

## CHAPTER 3

### Research Methodology

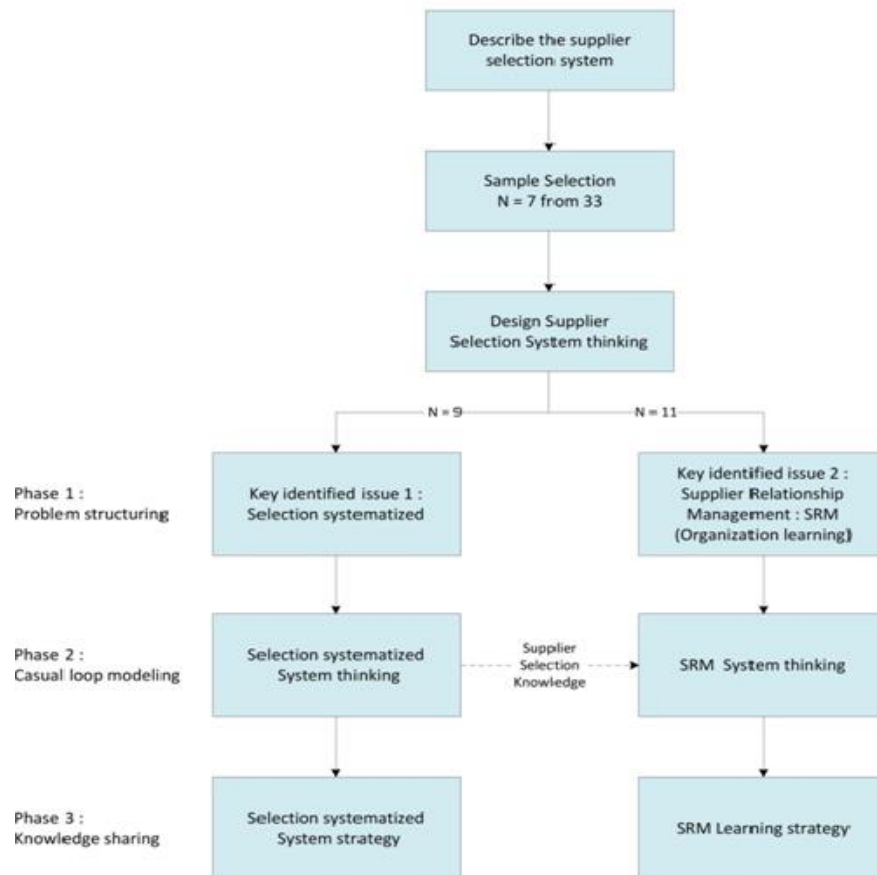
This chapter presents the construction of methodology of the research. The research proposes the concept of “Soft Operation Research”. Soft Operation Research means that “Systems Thinking” in supplier selection process. In order to accomplish research objective, systems thinking are designed to enhance the research practical consequence which aimed to respond to a specific OTAs’ supplier selection problem. As discussed in Chapter2, all principle, theory and literature review have significant knowledge to this research. There are 5 knowledge domains that are related to solve this particular problem. The results of this research are supposed to be a solution concept of OTAs’ supplier selection.

A good suppliers selection process will cause the long-term profit success to OTAs. It was originally found that in Chiang Mai Province, OTAs has a process of refining suppliers but still lack of formal management system. Knowledge results from such the process will be in terms of an experience, an exclusive expertise. They are not provided in a document form, therefore, a researcher design a research method that can feed knowledge entrepreneurs on OTAs and be able to convey them in the form of a simulation model to describe a workflow system, resources to work, calculate the performance of a business, the costs arising from the process of refining suppliers and other important factors that help understand the business environment. It also presents a supplier selection process in the form of systems thinking that can explain the process of refining or also called as business parameter of each process which will be presented in Chapter 4.

#### 3.1 Research framework

As can be seen in Figure3.1, there are some common elements to research projects which can be used to shape the whole activity. Refer to research problem, this

research focuses on the supplier selection of OTAs in Chiang Mai. The supplier selection can be described in 2 major parts; 1) Management system and supplier selection process and 2) Systems thinking. Finally, the optimum answer is the supplier selection model for OTAs business which can be deployed generally to tourism sector.



