

**THE DESTINATION MANAGEMENT IN TOURISM
AND TOURISM COMPETITIVENESS IN THAILAND**

Doctoral thesis

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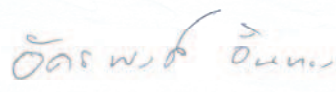
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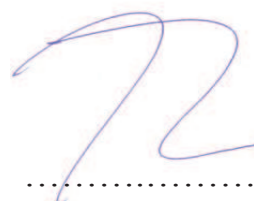
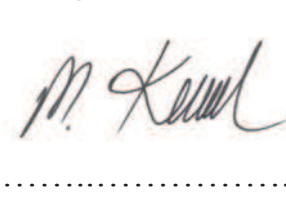
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THE DESTINATION MANAGEMENT IN TOURISM AND TOURISM COMPETITIVENESS IN THAILAND

Resumen

Con cerca de 16 millones de turistas en el año 2010, Tailandia ocupa un puesto privilegiado entre los destinos turísticos del Sudeste Asiático. De hecho, su desarrollo turístico desde principios de los 60 ha constituido un ejemplo a seguir para los países de la región. Sin embargo, en la última década ha visto como su cuota de mercado turístico iba reduciéndose progresivamente. Entre los cambios que explican esta tendencia negativa, destaca la mayor incidencia de eventos extremos negativos, y el incremento notable de la competencia internacional debido a la aparición de nuevos destinos.

En este contexto general de incertidumbre y pérdida de posición competitiva es necesario que Tailandia adopte medidas de política turística eficaces para recuperar su nivel de competitividad. La presente tesis doctoral, utiliza un amplio abanico de metodologías de la economía del turismo, para tratar de dar una respuesta a dicha cuestión. Este objetivo general se subdivide en cuatro trabajos de investigación enmarcados en una visión amplia de la competitividad turística.

El segundo capítulo de la tesis mide la ventaja comparativa y la especialización turística de Tailandia comparada con los otros países de la región. Dicho análisis pone de manifiesto la pérdida de ventaja competitiva durante la última década. Asimismo, se aplica el análisis shift-share para mejorar la comprensión de la relación entre cada uno de los países de destino con las diferentes regiones de origen.

La baja elasticidad precio de demanda estimada a través de OLS dinámico en el siguiente capítulo, evidencia el escaso margen de maniobra existente para la implementación de políticas de precios. Asimismo, se analizan los efectos de los valores de la elasticidad precio cruzada y de la elasticidad renta.

El cuarto capítulo presenta un modelo conceptual que analiza toda la experiencia turística, y la relación entre imagen, valor percibido, satisfacción y lealtad con el destino. La estimación de dicho modelo con ecuaciones estructurales prueba que la amabilidad de su población es el elemento diferencial de su imagen turística. Por tanto ese elemento debe ser tratado con especial cuidado. En este capítulo destaca asimismo la singularidad de la base de datos creada para dicha investigación, ya que recoge los cambios en las variables mencionadas a lo largo de las crisis políticas sufridas por Tailandia entre final del año 2008 y principio del 2009.

Finalmente, desde un enfoque de oferta, se presentan los avances en data envelopment analysis para la medición de los cambios en la eficiencia de gestión en comparación con los cambios en la tecnología de gestión en el sector hotelero de Chiang Mai, uno de los principales destinos del país. Dicho estudio permite concluir que la inversión en tecnología ha sido insuficiente. A falta de más estudios que prueben la aplicabilidad general, dicho resultado parece indicar la importancia de incentivar la inversión privada en tecnología de gestión, al menos en el sector de alojamiento.

Palabras clave: Tailandia, turismo, competitividad, modelización de la demanda, imagen, DEA, eficiencia de gestión

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Chapter 1

Introduction

1.1 Motivation

As the title specifies, this thesis attempts to make a contribution to the understanding of the tourism industry in Thailand, using tourism economics as the knowledge framework for the research. Economics is a social science as it tries to understand the way in which agents interact among themselves in the production and consumption relations. However, a more relevant social aspect of economics is derived from its capacity to provide an understanding of such interactions, and based on that body of knowledge, design policies which should be able to increase social welfare.

