



## Case Study

# The preference analysis for tourist choice of destination: A case study of Taiwan

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## ABSTRACT

This study identifies the factors that influence the tourists' choice of destination and evaluates the preferences of tourists for destinations. A 4-level AHP model, consisting of 22 attributes on the 4th level, was proposed and tested using data collected from tourists visiting Taiwan to establish the relative importance of pre-selected factors (criteria). By using fuzzy set theory and TOPSIS, the preference of 8 given destinations corresponding to each criterion can be evaluated and given final ranking. Results indicate that visiting friends/relatives and personal safety appear to be the 2 most important factors for inbound tourists to Taiwan, price is the least important and *Taipei 101* is the first priority for travelers.

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## 1. Introduction

The Asia Pacific region has been a rapidly growing tourism destination in the world since 2001. Statistics from the [World Tourism Organization \(2006\)](#) show that international tourists in the region grew to a total of 578 million in the first 8 months of 2006, up 4.5% from 553 million in those of 2005, a year which shows an all-time record of 806 million people traveling internationally. Growth is expected to continue in 2007 at a pace of around 4% worldwide. As the world's second fastest-growing region in the first 8 months of 2006 (+8.3%), the Asia and Pacific region remains strong. Notwithstanding this fact, research into Asian travel motivations has not attracted as much attention as European and US travel motivations ([Kim & Prideaux, 2005](#)). Empirical findings relating to Asia regions remain insufficient. Taiwan, as part of the emerging market in tourism, may be a small island, but its economy has a big impact internationally. Taiwan is the 7th largest trade partner of the US, and is the world's 14th largest trading entity in 2005. In tandem with the tremendous diversification of Taiwan's economy from one that is industry oriented to one that is leisure and entertainment oriented, Taiwan's government has committed to making tourism development a major policy. While Taiwan already has so much to offer to international travelers - its natural

beauty; a rich culture; amazing technological advancement; great cuisine; and friendly citizens; in order to compete as a prime tourist destination in the world market, it needs to draw up a blueprint. The government's great commitment is reflected in the Ministry of Transportation and Communication's decision to focus its new administration on tourism. The policy will serve as a guideline in developing Taiwan's new international image as a leisure and tourist destination. Much more collaboration between the public and private sectors is expected with the implementation of the policy. According to the Bureau of Tourism, the year 2005 yielded a bumper harvest for Taiwan's tourism industry. Total visitor arrivals for 2005 reached more than 3.3 million, exceeding the target of 3.25 million that had been set for the year. Total annual amount in visitor expenditures in tourism is 4035 million US dollars, whereas the annual growth rate is 3.78%. The Tourism Bureau has launched a project entitled "Doubling of Tourist Arrival Plan" (2002–2007) aimed at doubling the number of tourists visiting Taiwan by year 2008. To achieve this goal, it is important to understand why people travel to Taiwan and what factors influence their choices. The decision-making process leading to the final choice of a travel destination is a very complex process, and understanding what influences a traveler to choose a destination is important in developing appropriate marketing strategies. Recently, the Tourism Bureau, in its effort to promote Taiwan's international tourism brand image with "Taiwan, Touch your heart" as the international marketing slogan, has named 8 tourist spots as "Focus on Taiwan Tourism-Flagship Tourist Attraction." We selected these 8 tourist spots to be the alternatives in our case study.

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A 4-level Analytic Hierarchy Process (AHP) model, consisting of 22 attributes on the 4th level, was proposed and tested using data collected from tourists visiting Taiwan to establish the relative importance of pre-selected factors (criteria). By using fuzzy set theory and the technique for order preference by similarity to ideal solution (TOPSIS), the preference of 8 given destinations corresponding to each criterion are evaluated and given a final ranking.

Prioritizing factors and attributes affecting destination choice is a complex multi-criteria decision-making process. The AHP, a prevalent multi-criteria, multi-objective decision-making process, is particularly suitable for situations where most of the essential data is subjective. It can be consistently introduced into the priority setting and deals with decision problems involving multiple-criteria dimensions. AHP is unique in the sense that it recognizes bias and inconsistencies in subjective judgments. These inconsistencies can be tested and improved, resulting in a more consistent final ranking. For years AHP has been used in tourism planning (Moutinho & Curry, 1994), and convention site selection (Chen, 2006); however, there have been no empirical studies using AHP in destination choice. This study presents a decision-making model based on AHP for destination choice; it provides not only a general understanding of decision factors but also evaluates the relative weight of critical attributes affecting destination choice. The AHP converts individual preferences into ratio-scale weights; these resultant weights are used in ranking the alternatives and assisting the decision maker in making choices or forecasting an outcome. The drawback of AHP is the necessity of pairwise comparison that could result in a tedious comparison process if there are many alternatives to evaluate. Therefore, this study utilizes TOPSIS to evaluate the alternatives. TOPSIS, developed by Hwang and Yoon (1981), was based on the concept that the selected best alternative should have the shortest distance from the ideal solution and the farthest distance from the negative-ideal solution in a geometrical (Euclidean) sense. In other words, the ideal alternative has the best level for all attributes considered, whereas the negative ideal is the one with all the worst attributes value. A TOPSIS solution is defined as the alternative that is simultaneously farthest from the negative-ideal and closest to the ideal alternative. The TOPSIS has two main advantages: its mathematical simplicity and very large flexibility in the definition of the choice set. When solving real-life problems, or representing real world phenomena, linguistic variable usually appears to be an important output of the process. The descriptions and judgments on destination are in linguistic terms represented by fuzzy numbers in our study. The fuzzy set theory has been applied to the field of management science; however, it is scarcely used in the field of destination choice. Thus, this study that includes a fuzzy multiple-criteria decision-making process provides a coherent process for incorporating subjective views into an explicit decision process.

