

A Superior Choice Making System for Optimal Journey Agency

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Abstract: - This paper presents a decision choice making system method for travelers to find the best journal agency. First of all, the factors those were concerned by the travelers in evaluating the journey agency were submitted through the literature review. These factors are classified into three units. These three units are the price unit, the tour product characteristics unit and the journey agency image unit. Each unit owns its sub-factors. Subsequently, the minimum norm approach is used to the classify the optimal fit level between the travelers and the selected journal agency. The findings of this paper appear the understandings of decision key elements those influence consumers 'purchasing lead to the understanding of consumers' characteristics. Furthermore, the simulation test results appear the adoption of appropriate promotion method in keeping or expanding consumers group become the further key issues for journey agencies.

Key words: Decision choice making system method, journal agency, consumers, simulation, minimum norm

1 Introduction

1.1 Research Background

Journal is one of the outdoor leisure activities. Journal may release personal life pressure and increase personal general knowledge. Journey also creates positive effects for society environment in social life and entertainment [1]. The sightseeing tour must meet three conditions: affordable journey expenses, spare time and willing to travel [2].

1.2 Research Motivation

Facing the wide needs of journey market, the industry of journey appears a bright future. After Taiwan becomes a member of World Trade Organization (W.T.O.), all the international companies with huge capital and high efficiency enter the competing market. Under this circumstance, the journey agency must upgrade the consumer service mode. The journey agency strives to provide customized service and customized schedule service type toward travelers' requirements. This service type creates the specific competition advantage for the company. Today, the concept of the company operation is oriented by the consumers.

1.3 Research Purpose

The journey market becomes more and more competitive. The journey agency faces expanding

needs in the journey market. Many new journey agencies are opened day by day. In order to be focused in the competitive market, the understanding of consumers' needs and consumers' selection standard is very important. In this research, the evaluating factors those travelers concern are submitted.

Therefore, we have to clearly realize the factors those consumers pay great attention. This change would provide high quality journey product and travel service for the consumers.

1.4 Paper Organization

In Section 2, we present the Literature Review. In Section 3, we list the Research Methodology. And the Practical Research results is listed in Section 4. Finally, we make a brief conclusion in Section 5.

2 Literature Review

In this session, we introduce the discussion issues toward decision support system and the evaluating factors of the excellence travel agency. The discussion items are the characteristics of travel industry, the definition of travel products, the consumers' behavior and major elements influencing consumers' behavior.

2.1 The characteristics of travel industry

The travel industry provide the public about the travel information and convenient service. Owing the profession knowledge, travel experience and worldwide travel information, the main affairs of the travel industry is to provide its travel assistance and travel service to the travel consumers.

2.2 The definition of travel product

The travel product owns the following three parts [3], as shown in Fig.1.

In Fig.1, it appears that the product purchased by the traveler is not a single product, not a bed in the hotel, not a seat in the airplane cabinet, not a sightseeing tour with the guide, not a natural scene, but a whole image of one experiencing process.

In other ways, the travel product is linked stage by stage. The whole parts of the travel product include the meals quality, the living quality, the tour guide's experience and service, the willing to serve of the employees and their attitude, the safety of the tour program and the commitment to the consumers.

The introduction of these three parts are introduced below:

2.2.1 The core product

The core product means one time experience. That is the basic effect or the major effect and benefit which is provided by the seller and is seeking by the buyer.

2.2.2 The formal product

The formal product is also called the tangible product.

The formal product represents the entity and service which were bought by the consumers, such as the characteristics, style, weight and reputation.

2.2.3 The augmented product

The augmented product means these factors which can be added to the travel product. Such as the bonus conditio or the promotion method.

2.3 The Consumers Behavior

The consumers behavior means the decision process and activities those are used in collecting, selecting, purchasing and using the travel products. The consumers' selecting behavior is the most important stage within the consumers' decision process. The consumers' purchasing behavior means the final purchasing behavior of the consumers. We can realize the consumers from the 'Stimulus-response Mode'. The behavior and environment may stimulus consumers' mind and decision process, their selecting behavior might be affected in the following.