The interest in the geographical area selected for the study is justified because Thailand has a long history as a tourism destination. This development has gone hand in hand with the public authorities' awareness of the potential of this industry as an engine of economic development. In fact, awareness of tourism relevance dates back to the early stages of development, as it is proved by the creation of the Tourist Organization of Thailand (TOT) in 1960, when less than 90,000 tourists visited the country. A detailed description of the evolution of Thai tourism will be presented latter in this chapter, however, it can be said that the combination of comparative advantages (tourists endowments) and competitive advantages (planning and management) has helped to position Thailand as one of the touristic leaders in the Southeast Asian region.

However, as change is one of the characteristics of the tourism industry, having being successful in the previous decades is by no means a justification to reduce the focus on the industry, but a reason to improve the understanding of the phenomena. Among the trends which are shaping the industry in recent years, the ones that are mainly affecting Thai tourism are:

1. An increase in the number of negative shocks, and of the international awareness of such events.
2. A general increase in international tourism competition, as more countries try to benefit take advantage from the potential beneficial effects derived from tourism activity.

Given the importance of the tourism industry in Thailand, and the increase in competition, the motivation for this research is the necessity to design the appropriate policies that would help to maintain tourism as a leading sector for Thai economy. And the strong belief, that such necessity would only be achieved based on a sound knowledge base. Hence, the main objective of this thesis is to answer “Which are the strategic policies that would help to increase Thailand’s tourism competitiveness in the next decade?”

A global approach to the analysis of tourism destination competitiveness has been adopted for such general objective. This general approach in particularized into four pieces of research that cover different areas of overall competitiveness:

1. Examination of tourism competitiveness as an exporting activity.
2. Aggregate demand modeling, focusing particularly on elasticities, in order to understand the effects of national policies and of international changes.
3. Individual demand tourist experience, destination image and its relation with tourism shocks.
4. Supply analysis. With particular focus on the management dynamics and the change in technology and efficiency in the production of tourism goods.

The rest of the introductory chapter will try to guide the reader into the general context of this research. Next section presents a description of the

evolution of Thai tourism in the last 50 years. Section 1.3 describes the general tourism trends which are likely to influence the tourism industry in the future, and its potential effects in Thailand. Finally, the last section will present the content of the remaining chapters.

