Original Research Paper

# Using the Analytic Hierarchy Process to Establish a Tour Guide Selection and Evaluation Model

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Article history Received: 04-09-2015 Revised: 24-09-2015 Accepted: 05-10-2015

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Abstract: This study aims to examine the criteria for the selection of tour guides, in order to help travel agencies in Taiwan selecting suitable tour guides with a more objective and consistent approach. A tour guide is the life and soul of an organized tour, as well as an important key for the success of the tour. Following the acquisition of expert opinions by the Delphi method, the Analytic Hierarchy Process (AHP) is used to allocate the selection criteria of a tour guide into different levels of hierarchy. The selection criteria include personal attributes, professional knowledge, professional skills and customer service attitude. The results suggested that professional skills are more important than customer service attitude, while professional knowledge is more important than personal attributes. The top three criteria for the selection of a tour guide are "possessing a qualified tour guide license", "being able to provide explanations clearly and fluently" and "handling matters sensibly and meticulously", indicating that personal attributes are the priority criteria for the evaluation of a tour guide. The findings can help to shorten the tour guides selection process, as well as assist travel agencies to recruit suitable tour guides in a more objective and consistent manner.

Keywords: Tour Guide, Delphi Method, Analytic Hierarchy Process

## Introduction

The travel and tourism industry has become one of the biggest industries in the world, as well as an important direction for the development of Taiwan's After contemporary economy. the Taiwanese government implemented the two-day weekend policy in 2001, domestic tourism has becoming a popular recreational trend. In addition to promote domestic tourism, the Taiwanese government also strives to promote inbound tourism. Hence, there is a growing demand of tour guides, who are critical to the success of an organized tour. Given the scanty studies on the selection of tour guides, this study aims to construct a tour guide selection and evaluation model with reference to factors that travel agencies should consider when they select tour guides. The findings of this study can provide travel agencies in Taiwan with an objective and consistent standard for the selection of tour guides.

## Research Background

The tourism industry is an industry that provides tourism and travel-related services for domestic and foreign tourists. As the World Tourism Organization (WTO) suggested, the 10 services industries related to the tourism industry include the foreign trade services industry (purchasing, merchandising and leasing), distribution services (retailing of tourism products), construction and engineering services, transportation services, communication services, education services, environmental services, financial services, health and social services, as well as recreation, culture and sport services (Cheng, 2000). In addition to providing the public with more job opportunities, the tourism industry prompts the development of other industries, boosts economies of scale, becomes the principal source of foreign exchange earnings in many countries, conducts the redistribution of incomes and promotes economic development. As such, the importance of the tourism industry is globally-recognized.

At present, the travel and tourism industry is one of the biggest industries in the world. With bountiful natural landscapes, various plant and animal species and diverse arts and cultures in Taiwan, the Taiwanese government has positioned "tourism" as the third approach after diplomacy and international trade to place



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Taiwan on the global platform. The tourism industry is a passport for promoting international exchange, world peace and a diplomatic practice that earns revenue (MOTC, 2012). The tourism industry has become an important direction for the development of Taiwan's contemporary economy. All related promulgated by the Taiwanese government are to make Taiwan an island country with a flourishing industry. As indicated by the data of the tourism Bureau, MOTC, the number of tourists who visit Taiwan has been increasing in the last 10 years and continues to climb each year, indicating the marked results of Taiwan's tourism policies (MOTC, 2014).

Overall, the tourism industry is one of the most highly-valued developing industries in Taiwan at present. The tourism industry calls for a large labor force, as the tourism industry provides services to people. In response to Taiwan's open-door policy to foreign tourists, all travel agencies require local tour guides to provide services for incoming tourists to Taiwan. In addition to passion regarding travel, the most important quality of a tour guide should be having a warm and amicable attitude while providing services. For that reason, the most basic and essential work attitude of a tour guide should be making people feel sincerely cared for and respected.

#### Research Motives

People who lead a group of tourists in Taiwan can be divided into "tour guides", who guide foreign tourists who visit and travel around Taiwan and "tour escorts", who escort Taiwanese tour groups to an overseas destination for travel and tourism purposes. A tour guide who takes care of foreign tourists' travel activities in Taiwan must satisfy tourists' requests in relation to travel destination's natural sceneries. humanistic features and folk customs, as well as provide assistance and arrangements for these foreign tourists' communication, transport, food and accommodation. As such, a tour guide is the life and soul of a guided-tour, as well as an important key for the success of the guided-tour. However, issues in relation to the selection of a tour guide are seldom mentioned in existing literature.