2.4 The major elements influencing consumers' behavior

The elements those influence consumers' behavior are classified into four types:

2.4.1 The Culture Element

The culture element appears a deep and wide influence on the consumers. There is a discussion from consumers' culture, sub-culture and social levels.

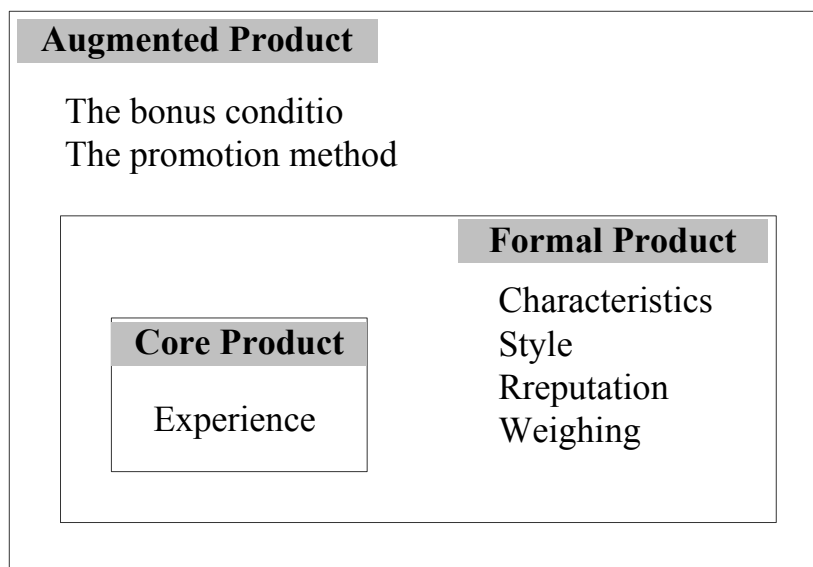


Fig.1 The Three Parts of Travel Product

2.4.2 The Society Element

The social element means the influence that is created from those people who are surrounded the consumer. The social element includes the reference group, the opinion leader, family, role and the position.

2.4.3 The Personal Element

The consumer's selecting behavior is influenced by personal elements. It includes consumer's age, life cycle stage, career, economic status, life mode, personal characteristics and self-concept.

2.4.4 The Psychology Element

The psychology element includes motivation, consciousness, learning, belief and attitude.

3 Methodologies

In this section, we submit the research process, statistics mode and questionnaire design.

3.1 Research Process

The Research Process is listed in Fig. 2

3.2 Statistical Model

We submit the efficient algorithm to solve the following problem: the decision elements in selecting excellent journey agency is (J_k), the decision choice making system in Evaluating Journey Agency is b^i . The Decision Support System Model is stated below:

$$\min_{b^i} d_{Jb^i}^E = \left[\sum_{k=1}^K (J_k - b_k^i)^2 \right]^{1/2} \quad i = 1, \dots, I.$$

in which,

- I □ Represents the total numbers of the Decision choice making system model elements in Evaluating Journey Agency.
- J_k □ Represents the Item k 's SD (Standard Deviation) Value of the assigned Decision choice making system model (J) elements in Evaluating Travel Agency.
- b^i □ Represents the Item i of the Decision choice making system model elements in Evaluating Travel Agency.

b_k^i □ Represents the Item k 's SD (Standard Deviation) Value of the assigned travel agency candidate $\#i$ in evaluating elements (b^i).

$d_{Jb^i}^E$ □ Represent the Minimum Distance between the Decision choice making system model in Evaluating Travel Agency Elements (J) and the journey agency candidate $\#i$ in evaluating elements (b^i).

3.3 Questionnaire Design

In this Section, we introduce the Questionnaire Implementation Process and the evaluating elements of excellent journey agency.