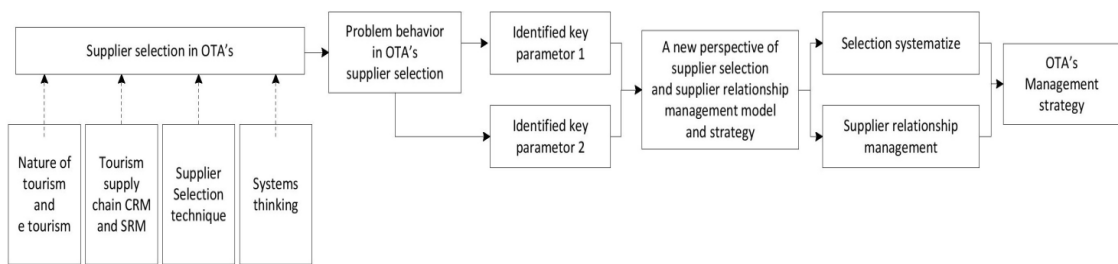
**Figure 3.1** Research framework

### 3.2 Conceptual framework

A conceptual framework was used as a guideline in this research by codifying all the concepts in this research, which consists of variables and relationship identification of the variables. It also includes a basic theory framework related to the problems and the concepts in each subject. This research has conceptual frameworks as the following:

1. The main problem of this research, which is OTAs lack of a new perspective of supplier sourcing strategy
2. The concepts and theories that support this research problem, which are nature of tourism and eTourism, tourism supply chain, supplier selection technique and systems thinking.
3. How the variables used to study relate themselves in this research, which are parameters from supplier selection and supplier relationship management.
4. The research designs to use to find answers or solve the problem, which is a new perspective of supplier selection and supplier relationship management model and strategy

From analyzing the said elements and codifying into a conceptual framework by trying to present in a concrete form, a chart that shows relations between the variables as an illustration, especially, is obtained.



**Figure 3.2** Conceptual framework

### 3.3 Research design

Research design means to define the structure or layout of the research activities must be made. Start setting hypotheses, variables, definitions, and the data analysis. Also, determine the various guidelines and provide information that answers the problem based on objectives that have been defined properly

#### 3.3.1 Research model

This research is comprises of an Exploratory research and a Casual research. The reason to use both researches is to complete a response to the problem of research. Both research details are as follows:

a) Exploratory research

Exploratory research focuses on understanding the issues of selected suppliers and makes the problem more clearer. Framing the study and develop to a research hypothesis, a researcher studied an overview of business operation models and OTAs with suppliers.

Research method:

- 1) Analysis of secondary data: the literature search to know the basics of tourism industry, including work of other business and supplier of OTAs.
- 2) Experience survey by gathering information from experts that appear in Table 3.1.
- 3) Qualitative research with One-on – One in- depth interview to ask in-depth by face-to-face.

b) Casual research

This research is to find relationships between variables by which variable of the supplier selection can affect the long-term profitability of the OTAs and Service quality. These relationships are displayed in the form of Systems thinking. To notice the phenomenon of supplier selection, to know what is an independent variable, and which variable is a result of the independent variable.

Researcher did a field experiment by studying an actual situation of business in the tourism industry

**Research method:**

- 1) Analysis of selected case by selecting a sample population and education area in Chiang Mai Province.
- 2) Observation by observing operation of a business to get real information from a sample group.

### **3.3.2 Population and Sample Data**

Data are collected from OTAs in Chiang Mai which sell hotel rooms, plane tickets, and car rentals and the criteria for selecting the sample are based on the following key components

- 1) OTAs established at least five years since 2009.
- 2) OTAs' financial condition had consistency growth at least 5% of net profit margin, considering on financial statement from 2009-present
- 3) OTAs are registered with Bureau of Tourism Business and Guide Registration, Department of Tourism. They also qualified "Good standard" from Bureau of Tourism Business and Guide Registration.
- 4) OTAs should be BSP – IATA agent (International Air Transport Association: IATA)

