RECONFIGURING STRATEGY POLICY PORTFOLIOS FOR TAIWAN'S TOURISM INDUSTRY DEVELOPMENT WITH A NOVEL MODEL APPLICATION

by

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ABSTRACT

This study applies the Multiple Criteria Decision-Making (MCDM) which based on decision theories to evaluate the tourism policy of Taiwan. The sets of tourism policy are a composite of various conditions, and must be considered within uncertain and dynamic environments which are difficult to measure. In order to strengthen the comprehensiveness and reasonableness of evaluating process, we used the concepts of fuzzy set theory into the measurement of tourism policy. By integrating the method of Fuzzy Delphi, DEMATEL (Decision-Making Trial and Evaluation Laboratory), and ANP (Analytic Network Process) for evaluating strategic polices for tourism development, we found the most salient concerned aspects of tourism policy are *human resource* and the least is *market development*.

KEYWORDS
Tourism Policy, MCDM, Fuzzy Delphi, DEMATEL, ANP

INTRODUCTION

Following the trend of lifestyle changed and world economic growth, the tourism industry has recognized as one of the most significant resources that influence a country's economic and development (Horng, Liu, Chou, & Tsai, 2012). For the year as a whole, the number of international tourist arrivals is expected to reach one billion for the first time (UNWTO, 2012). Europe and Asia and the Pacific (both +6%) were the fastest-growing regions in 2011. Therefore, how to make the tourism policy that helps the tourism industry development has becoming the critical issue for many countries.

Taiwan which is present a varied, unique and beautiful types of scenery, special geographical environment, favorable weather, and surprising wealth of natural sightseeing resources (Tsai & Chen, 2010). Although the tourism industry has significantly influenced the Taiwan's' economic growth and development of the hospitality sector, the little research has addressed the potential implications of tourism policy for tourism industry development. In addressing the gap within existed literatures, this study aims to answer the following questions:

First, what are the important components of tourism policy?

Second, can these criteria be managed individually or interdependently?

Third, what are the influential weights and ranking among these criteria of policy implication?
The following section discusses the use of hybrid MCDM model and other data and describes the tests procedure.

The next section presents the findings and the results of the study. Conclusions and discussions are presented in the final section of this study.

LITERATURE REVIEW

Human resource

Notwithstanding the tourism market is first and foremost a service industry, dependent on the quality of human resources and their ability to deliver that service (Liu, 2002). Regardless of the level of qualification obtained, a higher quality of human resources will assist those entering the industry to start higher up in the management level. Thus, improving the quality of human resources will help the development of tourism industry (Liu et al., 2012).

Investment environment

Investment is a very important factor in the development of industry. In the tourism sector, investment incentives such as favorable land or financial policies are common in both developed and developing countries to attract investment (Jenkins, 1982; Wanhill, 1986). Wang and Xu (2011) suggested that a rapidly expanding amount of capital is being invested in hotels and scenic spots that target the middle and low-end tourism markets, which has led the tourism market into less government intervention is helpful for non-SOEs (state-owned enterprises). Therefore, investments in tourism that attract foreign tourism investment are, logically, closely tied with overall potential profit levels.

Market development

The purposes marketing strategies are to promote the destination and its various attractions and facilities, access to potential visitors, and general assessment of price strategy to attract visitors (Cox & Wray, 2011). These include needs analysis, research and analysis, creative infusion, strategic positioning, marketing plan development and training, implementation, evaluation, and adjustment (Liu et al., 2012). Therefore, strategic marketing planning is necessary for the tourism industry in intensive and idea-packed approach to marketing tourism destinations.

Industry environment

A major issue within tourism as a mixed industry is whether or not the differences between private, public and not-for-profit tourism organizations are important to overall industry health, and the achievement of tourism policy goals (Andersson & Getz, 2009). The attractiveness of emerging destinations is perceived as determined by a number of factors such as hotel infrastructure, travel budget, security issues, and the demand of group travel. The level of service and technology development at a destination also will determine whether it can attract corporate incentive travelers.

METHODOLOGY

Sampling

For more comprehensive understanding the current situation of tourism industry and collecting diversify perspectives of experts. This study included 40 experts which had highly experience of average above 15 years in participate the tourism policy making, travel and hotel industry management, or famous souvenir store operation. For ensure the quality of research, each experts will receive the research questions and then made reservations to meet. The procedure was intended to make sure the experts had fully understanding the research questions and have plenty of time to fit our requirements.