3.3.1 The Questionnaire Implementation Process

In our research, the Questionnaire Implementation Process is as following:

- | | |
|--------|--|
| Step 1 | Implement the Questionnaire:
The 'Weighing Elements' of the excellent journey agency decision evaluation. |
| Step 2 | Implement the 'Weighing Elements' of the decision evaluation toward 'the 1 st candidate of journey agency'. |
| Step 3 | Implement the 'Weighing Elements' of the decision evaluation toward 'the 2 nd candidate of journey agency'. |
| Step 4 | Implement the 'Weighing Evaluations' of the decision evaluation elements toward 'the 3 rd candidate of journey agency'. |
| Step 5 | Establish the summary table of the 'Weighing Elements' of the decision evaluation toward journey agency. |
| Step 6 | Establish the summary table of the 'Weighing Distance' Between each candidate of journey agency and the weighing elements toward the decision evaluations of the journey agency. |
| Step 7 | Create the graph of a decision support system model in evaluating the journey agency based under the sub-optimal selections of journey agency candidates. |
| Step 8 | Create the graph of a decision support system model in evaluating the journey agency based under the optimal selection of journey agency candidates. |
| Step 9 | Evaluate the results and make the final decision |

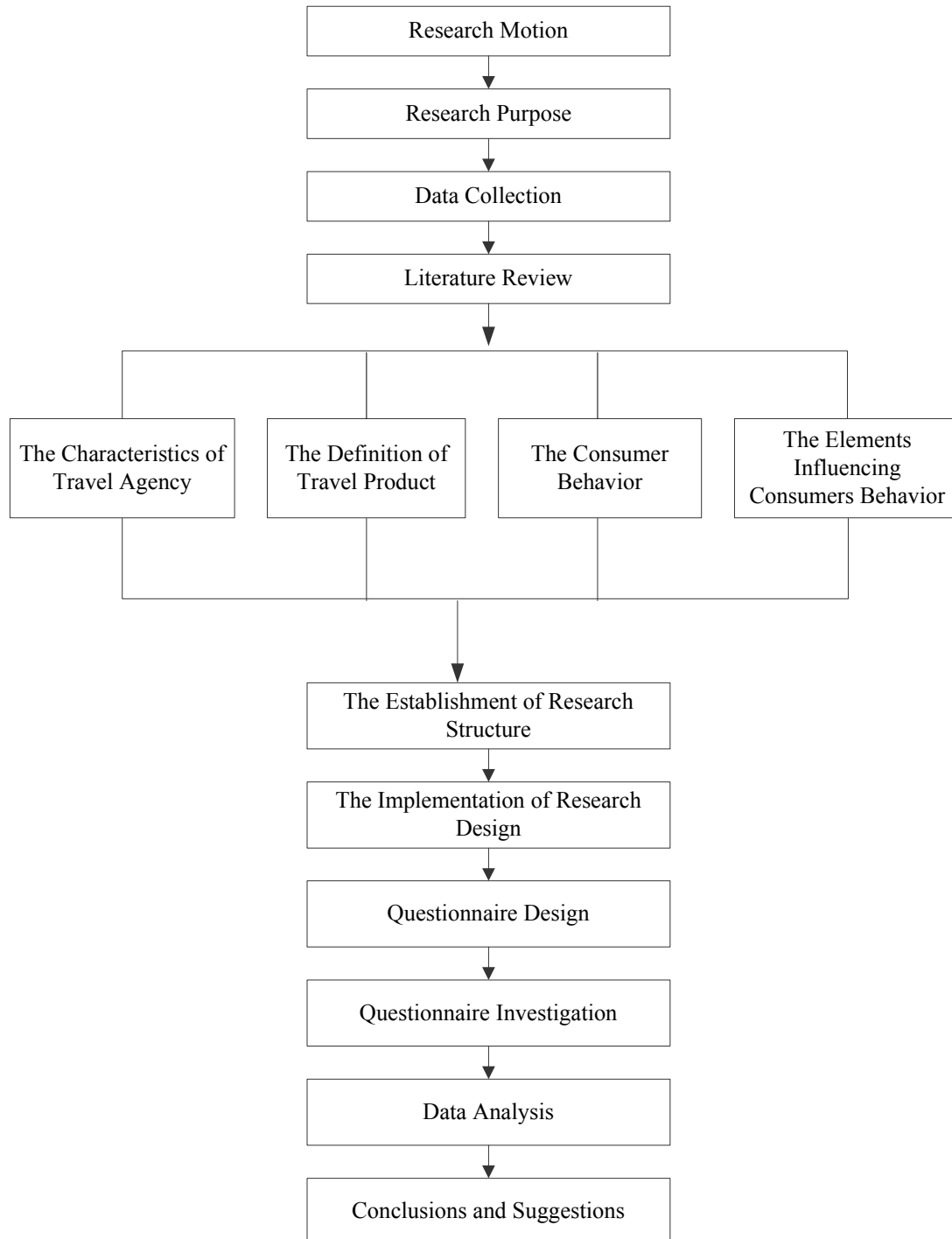


Fig. 2 Research Structure

3.3.2 The Questionnaire Design

The purpose of the questionnaire design is to collect the required information from the interviewers. The first thing is to point out and outline the required information, then the proposed interviewers' list. After a series of internal researches, many famous journey agencies' owners, business managers and scholar experts are interviewed. The results of these interviewees summarized three phases: the price phase, the tour product characteristics and the journey agency image. Each phase owns its sub-elements. As shown in Table 1.

Table 1 The Journey choosing design Factor Items

PHASES		DECISION FACTOR ITEMS
I	the price	Tour fee
		Free gift
		Group discount or family discount
		Early registration discount
		Tour discription meeting
II	the tour product characteristics	Meal quality
		Hotel quality
		Transportation quality
		Sigtseeing views
		Schedule arrangement
III	the journey agency image	The journey agency's reputation
		The visiting city's reputation
		The tour guide's experience

4 Practical Analysis