BSP or Bank Settlement Plan is a scheme proposed to assist the flow of data and funds between online and traditional travel agencies and airlines. The advantage of such an intermediary organization is that instead of each travel agency having an individual affiliation with each airline, all of the information are combined through the BSP. Contacting and doing transaction through IATA is quick and convenient. However, OTAs still prefer to contact with the airlines themselves. IATA allows OTA that is BSP-IATA agent to sell airline tickets by themselves. After they sold and sent the ticket fee to IATA, IATA will send money to the IATA airline member. The sample OTAs must meet IATA requirement as follows;

- 1) Received an accreditation from EC (European Community) airlines at least 3 airlines from the following list; British Airways, Cathay Pacific, Malaysian Airline, Garuda Airlines, Singapore Airlines, Thai International Airlines, United Airline.
- 2) Having IATA Bank guarantee at least 2 million Baht per year.
- 3) Selling airline ticket at least 2 million Baht per year.
- 4) At least 2 of 5 OTAs' employees have passed the IATA training certification
- 5) Reporting balance sheet to IATA every year
- 6) Having article of association for establishing company.
- 7) Registered 7% value added tax

From the criteria above, there are 7 OTAs which have passed the condition

### 3.3.3 Tools and techniques

This research uses the combination of three basic approaches to conduct qualitative interviewing: (1) The informal conversational interview, (2) The general interview guide approach (commonly called guided interview) and (3) The standardized open-ended interview (Patton ,1987)

The survey instrument utilized in the current study is in-depth interview with open-ended answer by using semi-structure interview question (see Appendix 1). Qualitative interviews with a small number of experts (mainly OTA entrepreneurs) helped obtain more in-depth information and clarify points of debate. Furthermore, the question format and wording focused on business transaction between OTAs and tourism suppliers. Modifications were made based on comments collected during the pre-test.

For the method to simulate the supplier relationship process, a researcher used a tool for replicating the situation by mathematical formulas written on Microsoft excel. For the method of supplier selection process, Design supplier selection systems thinking has been applied systems thinking archetype in a various forms to be a tool in research.

This research used inferential statistics, which is a technique used to analyze information from sample groups that are parts of information from some groups or some parts of populations and then use the summaries to forecast or refer to the characteristics of the populations of the whole groups. This research has a sample group of representatives of the populations, which are 7 OTAs that have similar businesses and pass the qualifications. Moreover, the sample group has given answers about supplier selection in 11 parameters and supplier relationship management in 10 parameters. These methods use operational definition processes which give definitions to the significant words that this research was aiming for. The meanings of these 21 parameters came from studying related documents and researches, including the definitions that the researcher gained from interviews and selected keywords that were often mentioned and used in the works of OTAs.

The Parameter estimation technique was used to estimate these 21 parameters by using the statistics from the sample group to estimate or forecast parameters of the populations by using standard mean deviation.

Finding mean as an intermediary value and a representative of the information is the best method because it gives 1) stable values, 2) impartial values, and 3) the most effective values that can be used to present the information of the smaller sample group that has 7 OTAs.

Standard deviation is a common statistic dispersion measure used to compare different values in a set of data to see how this data spreads out. If most data is close to the average point, the deviation will be low. On the other hand, if each data is far from the average point, the deviation will be high. And when the data is all equal, the deviation will be zero, which means there is no dispersion.

This research used ANOVA to create a reliability test for the parameters. If the result is equal to 1.0, this sample group is then appropriate because of in management strategy plan setting, the sample group tends to have the same opinion in a consensus way, which reflects the systems thinking and the other strategic plans show how these OTAs work and become truly successful.

### **3.4 Research methods**

From the research framework, which provides research method can be described as follows:

#### **Step1 : Describe the supplier selection system**

The objective of step1 is to analyze the current tourism industry in Chiang Mai from the perspective of OTAs supplier selection under supplier relationship management . The relevant system are described and a hypothesis generated for how the system is creating the troubling behavior.

#### **Method;**

A two-stage data collection design will be utilized. The first stage of the study will examine basic information from the available primary data(Websites, annual reports) to enhance validity.

