



## Resource-based destination competitiveness evaluation using a hybrid analytic hierarchy process (AHP): The case study of West Virginia☆☆☆



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### ABSTRACT

This study applies a hybrid analytic hierarchy process (AHP) to evaluate West Virginia's (WV) resource-based tourism competitiveness in relation to its neighboring states. The study also sought to investigate the utility of AHP in destination competitiveness evaluation. Ten executive directors from West Virginia's Convention and Visitors Bureaus (CVBs) and 891 visitors to West Virginia participated in this study. Findings revealed that West Virginia performed well in the areas such as availability of adventure-based and nature-based activities, and had a competitive edge on hospitality and friendliness of residents, safety and security, and value for money in shopping items. However, WV was seen to be less competitive on variety and quality of restaurants and availability of activities for children. The hybrid AHP model was shown to be a reliable tool to evaluate destination competitiveness. Theoretical and managerial implications and future research suggestions are discussed.

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### 1. Introduction

"In an ever more saturated market, the fundamental task of destination management is to understand how a tourism destination's competitiveness can be enhanced and sustained. There is thus a strong need to identify and explore competitive (dis)advantages and to analyze the actual competitive position" (Gomezelj & Mihalič, 2008, p. 294). It is worthwhile for destinations to focus attention and limited resources on those attributes that are likely to have the greatest beneficial impact (Crouch, 2011).

#### 1.1. Study problem

A common weakness among most existing competitiveness studies is that the competitiveness attributes are not weighted. Not all attributes are equally important in terms of their contribution to destinations' competitiveness. While some scholars (Enright & Newton, 2004; Kim, Guo, & Agrusa, 2005) have recognized the critical importance of weighting competitiveness attributes, they used visitors' ratings of the importance of attributes on Likert type scales. Simply allocating weights

is problematic because the relative importance is unknown and the consistency of respondents' ratings cannot be detected. Analytic hierarchy process (AHP) enables easy detection of inconsistencies of responses and the reliability of measurement (Czaja, Schulz, Lee, & Belle, 2003).

AHP is a classical multi-criteria decision making (MCDM) tool, in which all factors affecting decision making are structured in a tree hierarchy and assigned weights. The core of the AHP is weighting criteria and indicators with pairwise comparison. It has received increasing attention in the literature and has been used to address decision-making in a number of interdisciplinary contexts including: resource allocation (Alphonse, 1997), performance measuring (Frei & Harker, 1999; Suwignjo, Bititci, & Carrie, 2000), water resource evaluation (Jaber & Mohsen, 2001), indoor environment assessment (Chiang & Lai, 2002), environmental transport system selection (Yedla & Shrestha, 2003), education quality indicator (Viswanadhan, 2009), and much more extensive areas (Ishizaka & Labib, 2011). In tourism, AHP has been employed in studies addressing selection and/or evaluation issues such as: tourism natural attraction evaluation (Deng, King, & Bauer, 2002), convention site selection (Chen, 2006), hotel location choice (Chou, Hsu, & Chen, 2008), online personalized attraction recommendation system (Huang & Bian, 2009), and tourist destination preference evaluation (Hsu, Tsai, & Wu, 2009).

Destination competitiveness evaluation is a multi-criteria assessment process where criteria are subjective, somewhat abstract or unquantifiable. It is, therefore, appropriate to apply AHP in destination evaluation. However, not many competitiveness studies employed AHP. While Crouch (2011) used the AHP to determine the relative importance of competitiveness attributes, he did not use the method to evaluate a specific destination, nor compared the methodology to traditional evaluation methods. This study examines the competitiveness

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evaluation outcome difference resulting from the application of AHP method compared to the traditional non-weighted method.

### 1.2. Study area

The state of West Virginia is located in eastern United States (US), bordered by Virginia to the southeast, Kentucky to the southwest, Ohio to the northwest, Pennsylvania to the north, and Maryland to the northeast. As a tourism destination, it is marketed under the slogan of *Wild and Wonderful West Virginia*. Travel and tourism has great impact on the state's economy. As recorded in the Economic Impact of Travel on West Virginia (Dean Runyan Associates, 2013), visitors' travel spending has increased by 5.6% per year since 2000 (in 2010, it was about \$11.7 million per day), significantly contributing to jobs, and local and state government revenues. Compared to its neighboring states, the state's tourism impact seems very small. WV's neighboring states have much bigger economic impact in terms of visitor spending, tax receipts, and employment (USTA, 2012). USTA (2014) forecasts steady growth of both U.S. domestic business and leisure travel from 2014 to 2017. West Virginia's destination management has a responsibility to ensure that the destination is competitive enough to fully capitalize on this promising forecasted future.

### 1.3. Study objective

The purpose of this study is to evaluate West Virginia's resource-based destination competitiveness and identify the tourism strengths and weaknesses of the state through the application of a hybrid AHP. The study also seeks to investigate if the hybrid AHP method makes a significant difference in evaluation results compared to non-weighted method. In this study, the non-weighted method refers to simply allocating weights to attributes.

