



# Optimal marketing strategy: A decision-making with ANP and TOPSIS

Cheng-Shiung Wu<sup>a,\*</sup>, Chin-Tsai Lin<sup>b,1</sup>, Chuan Lee<sup>c,2</sup>

<sup>a</sup> Department of Hotel and Restaurant Management, Chia-Nan University of Pharmacy and Science, 60, Section 1, Erh-Jen Road, Pao-An, Jen-Te Hsiang, Tainan 717, Taiwan, R.O.C.

<sup>b</sup> Graduate Institute of Business and Management, Yuanpei University, 306 Yuanpei St., Hsin Chu 30015, Taiwan, R.O.C.

<sup>c</sup> Graduate School of Management, Ming Chuan University, 250, Section 5, Chung Shan North Road, Taipei 11103, Taiwan, R.O.C.

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## ABSTRACT

The purpose of the current study is to model the marketing strategy decision-making problem as a multi-criteria decision-making (MCDM) problem and provide a five-step decision support framework to make and carefully assess the marketing strategies. A marketing strategy decision-making framework is essential for marketing strategists to determine the most appropriate marketing strategy in an efficient manner. The contribution of the current study lies in the practical implementation of the integration of the analytic network process (ANP) and technique for order preference by similarity to an ideal solution (TOPSIS), which can be utilized by marketing strategists in a real industry to determine the appropriate marketing strategy. In addition, the results provide guidance to private hotel managers on marketing strategies that can help them to obtain a competitive advantage by evaluating their specific and limited marketing resources. The proposed framework can be easily understood and followed by marketing strategists to determine the appropriate marketing strategy.

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## 1. Introduction

Marketing is a critical function that helps corporations in surviving crises. For the past 20 years, greater emphasis has been placed on the role of marketing considerations in the managerial process, underscoring the important role that marketing plays in contributing to a firm's competitive success (Brooksbank et al., 2003). It is widely accepted that the marketing function should enter the managerial process in the early stages (Wind, 1987). To simultaneously pursue increased revenues and profits, decision makers should select one of the diverse range of marketing strategies. Various strategic choices imply the need for reasonable implementation and control actions in a diverse set of functional units. In addition, utilizing technology to alter the competitive paradigm suggests that combining computerization with marketing activities offers critical advantages (Stone and Good, 2001).

A marketing strategy decision can be classified as a multi-criteria decision-making (MCDM) problem. Marketing strategists should consider a large number of complex factors while evaluating and selecting marketing strategies. MCDM methods are recommended as being helpful in reaching important decisions that cannot be determined in a straightforward manner.

The underlying principle of MCDM is that decisions should be made based on multiple criteria (Cheng et al., 2005). Hence, it is better to employ MCDM methods for solving certain problems effectively.

Given the complexity of the problems associated with a marketing strategy system, it seems difficult to comprehensively manage such a system through the use of a single set of guidelines or one decision model comprehensively. The analytic network process (ANP) is a general theory in the ratio scale that measures influence, based on a methodology that deals with dependence and feedback (Saaty, 1996). Many traditional MCDM methods are based on the independence assumption. However, in many situations, the relationships between individual criteria are not completely independent (Shee et al., 2003). The ANP has been successfully applied in many fields, such as process decisions (Partovi, 2007), total quality management (TQM) (Bayazit and Karpak, 2007), information technology (IT) (Kengpol and Tuominen, 2006), enterprise resource planning (ERP) implementation (Hallikainen et al., (2009)), strategic alliance partner selection (Chen et al., 2008; Büyüközkan et al., 2008), new product development (NPD) (Lee et al., 2008), product mix planning (Chung et al., (2003)), reverse logistics project (Ravi et al., 2008) and so on.

Furthermore, the technique for order preference by similarity to an ideal solution (TOPSIS) developed by Hwang and Yoon (1981) is a distance-based MCDM method that is used for determining alternatives. The TOPSIS is based on positive-ideal and negative-ideal solutions that are determined by the distance of each alternative from the best and the worst performing

\* Corresponding author. Tel.: +886 6 2664911x3600; fax: +886 6 3661599.

E-mail addresses: [wurich@mail.chna.edu.tw](mailto:wurich@mail.chna.edu.tw) (C.-S. Wu), [ctlin@mail.ypu.edu.tw](mailto:ctlin@mail.ypu.edu.tw) (C.-T. Lin), [laeyer@mcu.edu.tw](mailto:laeyer@mcu.edu.tw) (C. Lee).

URL: [http://web.ypu.edu.tw/prince/html/reports\\_01.htm](http://web.ypu.edu.tw/prince/html/reports_01.htm) (C.-T. Lin).

<sup>1</sup> Tel.: +886 3 530 2588.

<sup>2</sup> Tel.: +886 2 2881 2549.

alternatives. The concept of TOPSIS is rational and understandable, and the computation involved is uncomplicated. Moreover, the inherent difficulty of assigning reliable subjective preferences to the criteria is worth noting (Shyur, 2006). In the current study, hence, we utilize a multi-criteria decision-making method to determine the importance weights of evaluation criteria, and TOPSIS method to obtain the performance ratings of the feasible alternatives. Therefore, this approach is employed for four reasons: (i) the logic is rational and comprehensible; (ii) the computation processes are straightforward; (iii) the concept permits the pursuit of best alternatives for each criterion described in a simple mathematical form, and (iv) the importance weights are incorporated into the comparison procedures (Wang and Chang, 2007; Olson, 2004).