The second stage of the study will collect relevant data or information by conducting in-depth interviews with online travel agencies and using evaluation to measure the weight of each parameter by using Likert's scale from 1-5, the least to the most, respectively. This process also achieve the essential information and knowledge to understand business transaction and relationship between OTAs and their suppliers.

All data will be analyzed by relating to the supplier selection of OTAs as the first priority. The other information is taken to analysis with the purpose of having more clarified in supplier selection issues. As a result, step 1 is presented in Chapter 4, the results of this step consist of:

- 1) Online Travel Agency Evolution
- 2) Business Model of OTAs
- 3) Online Travel Agency Business Process
- 4) Supplier Relationship Management
- 5) Supplier Selection
- 6) Negotiation
- 7) Contract management
- 8) Supplier Development
- 9) Supplier Termination

**Tools;**

1. Documentary studies; combining a solid grounding information from theoretical texts from academic publishers and international journals.
2. Internet information collecting; gathered by searching data, report and related tourism topic that are in accordance to this first research step.
3. In-depth interviews or unstructured interviewing; employing to extract information and knowledge in order to achieve a holistic understanding of the OTAs' opinion or circumstances.

**Step2: Design supplier selection systems thinking**

**Method;**

Step 2 is intended to describe a conceptual framework for problem-solving .Problem-solving in this way involves pattern finding to enhance understanding of, and responsiveness to, the OTAs supplier selection problem. The content of this step will be displayed in the Chapter 4, which consists of:

1. Value of theory to Online Travel Agency



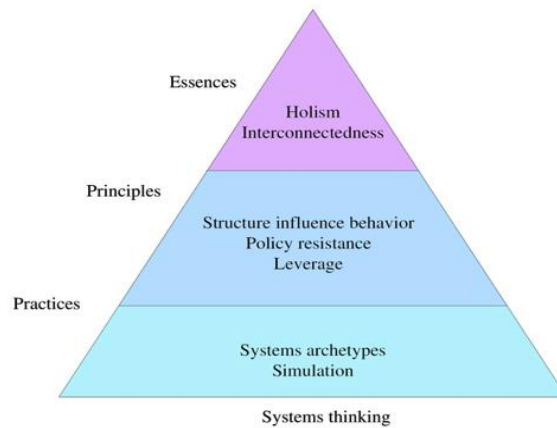
2. General problem behavior
3. System thinking core discipline
  - 3.1 Practice level
    - Problem structuring
  - 3.2 Principle level
    - Supplier selection systematize
    - Supplier relationship management
  - 3.3 Essence level
    - Supplier selection strategy
    - Supplier relationship strategy

**Tools;**

This step still use documentary research, internet information collecting and in-depth interview to gather OTA supplier selection knowledge. Alongside, using the core discipline as tools to descript OTAs supplier selection holistic view. Moreover, the basic concept of systems thinking such as problem behavior , diagram , loop, are gathered to illustrate supplier selection systems thinking.

**1. Systems thinking core discipline**

This study analyzed the value of Online Travel Agency theories to predict future outcomes from applying systems thinking to research problems and studied general problem behaviors of selecting suppliers and creating relationships with suppliers by interviewing OTAs to find basic information to define significant keys to create systems archetypes of Practice and Principle that will become a strategy plan in Essence level in the future. The details include:



**Figure 3.3** Systems thinking core discipline

Practice: the creation of systems archetypes in this study by identifying the keys from the interviews and evaluation form to measure the weight of each parameter by using Likert's scale from 1-5, the least to the most, respectively, along with studying general problem behaviors. The result will become 2 groups of systems archetypes, which are selection systematization, which in knowledge of OTAs and Supplier Relationship Management, which is a learning process of an organization.

Principle: using both identified key issues to create a casual loop model by separating into Selection Systematized and SRM systems thinking. In this phase, The Parameter estimation technique was used to estimate these 21 parameters by using the statistics from the sample group to estimate or forecast parameters of the populations by using standard mean deviation. Furthermore ,using ANOVA to create a reliability test for the parameters. If the result is equal to 1.0, this sample group is then appropriate because of in management strategy plan setting, the sample group tends to have the same opinion in a consensus way.

Essence: using interconnectedness in systems thinking in the Principle step to create two aspects of strategies, which are Selection Systematized and SRM learning strategies.