Three research questions were proposed to achieve the goals of this study. What are the most and least important attributes for West Virginia's destination competitiveness from destination managers' point of view? What are the strengths and weaknesses of West Virginia as a tourism destination compared to neighboring destinations? Does the hybrid AHP method make a significant difference in destination competitiveness evaluation compared to the non-weighted method?

## 2. Literature review

### 2.1. The concept of destination competitiveness

Competitiveness in tourism is borrowed from economics where the concept has been widely studied at the national level. Scott and Lodge (1985, p. 3) defined national competitiveness as "a country's ability to create, produce, distribute goods and/or service products in international trade while earning rising returns on its resources". Newall (1992, p. 1) described competitiveness as producing more and better quality goods and services that are marketed successfully to consumers at home and abroad, and that it speaks directly to whether a nation's economy can provide a high and rising standard of living for their children and grandchildren.

Crouch and Ritchie (2000) stated that competitiveness is a country's ability to create added value and thus increase the national wealth by managing assets and processes, attractiveness, aggressiveness and proximity. At the industry level, Cracolici and Nijkamp (2009) defined competitiveness as a unit's both qualitative and quantitative superiority over its real or potential competitors.

Researchers have endeavored to find a suitable definition of destination competitiveness. Dwyer, Forsyth, and Rao (2000) examined destination competitiveness based on price differentiation. They defined competitiveness as "a general concept that encompasses price differentials coupled with exchange rate movements, productivity and qualitative factors affecting the attractiveness of a destination" (Dwyer et al.,

2000, p. 9). Hassan (2000) defined destination competitiveness as a destination's ability to create and integrate value-added product to maintain its competitive edge over competitors, while sustaining its resources. In line with Hassan's definition, the definition proposed by Dwyer and Kim (2003) suggests that destination competitiveness is associated with a destination's ability to deliver goods and service better than other destinations do. Early studies recognized that competitiveness is both a relative and multidimensional concept (Crouch & Ritchie, 1999; Scott & Lodge, 1985).

Overall, while there is no universally acceptable definition of destination competitiveness, it is important to note that the definition of destination competitiveness consists of several critical components: a destination, goods/services or tourist experiences, consumption reflection (tourist/visitors' during and after trip feeling), and comparison of objects (other destinations). For this study, destination competitiveness is defined as a destination's relative performance superiority in relation to other destinations as perceived by tourists.

### 2.2. Competitiveness evaluation models

Destination competitiveness has been empirically studied through the lens of diverse conceptual models.

Porter (1990) introduced the diamond model to examine industry competitiveness. In this model, four broad attributes of a nation fundamentally determine the competitiveness of an industry or a company: (a) factor conditions, referring to the supply of skilled labor or infrastructure, (b) demand conditions, (c) related and supporting industries and (d) firm strategy, structure, and rivalry. Chon and Mayer (1995) drew upon Porter's diamond competitiveness model in their case study of Las Vegas and included five main factors: appeal, management, organization, information, and efficiency. De Keyser and Vanhove (1994) suggested that evaluation of competitiveness should be based on five factors: tourism policy, macro-economics, supply, transport, and demand factors. This model was adopted later in two competitiveness studies of Slovenian tourism (Gomezelj & Mihalič, 2008; Sirse & Mihalic, 1999). Enright, Scott, and Dodwell (1997) proposed an alternative framework that divided drivers of competitiveness into six categories: inputs, industrial and consumer demand, inter-firm competition and cooperation, industrial and regional clustering, internal organization and strategy of firms and institutions, and social structures and agendas.

Richie and Crouch's (2003) conceptual model comprises of 36 indicators grouped under the five categories: core resources and attractors, supporting factors and resources, destination management, destination policy, planning and development, and qualifying and amplifying determinants. Dwyer and Kim (2003) proposed a destination competitiveness model consisting of seven main components similar to those proposed by Crouch and Ritchie (1999; 2003). The components in Dwyer and Kim's (2003) model included: endowed resources, created resources, supporting factors, destination management, situational conditions, demand factors, and market performance. Dwyer, Livaic and Mellor (2003) adopted this model (Dwyer & Kim, 2003) to evaluate the competitiveness of Australia as a tourism destination.

The World Economic Forum (WEF) uses a competitiveness index to evaluate destination competitiveness at the global level since 2004. The WEF index is derived from a set of 14 pillars categorized into three sub-groups: (a) travel and tourism regulatory framework, (b) travel and tourism business environment and infrastructure, and (c) travel and tourism human, cultural and natural resources. This model is more applicable at the national level than it is at the regional or local levels. Lall (2001) evaluated the WEF index, and eventually detected two major deficiencies. That is, the two underlying assumptions of market efficiency and friendly policy intervention were not met. Also, the model's broad definition of competitiveness diverts from its legitimate focus on direct competition between countries (Lall, 2001, p. 1519).

As the literature illustrates, destination competitiveness is determined and influenced by a large number of factors. The evaluation of a

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