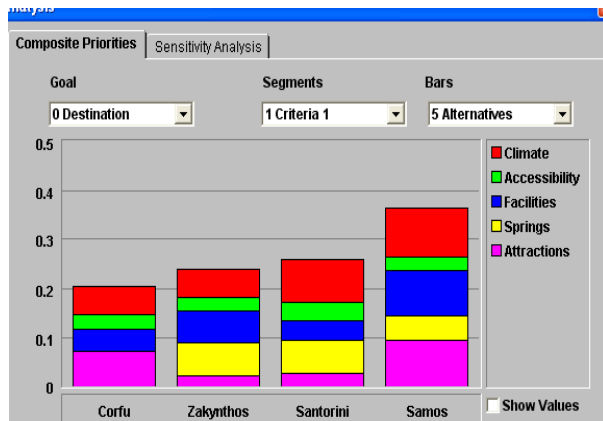| Destination	Corfu	Zakynthos	Santorini	Samos
Climate	0.058	0.059	0.088	0.100
Accessibility	0.028	0.028	0.037	0.028
Attractions	0.045	0.065	0.042	0.092
Natural Resources	0.000	0.067	0.067	0.050
Facilities	0.073	0.022	0.028	0.095
Overall	**0.205**	**0.241**	**0.260**	**0.366**

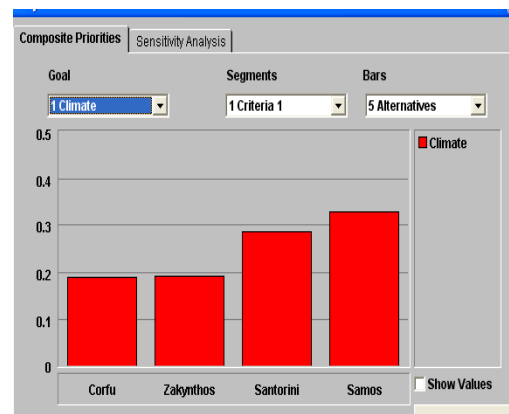**Figure 3: Deciding for the destination using all criteria**

Figure 4: Decision with criterion the climate

DISCUSSION

This article contributes to the literature by focusing on tools that tourism organizations require for supporting their decision in various fields. The increasing complexity of business operations means that companies must design technologically mediated decision making systems to complement human judgment and to standardize decision making in an attempt to create competitive advantage.

A key consideration for this explanatory study was not to create a role model but a model that will open up new dimensions for decision making in the tourism industry. Due to the fact that more and more people seek information on spa holidays, it is of great importance to offer spa services and facilities to competitive areas. It is believed that in the process of evaluating the destinations, selecting an appropriate decision method is important. In this study, the authors adopted the AHP method as the basis for their analysis. As favorite climatic conditions at destinations are key attractions for tourists, this is the major dimension of the criteria. Hence, the framework can be used as a first step to improve future planning in the segment of spa/health/wellness tourism.

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