## 2. Causal loop diagram

Casual loop diagram is a useful way to represent dynamic interrelationships. It also provides a visual representation with which to communicate that understanding.

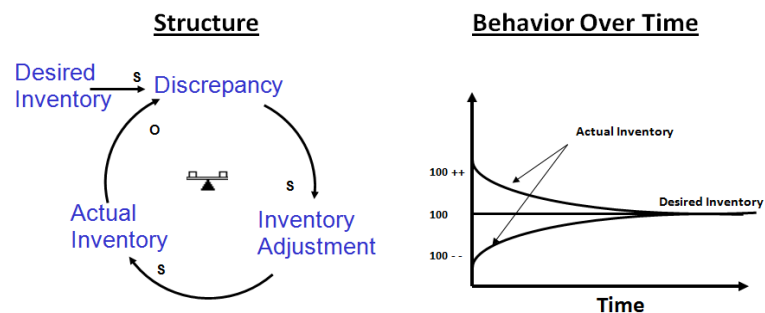
In addition, making explicit OTAs' understanding of a system structure - Capture the mental model

Components of Causal Loop Diagrams;

- 1) Variables - an element in a situation which may act or be acted upon
- 2) Links / Arrows - show the relationship and the direction of influence between variables

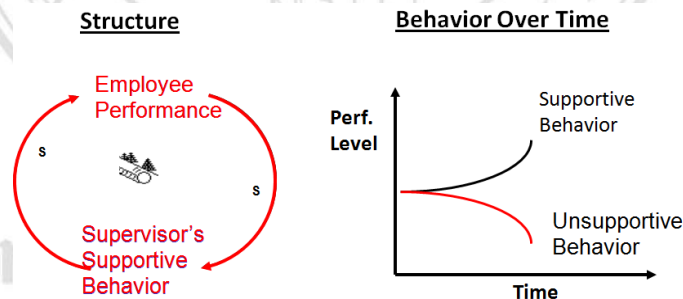
Type of casual loop diagram

- 1) Balancing feedback loop that seeks equilibrium



**Figure 3.4** Balancing loop's structure and its behavior over time

- 2) Reinforcing feedback loop that amplifies change



**Figure 3.5** Reinforcing loop's structure and its behavior over time

### 3. Systems archetype

Systems archetype is a class of tools that captures the "common stories" in systems thinking. These tools for diagnosing problems and identifying high leverage interventions that creates fundamental change. In this research uses 4 types of archetypes as Fixes that backfire, Limit to growth, Accidental adversaries and Drifting goals

#### **Step4: Verified with OTAs**

##### **Method;**

This process is intended to verify the validity of data and results obtained from research with OTAs. The repeated recycling from OTAs Steps 1 through 4 will be verified with OTAs.

##### **Tools;**

Checking or verifying from various sources or OTAs points of view by using in-depth interview.

#### **Step5: Validate with expert**

##### **Method;**

This process is intended to verify the validity of data and results obtained from research experts in tourism industry, i.e., an expert from the education sector and the business sector. The repeated recycling will be validated with expert in this field.

- 1) Validate the methods used to collect the data by examining the data-collection methods.
- 2) Validate the consistency of the data sources by examining them at different points in time, along with the settings they evolved from. Compare the differing viewpoints of people interviewed and survey participants.
- 3) Use different experts to analyze the data to review the findings. This will also minimize any potential bias findings later on.

##### **Tools;**

Develop a final theoretical understanding of the research, based upon all of the aforementioned methods cross validation strategies by interviewing and deploying analytical induction.

### **3.5 Data Collection Plan**

This research has filed plans dividing into 4 times to cover all research steps as Table 3.1.