In terms of the selection of tour guides, a tour guide selection and evaluation model is established using the Delphi method and the expert opinions of the Analytic Hierarchy Process (AHP). The systematized and analyzed research results are used to construct travel agencies' criteria for the selection of a tour guide, lists the essential requirements for being a tour guide and provides tour agencies in Taiwan with an objective and consistent set of standards in the selection of a tour guide.

## Research Purpose

Based on the aforesaid research motives, this study constructs a tour guide selection and evaluation model using the Delphi method and analytic hierarchy process. Thus, this study aims to provide travel agencies with an objective and consistent set of standards, which not only helps select suitable and distinguished tour guides, but also provides a reference for the training of tour guides, improves the situation of mingled tour guides of different standards, satisfies foreign tourists' needs and maintains the quality of tour activities.

The research purposes of this study are as follows:

- Use the Delphi method to explore criteria that travel agencies should consider in selecting tour guides from an expert perspective
- Use the analytic hierarchy process to construct a tour guide selection and evaluation model
- Integrate research results to provide suggestions

#### Literature Review

The literature review covers the following five parts: The definition of a tour guide, the categorization of tour guides, studies on employability, the Delphi method and modified Delphi method and the analytic hierarchy process.

## Definition of a Tour Guide

A tour guide is an information delivery person, the source of knowledge, a teacher, a coach, an inductor and an inspirer who enlivens tourists' travel experiences. A tour guide is also a nation's ambassador or emissary, a performer who entertains tourists, a friend, a shepherd (a person who tends herds of sheep), a group leader and a trainer (Holloway, 1981). In ancient Rome, aristocrats who travelled far away from home would recruit men who were physically strong and knowledgeable of the local culture of the travel destination as their chaperoning porters, who not only assisted with carrying baggage, but also took on the duties of a bodyguard. These porters used to be addressed as "couriers", which is the earliest name of tour guides in modern English.

According to Item 12, Article 2, Chapter 1 in the "Act for the Development of Tourism" (MOTC, 2011a) in Taiwan, the definition of a tour guide is "a person who receives remuneration by performing the job of receiving or guiding tourists who visit Taiwan for travel and tourism purposes".

# Categorization of Tour Guides

Tour guides can be classified as full-time tour guides and freelance tour guides (MOTC, 2011a):

- Full-time tour guide: People who are employed in the tourism industry to carry out the job duties of a tour guide on a permanent basis
- Freelance tour guide: People who are temporarily employed in the tourism industry, government bodies, or organizations to carry out the job duties of a tour guide

In addition, according to Article 6 in the "Regulations Governing Tour Guides" (MOTC, 2011b), tour guide licenses can be further classified into the foreign-language-speaking tour guide license and the Mandarinspeaking tour guide license:

- Based on the registered foreign languages of a tour guide's license, a licensed foreign-languagespeaking tour guide can carry out job duties in relation to receiving or guiding foreign tourists speaking the registered languages for tourists from China, Hong Kong and Macau
- A licensed mandarin-speaking tour guide can carry out job duties in relation to receiving or guiding tourists from China, Hong Kong and Macau, but not tourists from other foreign countries

# Studies on Employability

In the 21st century, studies on employability have become more and more extensive and involve more fields. Therefore, many scholars have been exploring how to develop the concept of lifelong learning, designing a reasonable manner to educate and cultivate talent, developing employment policies and training methods to enhance individuals' employability, as well as improving the competitiveness of businesses and nation. Generally speaking, employability includes "abilities that can broadly suit different job demands" and "professional skills that are required by a particular industry or professional job duties".

The earliest research on "abilities" dates back to research conducted by the Department of State in the United States, which primarily aimed to determine a new assessment method to forecast personnel's performance in order to minimize the errors that occurred in traditional intelligence and aptitude testing. Wu (1997) suggested that the feature of abilities is that abilities can be inherited or acquired through education. The effect is the outward behavior of an individual's mental attitudes and physical gestures when the individual successfully carries out a task or solves a problem. As such, an individual's behavior and performance in the cognitive, affective and psychomotor domains can be used as a guideline for abilities assessment. Spencer and Spencer (1993) also proposed that an individual's abilities and attributes include the individual's motives, attributes, self-concept, knowledge and skills.