In this research, we use a Decision Support System Model in Evaluating Journey Agency. We collected interviewers' data through the questionnaire method. Then, we made a series of data operation and analysis. The result of 'weighing evaluations' toward the decision sub-elements of selecting excellent journey agency is listed in table 2. The evaluation result of the 1st candidate of the journey agency—'Set Tour Agency' toward the decision sub-elements is listed in table 3. The evaluation result of the 2nd candidate of the journey agency—'Lion Tour Agency' toward the decision sub-elements is listed in table 4. The evaluation result of the 3rd candidate of the journey agency—'Young Tour Agency' toward the decision sub-elements is listed in table 5. The Fig.3 shows the 'decision sub-elements analysis' of selecting excellent journey agency.

5 Conclusions & Suggestions

In this paper, we proposed a Decision Support System Model in Evaluating Journey Agency. The research conclusion and research suggestions are introduced in the following:

5.1 Research Conclusions

In this paper, we made a research analysis toward the consumers who takes participate in the journey agency tour program. We realize those consumers who are willing to take participate in the tour program may gather lots of selecting factors toward journey agencies.

The findings appear that consumers pay high attention on the following elements while they are selecting journey agencies: tour fee, meal quality and journey agency reputation. Following are the minor elements, they are: the safety of tour program, the commitment between the consumer and the journey agency (The commitment indicates the tour date, tour program, hotels, and etc.) and the journey agreements and insurance between the consumer and the journey agency. Based on the group analysis, the consumer's selecting behavior classifies the market into three segments: 'service promise type', 'priority on tour program type' and 'overall priority type'.

The regression analysis is used in understanding the loyalty influences relationships between the consumer behavior and overall satisfaction degree. The overall satisfaction degree, tour program elements and service environment elements reflect the influence toward loyalty. Among these, the overall satisfaction degree and service environment elements appear positive influence. The loyalty is high influenced by the overall satisfaction degree. The higher the consumer satisfaction degree, the higher the loyalty is!

Table 2. The result of ‘weighing evaluations’ toward the decision sub-elements of selecting excellent journey agency