Fuzzy Delphi method

In order to resolve the tradition Delphi method problems that repeated several times to reach a consensus, Ishikawa et al. (1993) used the accumulated distribution and concepts of fuzzy sets to integrate the opinions of experts into fuzzy number. In the FDM, the average of the triangular fuzzy numbers (X) of the criterion, this was accepted as $X > 0.7$ (Chang et al., 2000). Under the acceptable conditions, the study finally included 4 dimension and 20 criteria in the model see Table 1.

TABLE 1

TABLE 1
THE RESULTS OF FUZZY DELPHI METHOD ANALYSIS

| Dimension | Criteria | Triangular fuzzy number | | | Relative importance (>0.7) |
		Min	Geometiric mean	Max	
Human resource	1. Supply of professional person	0.5	0.90	1.0	Accepted
	2. Human brain cultivation organizations	0.4	0.83	1.0	Accepted
	3. Quality of creative employee	0.5	0.86	1.0	Accepted
	4. New jobs creation	0.3	0.77	1.0	Accepted
	5. Incubator resources	0.4	0.77	1.0	Accepted
Investment environment	6. The scale of tourism industries	0.4	0.80	1.0	Accepted
	7. Incentives for investment	0.5	0.84	1.0	Accepted
	8. Informational infrastructure construction	0.5	0.87	1.0	Accepted
	9. Regional infrastructure construction	0.5	0.86	1.0	Accepted
	10. Regional development outlook	0.3	0.89	1.0	Accepted
Market development	11. Benefit of economies of scale	0.3	0.75	1.0	Accepted
	12. Completion status of tourism industry	0.1	0.72	1.0	Accepted
	13. Reputation of tourism industry	0.4	0.89	1.0	Accepted
	14. Completion of supply chain	0.4	0.80	1.0	Accepted
	15. Quality of outsourcing providers	0.5	0.79	1.0	Accepted
Industry environment	16. Marketing strategic conducting	0.4	0.86	1.0	Accepted
	17. Amendments to relevant laws	0.4	0.83	1.0	Accepted
	18. Law enforcement	0.4	0.80	1.0	Accepted
	19. Enhance competitiveness	0.4	0.87	1.0	Accepted
	20. Innovation	0.6	0.89	1.0	Accepted

DEMATEL technique

The DEMATEL uses matrix and related math theories to calculate the cause and effect on each element. This method is widely used to solve various types of complex studies that can effectively understand complex structures and provide viable options for problem-solved (Lin & Tseng, 2009; Tseng, 2009).

ANP evaluation

The ANP method has widely used in analysis of company or country policy application. For example Tsai et al. (2011) use ANP to development evaluation model for encouraging entrepreneurship policies. Liu et al. (2012) use MCDM as foundation to analysis the natural resource policy and solving complicated relationship structure problems for policy application.
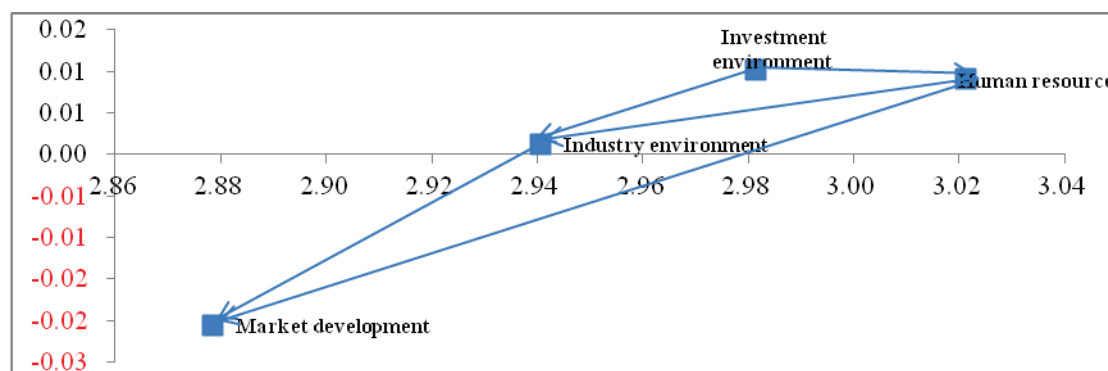
RESULTS

The relationship of criteria

Through DEMATEL step to calculate initial average matrix A, and using a pair of degrees of interaction for any two criteria to calculate the initial direct effect of matrix B and we have derived a number of interactions across on various dimensions T. According to the influential relation (D+R, D-R) and examined criteria (Table 2), the dimension causal diagrams were draw (Figure 1).