Adopting the analytic hierarchy process method and using human resources experts as research subjects, Chang (2010) examined the influential factors of employees' employability. The results of Chang's study revealed that the most important aspect of individual employees' employability is basic abilities. Regarding overall relevant employability factors, the abilities of communication, self-expression, teamwork, adaptability, occupational skills and following work rules are the most crucial employability factors. It can be observed from research on employability that scholars advocate the development of employability before a person steps into the job market. Moreover, a person should be equipped with relevant employability in order to quickly adapt to a work environment and become the talent that businesses and employers are seeking.

The Delphi Method and the Modified Delphi Method

# Delphi Method

The Delphi method, which relies on experts' forecasts, is a group decision method. This method's primary objective is to obtain interviewed experts' consensus and seek consistent opinions regarding research subjects. In addition to drawing on collective wisdom and absorbing all useful ideas, this method also attends to the quality of experts' independent judgments. However, when the Delphi method is applied in actual practice, there are frequent situations of divergent expert opinions. Increasing the rounds of a survey is required in order to obtain better results. However, more rounds of a survey means increased costs and time. In addition, as the Delphi method uses mean scores as the basis for sorting criteria for the selection of tour guides, the mean scores may be easily affected by extreme value statistics, which may even result in distorted expert opinions (Su, 2012).

## Modified Delphi Method

The procedures of the Delphi method involve repeated written communication and expression of opinions in order that experts can reach a consensus. However, these procedures are usually modified or shortened for various reasons, such as time, people and money. According to Murry and Hammons (1995), the procedures of the standard Delphi method are modified in some studies for special considerations. In these studies, a questionnaire with open-ended questions for brainstorming is bypassed and a structured questionnaire is developed after reviewing a large body of literature for the making modifications first-round questionnaire survey. The advantage is that it saves time and a structured questionnaire makes participatory experts' attention immediately focus on the research topic, instead of making speculations about a

questionnaire with open-ended questions. The modified method is called the modified Delphi method.

## Analytic Hierarchy Process (AHP)

The Analytic Hierarchy Process (AHP), a theory developed by University of Pittsburgh professor Thomas L. Saaty in 1971, is primarily used in a decision situation of uncertainty and several assessment criteria. After a decision problem is divided using the system and the decision problem is represented in a hierarchy, pairwise comparisons of criteria in the hierarchy are conducted to determine the relative weights of the compared criteria. Options to solve the problem are ranked to provide guidance for the selection of the optimal options (Aljuaid *et al.*, 2010; Alghamdi, 2009; Bovornsethanant and Wongwises, 2010; Chang, 2013; Huang, 2015; Saaty, 1980; 1990).

## **Research Method**

By carrying out documentary analysis, this study anticipates understanding more factors that affect travel agencies' selection of tour guides. By using the modified Delphi method questionnaire, experts could sort and modify all possible influential factors. After two rounds of adjustments and modifications, a hierarchy of criteria for the selection of tour guides is developed. Upon confirmation of the criteria of different aspects in the hierarchy, an analytic hierarchy process expert-questionnaire is designed and experts are invited to fill out a questionnaire. The collected data are further organized, analyzed and given suggestions.

# Research Method

#### Documentary Analysis

This study uses documentary analysis as the research method to understand the factors relating to the criteria for the selection of personnel for service jobs, which can be used as the theoretical basis for analyzing the key factors of tour guide selection and evaluation model.

# Modified Delphi Method

The modified Delphi method is used to establish the assessment criteria. This study begins with the collection of relevant data, literature review and organizing need into a specific goal and constructs a preliminary criteria hierarchy consisting of principal and secondary criteria. Furthermore, the modified Delphi method is used to conduct a few rounds of a questionnaire survey in order to determine experts and scholars' opinions of the preliminary criteria hierarchy for further results analysis. In situations of expert opinion discrepancy, the questionnaire content is modified by following suggestions from the experts and additional rounds of the questionnaire survey are conducted until expert opinions

converge to a consensus and a valid and comprehensive model for the criteria is established. This is the basis of establishing the hierarchies of the item weights of the evaluation model of tour guides and the analyzing the expert questionnaires.

## Analytical Hierarchy Process

Teng and Tzeng (1989a; 1989b) pointed out that the purpose of using the analytical hierarchy process is to systematize complex problems, give simple and clear analysis of each level, determine each option's relative weight and priority through quantitative assessments, provide decision-makers with appropriate options for decision-making and minimize the risk of making wrong decisions.

By integrating the abovementioned, this study begins with organizing and listing criteria for the selection of tour guides, further uses a modified Delphi method questionnaire to collect expert opinions on the criteria, establishes an assessment model, uses an analytical hierarchy process to collect research samples, uses the analytical hierarchy process to analyze each criterion's relative weight and organizes the relative weights of these criteria in order to design a check-list for travel agencies to select tour guides.