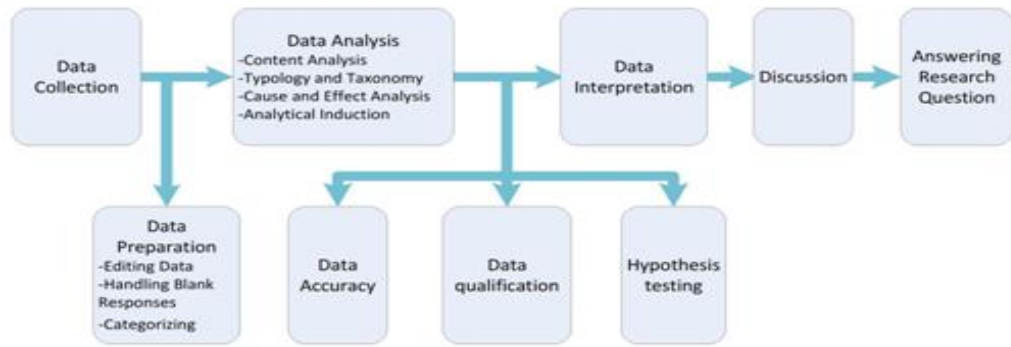
**Table 3.1** Data collection plan

<i>Data collection phase</i>	<i>Step of research method</i>	<i>Related data</i>	<i>Techniques and Tools in acquiring data</i>	<i>Techniques and Tools in data analysis</i>	<i>Results</i>	<i>Duration</i>
1		-Literature review	-Document research	-Content analysis	-Research direction	6 month (April-September,2012)
2	Step1 - 3	-Relevant information and knowledge in supplier selection -Supplier Relationship Management (SRM)	-Document research - Purposive sampling -In-depth interviews - Analyze OTAs and supplier knowledge	-Content analysis - Typology and taxonomy	- Business process - Business simulation	6 month October,2012- March,2013)
3	Step 4	-Problem behavior and Business parameter in OTAs' supplier selection	-Document research -In-depth interviews -Evaluation form -Knowledge management and Systems thinking	-Content analysis -Cause and effect analysis Systems thinking	- The system view of OTAs - Systems archetype - The Supplier selection and supplier relationship knowledge	8 month (April- November,2013)
4	Step 5	-Monitor index , strategy and indicator step1-4 result	-Interviews to validate and verify research result	-Analytical Induction	- Supplier selection model	7month (December,2013- June,2014)

### 3.6 Data analysis

This research results from the interview process to qualitative information, which is data-oriented content, i.e., text, subtitle, nature of business process and supplier selection method. Such information must be analyzed by a method called a qualitative data analysis. According to the viewpoint of Dey 1993, a main point of qualitative analysis is the process to explain its phenomenon, the classification, and how the concept of researcher is related. For Cratree and Miler 1999, the analysis is the process which are affiliated with three steps, to organize a linking system and find evidence to confirm that the results are credible. A researcher provided an information prior to analysis by editing data, handling blank responses and categorizing. Analyzing data is the purpose to test the accuracy of data and to test hypothesis research that “The supplier selection model provide a holistic view of business rule for OTAs supplier selection”. This research used qualitative data analysis method which is appropriate to a research, there are four ways:

1. Content Analysis is to bring an information from a document research and textbooks related to the research, including the annual report of the research sample, to analyze and focus on the explanation of the phenomenon that related to the research problem.
2. Typology and Taxonomy is a data classification and categorize as steps, such as a research method in Step 1-3 will have categorized information and displayed the results as a topic as presented in Chapter 4.
3. Cause and Effect Analysis is a data analysis that result is from a cause. By analyzing the result back to search a cause that comes from or what factors or to analyze a cause to a result, such as to proceed following a research method in Step 4 will have analyzed data and presented in the form of Systems thinking in Chapter
4. Analytical Induction is to bring data from incurred event to analyze and find its conclusions which summarize the correctness of information together with OTAs and experts from tourism industry, which shows the results of this method in Chapter 4 and Chapter 5.



**Figure 3.6** Step of data analysis.

### 3.7 Non-disclosure agreement

Non disclosure agreement is an agreement between researcher and OTAs that outlines confidential material, knowledge or information that the parties wish to share with researcher, but wish to restrict access to or by third parties, especially the other OTA business. This research will not use OTA real name, photographs or any documents that have company brands or signatures or authoritarians revealed since such relevant of photographs and brands will allow their competitor to access and could result in possibilities of losing their business benefits. Researcher agrees to use the confidential information solely in connection with the current relationship between the OTA and not for any purpose other than academic purpose which is authorized by OTA.