The ‘weighing evaluations’ toward the decision sub-elements of selecting excellent travel agency (Range 1~7)																															
Decision sub-elements																															
1.1 Tour fee	7	6	7	7	6	5	7	7	7	6	7	6	7	5	7	4	7	6	6	6	6	7	7	7	6	7	5	6	7	6	6.3
1.2 Free gift	4	3	5	5	5	4	4	3	5	4	5	5	2	4	5	4	3	3	2	2	3	3	4	4	5	6	4	3	3	4	3.9
1.3 Group discount or family discount	3	6	3	3	3	4	3	3	4	3	3	6	4	3	4	6	4	4	5	4	3	3	5	3	3	2	4	3	4	4	3.7
1.4 Early registration discount	6	7	3	5	2	5	4	2	5	4	4	6	7	5	3	4	3	7	1	5	7	5	4	5	4	4	7	4	4	3	4.5
1.5 Tour discription meeting	6	7	7	6	6	7	7	6	6	7	6	6	7	7	7	6	6	6	7	6	6	7	7	6	6	6	7	7	7	7	6.5
2.1 Meal quality	6	6	7	6	5	6	6	6	5	5	6	6	5	5	6	4	5	5	4	3	4	5	6	6	5	5	6	6	4	5	5.3
2.2 Hotel quality	6	6	6	6	6	5	7	6	7	6	5	6	6	5	7	7	6	6	6	6	6	7	6	6	7	7	7	6	7	7	6.2
2.3 Transportation quality	5	6	4	5	5	4	6	3	4	5	4	4	5	4	4	4	5	6	3	4	5	5	4	5	4	4	3	5	5	4	4.5
2.4 Sigtseeing views	6	6	6	6	7	7	7	6	7	7	6	7	6	6	7	7	7	7	6	6	7	7	7	7	6	7	7	7	7	7	6.6
2.5 Schedule arrangement	6	6	7	6	6	6	7	7	7	7	7	7	7	7	7	7	6	6	7	6	7	7	7	7	7	7	7	7	7	7	6.7
3.1 The travel agency’s reputation	5	6	7	7	5	6	5	7	7	6	5	5	6	6	7	7	5	4	5	3	5	4	3	5	5	6	7	6	5	5	5.5
3.2 The visiting city’s reputation	5	5	4	4	3	5	4	5	5	6	5	4	6	3	5	4	5	5	4	4	5	3	5	6	5	5	4	4	3	5	4.5
3.3 The tour guide’s experience	6	5	6	6	5	5	6	6	5	5	4	5	4	3	4	5	5	5	6	3	5	5	5	4	4	5	3	3	4	2	4.6

Table 3. The evaluation result of the 1st candidate of the journey agency—‘Set Tour Agency’ toward the decision sub-elements

The evaluation result of the 1 st candidate of the travel agency—‘Set Tour Agency’ toward the decision sub-elements (Range 1~7)																																
Set Tour Agency	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Ave- rage	
1.1 Tour fee	6	6	6	6	6	6	6	6	6	5	5	5	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	6	5	5.4
1.2 Free gift	4	4	3	4	4	3	3	3	4	3	3	3	2	3	2	4	3	3	3	4	3	3	4	3	4	2	2	4	3	2	3.2	
1.3 Group discount or family discount	6	6	7	7	5	5	5	5	5	7	4	7	5	4	4	4	4	7	7	7	4	6	6	4	6	4	6	4	4	4	5.3	
1.4 Early registration discount	6	6	6	6	6	6	4	4	6	6	5	5	4	5	5	5	5	5	4	4	5	4	5	5	3	7	3	5	7	5	5.1	
1.5 Tour discription meeting	6	6	6	6	6	5	5	5	5	6	4	5	5	6	6	5	7	4	5	5	6	6	4	6	4	5	4	3	5	3	5.1	
2.1 Meal quality	6	5	5	5	7	5	5	5	6	5	5	4	6	5	4	5	6	5	6	6	4	7	7	4	5	4	5	4	5	4	5.2	
2.2 Hotel quality	7	6	6	6	6	5	6	6	4	5	6	5	5	4	5	6	5	6	4	7	5	5	6	5	6	3	3	5	3	5	5.2	
2.3 Transportation quality	6	6	7	6	6	5	5	5	6	6	5	6	7	5	6	5	4	5	5	6	6	6	5	6	4	6	4	6	4	6	5.5	
2.4 Sigtseeing views	6	6	6	5	5	6	5	5	5	7	6	5	4	6	5	5	5	4	6	5	5	5	4	5	3	5	5	4	6	4	5.1	
2.5 Schedule arrangement	6	5	5	5	5	5	5	6	5	5	5	7	5	7	6	5	5	5	5	4	4	4	5	4	5	4	6	6	4	3	5.0	
3.1 The travel agency’s reputation	6	4	4	6	6	6	5	6	4	6	6	3	3	3	3	3	5	5	5	3	5	3	6	4	3	6	3	5	3	3	4.4	
3.2 The visiting city’s reputation	5	4	4	5	4	4	3	5	5	4	4	3	5	4	4	4	5	3	3	4	5	4	3	4	4	3	2	5	2	5	4.0	
3.3 The tour guide’s experience	6	5	7	4	5	2	6	3	5	4	1	7	5	1	3	4	2	6	6	7	4	4	5	4	3	1	4	4	4	3	4.2	