#### Research Subjects

# Research Subjects of the Delphi Method

Five people, including two tourism and travel scholars and three management-level personnel in the tourism industry, are selected as research subjects.

# Research Subjects of the Analytical Hierarchy Process

The research subjects of the analytical hierarchy process are primarily teachers who teach relevant courses at universities or colleges in Hsinchu or management-level employees at travel agencies in Hsinchu.

## Research Structure

The research structure consists of deciding on a research topic, designing research purposes, reviewing and analyzing relevant literature, designing research methods, confirming research subjects, handling and analyzing collected data, offering research results and proposing suggestions.

#### Research Tools

## Modified Delphi Method Questionnaire

Adopting the modified Delphi method questionnaire design, this study requests participatory experts to rate the importance of each assessment criterion from 1 to 5. The semi-closed questionnaire is designed with a column for "other" suggestions, where the participatory experts

could give relevant suggestions and or opinions on the modification of criteria in order that improvements can be made by reference to such feedback.

## Analytical Hierarchy Process Questionnaire

The assessment scale consists of "absolutely important", "very important", "important", "slightly important" and "equally important" options. Each criterion is given an ordinal scale value of 1, 3, 5, 7, 9; while ordinal scale values of 2, 4, 6, 8 are given to criteria with an in-between level of importance. Therefore, the design of questionnaire questions should show a clear contrast and the questionnaire content should guide questionnaire respondents to conduct pairwise comparisons of criteria for each aspect of the hierarchy.

#### Research Process

After utilizing the documentary analysis method to explore the definition of a tour guide, categorize relevant literature and draw upon current theories to analyze travel agencies' strategies for choosing a tour guide and related aspects, this study gathers and organizes data to design the involved aspects and question items for the criteria. In order to allow experts from different fields to research a consensus, the modified Delphi method is employed to select criteria. The 5-point Likert scale is adopted for the Delphi method questionnaire. Scholars and experts from academia and the travel agency industry are chosen as research subjects.

After making subjective judgments, some criteria are deleted and some overlooked criteria are added to meet practical needs. The Delphi method questionnaire survey continues for several rounds until experts and scholars reach a consensus and criteria at each aspect of this study's analytical hierarchy process are confirmed.

Finally, an analytical hierarchy process questionnaire is designed based on the hierarchy. After the official questionnaire is distributed, data are collected and organized and pairwise comparisons are performed in order to determine the relative weights of each aspect, as well as the relative weights of the criteria in each aspect. The specific steps and methods can be divided into the following three stages:

- Step 1: After employing document analysis to sort the definitions of terms and categorize relevant literature, this study summarizes employability attributes, which are valued by the current travel agency service industry, collects and organizes relevant data and designs the aspects of employability and criteria in each aspect.
- Step 2: After conducting literature review, the aspects and criteria of each aspect of a preliminary hierarchy are organized to design a Delphi method questionnaire. Two rounds of the

- questionnaire survey are performed until participatory scholars and experts reach a consensus and confirm the aspects, criteria at each aspect of the hierarchy and question items on the questionnaire.
- Step 3: Upon the confirmation of the aspects and criteria of each aspect of the hierarchy, an analytical hierarchy process questionnaire is designed, distributed and collected when completed. The collected questionnaire data are organized and the analytical hierarchy process is adopted to determine the relative weights of the criteria in the hierarchy. Conclusions and suggestions are made based on the results of this study.

## **Results and Discussion**

This study's primary purpose is to determine how travel agencies select tour guides, as well as derive an assessment model using the modified Delphi method and analytical hierarchy process.

Results of the Delphi Method Questionnaire Survey

After two rounds of modified Delphi method questionnaire survey, experts' opinions and suggestions for modifications are followed to reach expert consensus and complete the design of a tour guide selection and evaluation model. The results are as shown in Table 1.