In Section 2 of this paper, we review the past studies on destination choice and state the objective of the study. In Section 3, we discuss the research methodology of evaluation. Section 4 presents a case application, and the final section presents the conclusion.

## 2. Literature review and objective of this study

### 2.1. Destination choice

According to Dellaert, Etterma, and Lindh (1998), tourists' decisions are complex multi-faceted decisions in which the choices for different elements are interrelated and evolve in a decision process over time, and most studies of tourists' travel choice address tourist destination choice as the key element in the travel decision-making process. The decision-making process is influenced by a number of psychological (internal) and non-psychological (external) variables,

and consists of a number of different stages that are marked by specific actions. Sirakaya and Woodside (2005) provided a comprehensive qualitative review of the tourist decision-making literature, and integrated the main conceptual and empirical work that has been reported in the tourism literature. According to their analysis, the destination choice set model developed by Um and Crompton (1990) is simpler and more theoretically and methodologically sound than the others in tourism decision research. In this model, a tourist's destination choice is made through a 3-stage sequential and funnel-like process: a composition of awareness set (an initial set of destinations that a tourist is aware of at any given time), an evoked set (late consideration set), and final destination choice. The evoked set is developed from the awareness set. It consists of various destinations that people actively seek information about for alternatives to best meet their needs. According to the choice set model, the destination should be included in each choice set stage in order to be selected as a final destination. The criteria that affect this process include personal (push) factors, destination attributes (pull factors), and constraints. Crompton and Ankamah (1993) suggested that one might use 2 or 3 criteria to reduce the number of alternatives from the awareness set to the evoked set; otherwise, there could be too many attributes to compare. In addition, Lam and Hsu (2006) mentioned that the complex decision-making process leading to the choice of a travel destination had not been well researched. Past studies related to destination choice mainly focus on identifying important attributes affecting destination choice; professional judgment and factor analysis are the main methods (Goossens, 2000; Heung, Qu, & Chu, 2001; Kim & Prideaux, 2005; Kozak, 2002). These studies have contributed to identifying many factors; the 5-point (or 7-point) Likert scale was used for rating the importance of each factor, and the factors extracted are arranged in order of decreasing variance, but little has been learned about the relative importance of each one by pairwise comparison. Nicolau and Más (2006) pointed out the choice of tourist destination that distinguishes between various approaches to the definition of tourist destination; they showed an overview of the empirical evidence of destination choice with revealed and stated preference probabilistic models respectively, as demonstrated in Tables 1 and 2 of their paper. Either multinomial logit model or nested multinomial logit model is used to investigate the choice of destination in most of those papers. In addition to the above, the literature of destination choice is centered on the direct impact of destination attributes such as prices and distance (Nicolau & Más, 2006), climate (Hamilton & Lau, 2004), quality and pricing (Goossens, 2000). Furthermore, a number of studies were concerned with identifying pleasure motivations which influence the destination choice; however, empirical choice literature has devoted little attention to the impact of tourist motivations on the selection of destinations (Nicolau & Más, 2006). In this study, destination choice can be conceptualized as a tourist's selection of a destination from a set of alternatives; that selection is determined by various motivational factors. The study includes fuzzy multiple-criteria decision-making theory to strengthen the rationality and comprehensiveness of the decision-making process. The AHP is a non-compensatory model because a decision may be determined by an object's score on a single attribute, irrespective of its score on other attributes. Fuzzy TOPSIS is a compensatory model because it entails that bad attribute values can be compensated by good values on their attributes, and the alternative chosen is superior to the other alternatives in the sum of the weighted utilities of all the attributes considered and leads to maximization of utilities. Using AHP combining with fuzzy TOPSIS, which consider both psychological compensatory and non-compensatory effects in the process of decision, can be considered as a more rational and more efficient model for destination choice. The method applied in our study is another approach to destination decision-making, with a view to illustrating the same process in

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