Table 4. The evaluation result of the 2nd candidate of the journey agency—‘Lion Tour Agency’ toward the decision sub-elements

The evaluation result of the 2 nd candidate of the travel agency—‘Lion Tour Agency’ toward the decision sub-elements (Range 1~7)																															
Lion Tour Agency	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	Ave- rage
1.1 Tour fee	6	6	7	5	6	6	6	7	5	6	6	6	7	7	5	6	5	6	6	7	6	7	6	6	5	5	6	6	7	6	6.0
1.2 Free gift	4	3	4	3	2	3	3	2	3	4	3	3	2	1	3	2	4	3	3	2	2	4	3	4	3	4	4	3	4	4	3.1
1.3 Group discount or family discount	6	4	4	6	6	6	5	6	4	6	6	3	3	3	3	3	5	5	5	3	5	3	6	4	3	6	3	5	3	3	4.4
1.4 Early registration discount	5	3	6	6	5	6	3	6	6	4	6	4	4	4	5	4	3	3	3	4	3	2	3	3	2	3	4	3	4	4	4.0
1.5 Tour discription meeting	6	5	5	5	6	5	4	3	4	5	6	5	5	5	4	5	4	2	2	3	2	3	2	4	3	4	5	2	5	5	4.1
2.1 Meal quality	5	5	3	4	4	4	5	3	5	3	4	3	3	3	3	3	5	3	3	2	3	4	4	3	4	5	3	3	6	6	3.8
2.2 Hotel quality	4	6	4	3	4	3	6	5	4	5	5	4	4	4	5	4	3	4	4	3	4	5	4	5	5	6	2	4	5	5	4.3
2.3 Transportation quality	5	5	5	4	5	4	3	6	5	5	5	5	3	5	4	5	2	3	5	4	5	3	5	5	4	4	3	5	3	4	4.3
2.4 Sigtseeing views	4	5	6	5	6	5	3	4	3	6	4	3	4	3	3	3	3	4	3	4	4	4	6	6	3	3	4	3	3	3	4.0
2.5 Schedule arrangement	5	5	4	4	3	4	5	6	4	4	3	5	4	4	5	3	4	5	2	5	3	4	5	4	6	4	5	4	5	4	4.3
3.1 The travel agency’s reputation	6	5	4	4	4	3	4	3	4	4	5	3	5	4	4	4	6	6	5	5	5	4	3	4	5	3	4	3	4	4	4.2
3.2 The visiting city’s reputation	4	4	5	5	3	4	3	3	5	5	3	3	4	4	4	4	5	5	3	4	5	4	4	4	4	3	2	5	2	5	3.9
3.3 The tour guide’s experience	5	5	3	4	3	4	5	3	5	6	3	6	4	2	3	4	4	3	5	5	4	2	4	4	6	5	5	4	4	3	4.1

Table 5. The evaluation result of the 3rd candidate of the journey agency—‘Young Tour Agency’ toward the decision sub-elements