The purpose of the current study is to model the marketing strategy decision-making problem as a MCDM problem and provide a five-step decision support framework to carefully assess marketing strategies. Hence, this study utilizes the MCDM method to obtain the relative weight of each criterion – based on the subjective judgments of experts on private hotel management – through the ANP. Given the advantages of the ANP, the current study employs it to offer firm managers and marketing strategists a set of guidelines for designing and implementing competitive marketing strategies through the efficient allocation of resources. In order to rate each marketing strategy, the TOPSIS method was used to rank the marketing strategies in terms of their performances with respect to the marketing resources. Therefore, the five-step model can provide marketing strategists with framework to determine the appropriate marketing strategy more easily.

The remainder of this study is structured as follows. Section 2 presents the marketing strategy evaluation framework and reviews the techniques used in the model. Section 3 presents an empirical illustration of private hotels in Taiwan. Finally, the conclusions and findings of the results of the marketing strategies are presented in Section 4.

## 2. Marketing strategy decision-making framework

In general, MCDM is a powerful decision-making tool that structures the problem clearly and systematically. Few studies have been conducted on determining the criteria for selecting a marketing strategy based on MCDM. As illustrated in Fig. 1, the integration of the ANP and TOPSIS has been used to propose a

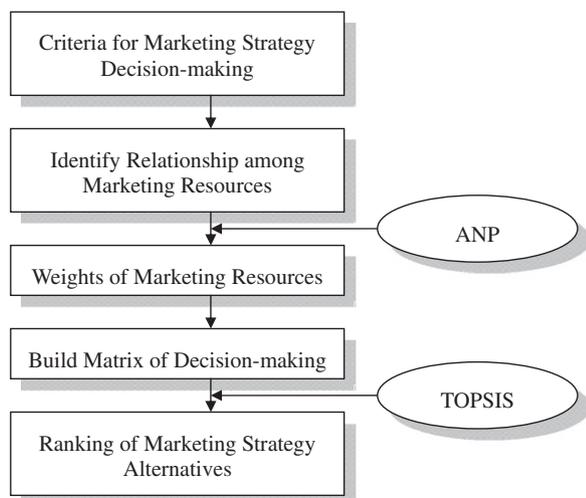


Fig. 1. The marketing strategy decision-making framework.

five-step framework for marketing strategy decision-making. For obtaining the final results, the first step is to identify the determination criteria that are most important for marketing strategists in terms of their marketing strategies. The second step is to construct the interdependence relationship among the marketing resources, and to obtain their criteria weights through the ANP approach. Next, based on the interdependent weights of the marketing resources, the fourth step is to build a decision-making matrix. The final step is to apply the TOPSIS method to achieve the final ranking results. A detailed description of each step is provided in each of the following sub-section.

### 2.1. Determining the criteria and interdependence relationships

Resources, strategy, and performance inter-relationships are central to strategic marketing theory (Hughes and Morgan, 2008). Based on marketing resource combinations as drivers of advantage, the previous studies as Barney (1991) and Campbell-Hunt, 2000 suggest there are approaches for maximizing advantage above a focus on specific marketing resources and capabilities. For superior performance, enterprises cannot depend upon one element merely. Rather, practitioners need to allocate bundles of marketing resource and capabilities that best fit the unique demands placed on them by their marketing strategy. Therefore, the successful conformation of specific marketing resources and capabilities through marketing strategy develops a complexity that is hard to imitate. And, strategic marketing resources and capabilities matching the requirements of the marketing strategy create fit for enabling superior performance. The ideal profiles of marketing resources and capabilities for marketing strategies are posited and the superior performance for enterprises always results from marketing resources and capabilities that are in fit with the marketing strategy.

For marketing strategy alternatives, Porter (1980) introduced a typology of three generic strategies—including overall cost leadership, differentiation, and focus strategies for creating a sustainable position and outperforming competitors in a given industry (Panayides, 2004). With regard to cost strategy, firms might be in a superior position to achieve cost decrement, if they acquire and develop the necessary resources immediately after deciding on a strategy. In the differentiation strategy, the resource-based theory of the firm suggests that similarities in resource requirements among rival companies may increase competition (Barney 1991). In addition, Boyt and Harvey (1997) stated that pursuing differentiation through offering superior customer service would be particularly important, while Grant (1998) pointed out that successful product/service differentiation could be achieved through innovations and improvements across different parts of the value chain. On the basis of Porter's focus strategy, Panayides (2004) investigated the impact of the major beliefs about marketing and suggested that market segmentation is a fundamental precursor to a focused strategy and thus, an important product-market strategy. The benefits of market segmentation could be widespread, ranging from understanding customer needs and delivering customer value to achieving a competitive advantage and improving the organizational performance.

According to Porter (1980), Hooley et al. (1992) developed the generic marketing strategy (GMS), including positive growth strategy with high valuable position, growth strategy with alternative objective position, stable growth strategy with general objective position, stable growth strategy with high quality differentiation, and objective defense strategy with low cost. Nevertheless, Kotler (1998) based on the marketing concept proposed; mass marketing strategy, product-variety marketing strategy and target

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