TABLE 2
THE RESULTS OF EXAMINED DIMENSIONS

dimensions	1	2	3	4	R	D	R+D	R-D
1. Human resource	0.38	0.38	0.37	0.38	1.52	1.51	3.02	0.01
2. Investment environment	0.38	0.37	0.37	0.37	1.50	1.49	2.98	0.01
3. Market development	0.37	0.36	0.35	0.36	1.43	1.45	2.88	-0.02
4. Industry environment	0.38	0.37	0.36	0.36	1.47	1.47	2.94	0.00

According to the influential relationship approach, it can be argued that the Investment environment (D2) is the top impact relationship that affects other dimensions directly. On the other hand Market development (D3) was the most vulnerable dimension. The dimensions hierarchy is Investment environment (D2), Human resource (D1), and Industry environment (D4). Thus, enlarging the tourism industry's scale, improving the informational and regional infrastructure construction, and providing incentives for investment directly within the tourism industry are becoming the critical issues that provide more opportunities for development of tourism industry.

FIGURE 1
THE INFLUENTIAL RELATIONSHIPS WITHIN THE TOURISM POLICY

Calculating the weights by DANP

The DEMATEL process confirms the relationship within the tourism policy model. DANP is based on DEMATEL results and to compare the criteria in the whole system (Table 3). Accordingly the results of the DANP analysis confirm that the human resources (0.255) were rated as the most important dimension. This was followed by the investment environment (0.251) industry environment (0.250) and Market development (0.244). The results indicated that tourism industry is labor-intensive industry, thus, the average score of human resources are higher than other factors.

TABLE 3
THE RESULTS OF DANP ANALYSIS

Criteria	Global weight	Dimension	Local weight	Ranking	Criteria	Local weights	Ranking
Supply of professional person (c1)	0.054				c1	0.211	1
Human brain cultivation organizations (c2)	0.049				a2	0.193	5
Quality of creative employee (c3)	0.050	Human resource (D1)	0.255	1	a3	0.196	3
New jobs creation (c4)	0.050				a4	0.195	4
Incubator resources (c5)	0.052				a5	0.204	2
The scale of tourism industries (c6)	0.054				b1	0.216	2
Incentives for investment (c7)	0.054				b2	0.215	3
Informational infrastructure construction (c8)	0.045	Investment environment (D2)	0.251	2	b3	0.178	4
Regional infrastructure construction (c9)	0.043				b4	0.172	5
Industry development opportunities (c10)	0.055				b5	0.220	1
Benefit of economies of scale (c11)	0.054				c1	0.220	1
Completion status of tourism industry (c12)	0.051				c2	0.207	2
Reputation of tourism industry (c13)	0.05	Market development (D3)	0.244	4	c3	0.206	3
Completion of supply chain (c14)	0.046				c4	0.188	4
Quality of outsourcing providers (c15)	0.044				c5	0.178	5
Marketing strategic conducting (c16)	0.049				d1	0.197	3
Amendments to relevant laws (c17)	0.045				d2	0.179	5
Law enforcement (c18)	0.046	Industry environment (D4)	0.250	3	d3	0.186	4
Enhance industry competitiveness (c19)	0.057				d4	0.227	1
Innovation (c20)	0.053				d5	0.211	2

In the sub-dimension analysis for Human resources (D1), Supply of professional person with a high performance value of 0.211 and a low value of Human brain cultivation organizations is 0.193. The results also can be shown in the rest of the criteria within the individual dimension as well. Through these analysis results, the policy makers can find the problem-solving points according to this integrated index, either from the importance of main criteria as a whole or from the ranking of sub-dimension analysis.

CONCLUSION AND IMPLICATIONS

This study proposed an integrated model combining the Fuzzy Delphi method DEMATEL method, and the ANP method for evaluating strategic polices for tourism development. The results of analysis demonstrate that the ranking of influence tourism policy making were human resource(D1), investment environment(D2), industry environment(D4) and market development(D3). These results for government and policy makers have been raised and formulated.

The results shown that human resources is the most critical attributes for strategic policy consideration, it implies that human resources is the foundation for service industry, especially in tourism industry development, high quality human resources could help industry to increase productivity and also help industry to maintain the competitive advantages in the world (Porter, 2000). Further, By understanding an overall importance of measuring criteria, the global weight of enhance industry competitiveness is 0.057, this indicates for improve the competitiveness of Taiwan tourism industry, policy makers should guide by a global perspective and understand the critical attributes of market competitiveness is important for the tourism industry to sustain its growth.

This study offers several contributions for tourism industry development. First, this study not only provides a practical tool for evaluating tourism policy from an experts' point of view, but also act as a heuristic decisional guide for integrating limited resources for strategic action considerations. Second, although this paper's focus on tourism policy implications, the proposed model can also be applied and extended to other fields or industries to evaluate the problems with interdependent attributes.

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