The evaluation result of the 3 rd candidate of the travel agency—‘Young Tour Agency’ toward the decision sub-elements (Range 1~7)																																
Young Tour Agency	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	Ave- rage	
1.1 Tour fee	4	5	4	5	5	5	5	5	4	4	4	4	4	4	5	4	4	5	5	6	5	4	5	5	5	5	4	4	4	4	4.5	
1.2 Free gift	2	2	4	3	5	1	5	4	3	3	4	3	3	4	3	2	1	3	4	3	3	4	4	3	4	3	3	1	2	3	3.1	
1.3 Group discount or family discount	3	6	3	3	3	4	3	3	4	3	3	6	4	3	4	6	4	4	5	4	3	3	5	3	3	2	4	3	4	4	3.7	
1.4 Early registration discount	2	3	5	4	4	5	4	4	3	4	2	5	3	4	3	5	3	4	4	3	3	4	3	3	4	3	3	4	3	5	3.6	
1.5 Tour discription meeting	4	4	4	5	5	5	5	4	4	5	3	4	3	5	3	4	4	5	3	4	4	5	4	4	5	4	4	2	3	3	4.0	
2.1 Meal quality	4	5	6	6	4	4	4	4	5	3	4	3	5	4	4	4	5	5	5	5	5	3	5	5	6	3	2	3	2	4	4.2	
2.2 Hotel quality	5	3	4	5	3	3	3	3	4	4	5	4	4	3	5	5	6	6	5	3	4	3	4	4	4	4	3	4	3	5	4.0	
2.3 Transportation quality	5	4	5	3	5	5	4	4	3	2	4	5	3	4	6	6	5	4	3	3	3	3	3	3	3	3	5	4	3	4	3.9	
2.4 Sigtseeing views	4	5	6	5	6	4	5	5	4	3	3	4	5	5	4	7	4	5	5	4	4	3	2	2	2	4	5	2	5	3	4.2	
2.5 Schedule arrangement	6	5	4	4	4	3	4	3	4	4	5	3	5	4	4	4	6	6	5	5	5	4	3	4	5	3	4	3	4	4	4.2	
3.1 The travel agency’s reputation	6	5	7	4	5	2	6	3	5	4	1	7	5	1	3	4	2	6	6	7	4	4	5	4	3	1	4	4	4	3	4.2	
3.2 The visiting city’s reputation	5	4	4	5	4	4	3	5	5	4	4	3	5	4	4	4	5	3	3	4	5	4	3	4	4	3	2	5	2	5	4.0	
3.3 The tour guide’s experience	4	5	4	4	3	5	4	4	3	5	2	2	3	6	6	5	5	5	5	4	3	5	4	4	3	3	5	6	5	4	3	4.1