## Results of the Analytical Hierarchy Process

This study centers on a tour guide selection and evaluation model. Pairwise comparisons of criteria in the analytical hierarchy process must satisfy the requirement of developing a ranking from good to poor or from significant to insignificant. However, consistency testing is required as errors may inevitably occur in the actual procedures of the analytical hierarchy process. The results of consistency testing are as shown in Table 2. The relative weights of the criteria in the model, as well as the ranking of the weights of all criteria in the model, are as shown in Table 3:

- The relative weight of each aspect at the hierarchy's first level and ranking of the relative weights of all aspects
- The hierarchy's first level consists of four aspects with C.I. and C.R. values smaller than 0.1, as suggested by Saaty. After pairwise comparisons are performed, the relative weights of the aspects are in a descending order of: Professional skills (0.291), Customer service attitude (0.275), Professional knowledge (0.249), Personal attributes (0.185).
- The relative weights of the criteria of each aspect and ranking of the weights of criteria in the same aspect

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The first level	The second level	The third level				
Goal	Principal criteria	Secondary criteria				
The Tour Guide	Personal Attributes	Processing a recognized tour guide license				
Selection and		Being experienced in leading a tour				
Evaluation		Processing a healthy and strong body				
Model		Having no bad habits such as excessive alcohol use, smoking				
		and chewing betel nuts				
	Professional Knowledge	Being familiar with tourist attractions				
		Being conversant with international etiquettes				
		Possessing basic legal knowledge Possessing basic knowledge of first aid				
		Being knowledgeable of many countries' history and geography				
	Professional Skills	Possessing good skills in guiding a tour				
		Being able to give explanations clearly and fluently				
		Possessing good communication skills				
		Being capable of handling emergencies and crises				
		Speaking many languages				
	Customer Service Attitude	Having a prior understanding of tourists' background				
		Handling matters sensibly and meticulously				
		Being able to satisfy tourists' reasonable requests				
		Being able to handle tourists' problems promptly				
		Being highly passionate and enthusiastic about this job				

Table 2. Results of consistency testing

Goal	Indicator	C.I.	C.R.	Criteria in each aspect	C.I.	C.R.
The tour Guide selection and evaluation model	Personal Attributes	0.068	0.076	Processing a recognized tour guide license Being experienced in leading a tour Processing a healthy and strong body Having no bad habits such as excessive alcohol use, smoking and chewing betel nuts	0.053	0.059
	Professional Knowledge			Being familiar with tourist attractions Being conversant with international etiquettes Possessing basic legal knowledge Possessing basic knowledge of first aid Being knowledgeable of many countries' history and geography	0.037	0.033
	Professional Skills			Possessing good skills in guiding a tour Being able to give explanations clearly and fluently Possessing good communication skills Being capable of handling emergencies and crises Speaking many languages	0.04	0.036
	Customer Service Attitude			Having a prior understanding of tourists' background Handling matters sensibly and meticulously Being able to satisfy tourists' reasonable requests Being able to handle tourists' problems promptly Being highly passionate and enthusiastic about this job	0.079	0.071

#### Personal Attributes

The "personal attributes" aspect consists of four criteria. As shown in Table 3, the relative weights of the criteria are in a descending order of: Processing a recognized tour guide license (0.417), Processing a healthy and strong body (0.227), Being experienced in leading a tour (0.209), Having no bad habits, such as excessive alcohol use, smoking and chewing betel nuts (0.147).

# Professional Knowledge

The "professional knowledge" aspect consists of five criteria. As shown in Table 3, the relative weights of the criteria are in a descending order of: Being familiar with

tourist attractions (0.268), Being conversant with international etiquettes (0.233), Possessing basic knowledge of first aid (0.213), Possessing basic legal knowledge (0.188), Being knowledgeable of many countries' history and geography (0.097).

#### Professional Skills

The "personal skills" aspect consists of five criteria. As shown in Table 3, the relative weights of the criteria are in a descending order of: Being able to give explanations clearly and fluently (0.256), Possessing good skills in guiding a tour (0.223), Being capable of handling emergencies and crises (0.207), Possessing good communication skills (0.185), Speaking many languages (0.130).

Table 3. The relative weights of the criteria in the model and ranking of the weights of all criteria in the model