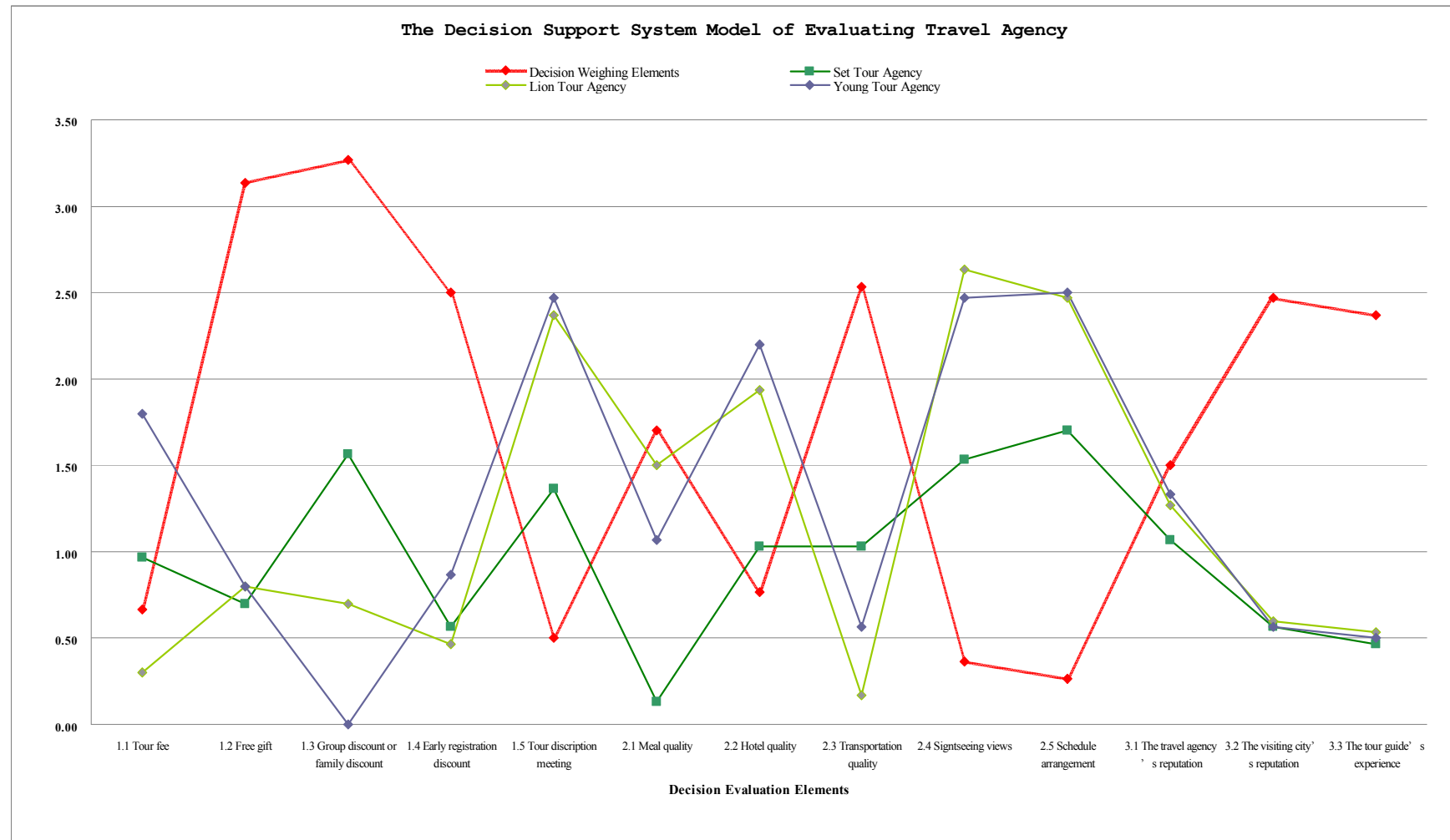


Fig.3 The 'decision sub-elements analysis' of selecting excellent journey agency

5.2 Research Suggestions

Today, there is a wide need in the journey market. The journey industry represents a bright future. In the mean time while Taiwan attends the W.T.O., many companies with huge capital or high efficiency attend the competitive market.

Under this circumstance, the journey agencies must upgrade their service mode. The new service mode must be oriented by the customer requirements. The journey agency must provide consumers the customized service and schedule service those may develop the specific competitive advantages for the journey agency.

Today, those who focus on consumers' operation concept, together with the understandings of consumers' preference elements will provide high quality journey products and service. According to the purpose of this research and practical statistics analysis, the research conclusions submit the following suggestions view points for the journey agencies:

5.2.1 Personal Tour Program

Two points are presented in this program:

i. Strengthen journey agency's service equipments and decorate service environment.

Those journey ers who belong to the leisure tour group concentrate on the journey agency's 'tangible' service quality elements.

The citizen journey programs focus on the leisure purpose. Therefore, the journey agency should first upgrade service equipments and decorate service environment those would leave a good image to the consumers.

ii. Provide suitable journey service for travelers with different journey motivation. The journey agency should encourage its employees aggressively understanding travelers' special requirements and assisting travelers in solving travelers' problems.

The various motivations examples are introduced in the following: Those travelers with 'shopping' motivation, the journey agency should arrange the shopping routes for those travelers.

Those travelers who plan to arrange a 'honey moon', the journey agency should arrange the suitable sightseeing points for the new couples. The new couples also deserve the special service, such as: the

limozine service, the flowers preparation, and etc. Those travelers with 'visiting relatives in foreign countries' motivation belong to the 'purpose orientation' group. In order to successfully achieve travelers' visiting purpose, the travel agency should strengthen its employees professional knowledge. The professional image establishments also help in arousing the traveler's re-consumption.

Those travelers with 'studying tour' in the foreign countries, the journey agency also has to upgrade its service quality levels under the considerations of cost and reasonable profit.

5.2.2 Group Tour Program

There are two view points on group tour programs:

i. Special designs on group tour program should be considered. Two examples are listed below:

Example 1: While the journey agency is designing the 'business tour', the price discount, the coverage of tour information and the tour promotion method should included.

Example 2: While the journey agency is designing the 'employee's tour', the service convenience should be emphasized.

ii. Strengthen employees' professional ability and the appropriate operation ability of the journey agency. While the journey agency takes the case of group tour, the following key items should be focused: employees' good service attitude, employees' actively caring attitude and the employees' problem solving ability.

Following, the journey agency's financial structure, the complete of organization structure, the control of operation expenses and increasing the well-known reputation of the journey agency should be emphasized, too.

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