The relative

		Relative			The relative weight of each criterion in the	The ranking of the weights of criteria in the	The relative weights of the criteria in all	The ranking of the weights of all criteria
Goal	Indicator	Weight	Ranking	Criteria in Each Aspect	same aspect	same aspect	aspects	in the model
The tour	Personal	0.185	4	Processing a recognized tour guide license	0.417	1	0.0770	1
guide	Attributes			Being experienced in leading a tour	0.209	3	0.0386	15
selection and				Processing a healthy and strong body	0.227	2	0.0418	14
Evaluation				Having no bad habits such as excessive alcohol	0.147	4	0.0270	18
Model				use, smoking and chewing betel nuts				
	Professional	0.249	3	Being familiar with tourist attractions	0.268	1	0.0668	4
	Knowledge			Being conversant with international etiquettes	0.233	2	0.0580	9
				Possessing basic legal knowledge	0.188	4	0.0468	13
				Possessing basic knowledge of first aid	0.213	3	0.0529	11
				Being knowledgeable of many countries' history and geography	0.097	5	0.0240	19
	Professional	0.291	1	Possessing good skills in guiding a tour	0.223	2	0.0648	5
	Skills			Being able to give explanations clearly and fluently	0.256	1	0.0744	2
				Possessing good communication skills	0.185	4	0.0537	10
				Being capable of handling emergencies and crises	0.207	3	0.0602	7
				Speaking many languages	0.130	5	0.0377	16
	Customer	0.275	2	Having a prior understanding of tourists' background	0.230	2	0.0633	6
	Service			Handling matters sensibly and meticulously	0.250	1	0.0689	3
	Attitude			Being able to satisfy tourists' reasonable requests	0.216	3	0.0594	8
				Being able to handle tourists' problems promptly	0.180	4	0.0496	12
				Being highly passionate and enthusiastic about this job	0.124	5	0.0341	17

#### Customer Service Attitude

The "customer service attitude" aspect consists of five criteria. As shown in Table 3, the relative weight of the criteria are in a descending order of: Handling matters sensibly and meticulously (0.250), Having a prior understanding of tourists' background (0.230), Being able to satisfy tourists' reasonable requests (0.216), Being able to handle tourists' problems promptly (0.180), Being highly passionate and enthusiastic about this job (0.124).

The Relative Importance of all Criteria in the Model and Ranking of the Weights of all Criteria in the Model

The detailed relative weights of the 19 criteria in the model are as shown in Table 3. The top 10 criteria in a descending order of importance of: Processing a recognized tour guide license (0.0770), Being able to give explanations clearly and fluently (0.0744), Handling matters sensibly and meticulously (0.689), Being familiar with tourist attractions (0.0668), Possessing good skills in guiding a tour (0.0648), Having a prior understanding of tourists' background (0.0633), Being capable of handling emergencies and crises (0.0602), Being able to satisfy tourists' reasonable requests (0.0594), Being conversant with international etiquettes (0.0580), Possessing good communication skills (0.0537).

## **Conclusion**

Based on the research results, conclusions are proposed and suggestions are offered to relevant organizations and travel agencies in Taiwan with reasonable and theoretically-based guidance for the

evaluation and selection of tour guides. The conclusions of this study are as follows:

## The Establishment of Hierarchy

The four aspects at the first-level of the hierarchy are: (1) personal attributes; (2) professional knowledge; (3) professional skills; (4) customer service attitude.

## The Relative Weights of the four Aspects

The relative weights of the four aspects in a descending order are: (1) Personal attributes; (2) professional knowledge; (3) professional skills; (4) customer service attitude.

The most important criteria in each of the four aspects are:

- Personal attributes: Processing a recognized tour guide license (the relative weight of the criterion in the aspect 0.417, the relative weight of the criterion in all aspects 0.0770)
- Professional knowledge: Being familiar with tourist attractions (the relative weight of the criterion in the aspect 0.268, the relative weight of the criterion in all aspects 0.0668)
- Professional skills: Being able to give explanations clearly and fluently (the relative weight of the criterion in the aspect 0.256, the relative weight of the criterion in all aspects 0.0744)
- Customer service attitude: Handling matters sensibly and meticulously (the relative weight of the criterion in the aspect 0.250, the relative weight of the criterion in all aspects 0.0689)

Based on the relative weights of the criteria in the tour guide selection and evaluation model, the top 10 important criteria are:

- Processing a recognized tour guide license
- Being able to give explanations clearly and fluently
- Handling matters sensibly and meticulously
- Being familiar with tourist attractions
- Possessing good skills in guiding a tour
- Having a prior understanding of tourists' background
- Being capable of handling emergencies and crises
- Being able to satisfy tourists' reasonable requests
- Being conversant with international etiquettes
- Possessing good communication skills

# Acknowledgement

This study was developed and planned by Prof. Han-Chen Huang, Prof. Su-Ling Wu and Prof. I-Ying Chang and accomplished with the assistance of Pei-Ling Liu. Under the advices of Prof. Han-Chen Huang and Prof. Su-Ling Wu, Pei-Ling Liu probed into this research topic and tries to obtain the master's degree.

#### **Author's Contributions**

This study is the result of the full and equal collaboration of all the authors.

#### **Ethics**

The authors have no conflicts of interest in the development and publication of the research.

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