1.2 Thailand's Tourism Development

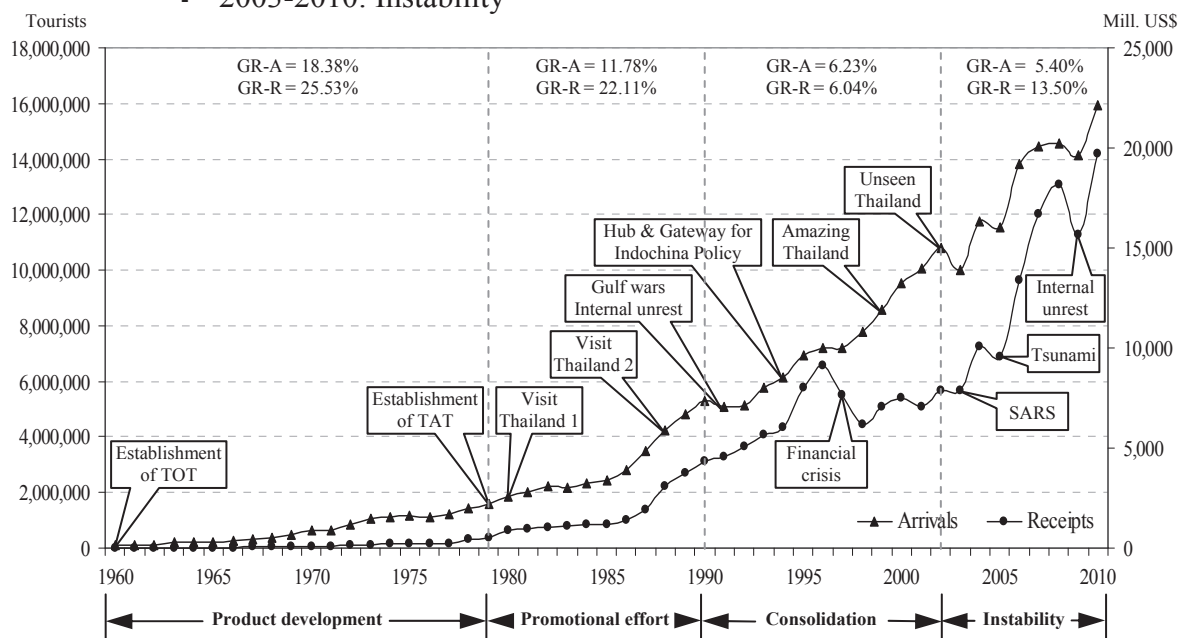
Thailand was the first Southeast Asian country (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam) that decided to use tourism as a strategic sector for economic development. In this sense, tourism planning and promotion policies have been implemented continuously for more than half a century. Back in 1960, the Tourist Organization of Thailand (TOT) was established as the first public institution with tourism responsibility, it changed its name to the Tourism Authority of Thailand (TAT) in 1979. More recently, in 2002, there was a division of responsibilities as the Ministry of Tourism and Sports (MOTS) was established with the objectives of supporting and developing tourism, sports and recreation industries, as well as supervising Thailand's tourism development policies. While TAT remains responsible for marketing and public relations.

Since the early tourism development stages, Thailand has benefit from rich tourism resources including both, environmental and cultural attractions, as well as the welcoming Thai social atmosphere, probably Thailand's most differentiating characteristic. These endowments have been complemented with a continuous investment in facilities and amenities for tourists such as connected airports and local transports, high quality accommodations, nightlife entertainment, etc.

The positive initial conditions combined with the public support to the tourism industry have contributed to the remarkable growth of Thailand's tourism in the last half century. In this period, the number of inbound arrivals and receipts have increased from 81,340 tourists and US\$9.8 million (foreign exchange rate = 21.18 Baht/US\$) in 1960 to 15.9 million tourists and US\$19.7 billion (foreign exchange rate = 31.73 Baht/US\$) in 2010.

Two related sources of information from 1960 until 2010 are presented in order to describe the evolution of Thai tourism. Figure 1.1 presents the yearly tourism arrivals and receipts (in US dollars), and Table 1.1 presents the growth and size of the tourism sector in Thailand. Considering tourist variables growth rate, major tourism policies, and relevant shocks these fifty years of Thailand's tourism evolution can be divided into 4 sub-periods consistent with Phayakvichien (2007) study:

- 1960-1979: Product development
- 1980-1990: Promotional effort
- 1991-2002: Consolidation
- 2003-2010: Instability



Notes: GR-A and GR-R are annual average growth in arrivals and receipts respectively.

Sources: Tourism Authority of Thailand and Thai Ministry of Tourism and Sports.

Figure 1.1 Inbound Tourist Arrivals and Receipts of Thailand, 1960-2010

Both sources show that the growth rates of inbound tourist arrivals declined from 18.38% in the first period (1960-1979) to 5.40% in the last seven years (2003-2010); while receipts growth rate fell from 25.53% to 13.50%. In order to understand the evolution of receipts it should be emphasized that the receipts are in U.S. Dollars, and in 1997 Thailand suffered a severe devaluation of its

currency. That change explains both, the increase in arrivals in the subsequent period and the sharp fall in tourism receipts in 1997. In fact, until 2004 tourism receipts in U.S. Dollars did not surpass the value achieved in 1996.

Table 1.1 Growth and Size of the Tourism Sector in Thailand Economy (%)

| Item | 1960-1979 | 1980-1990 | 1991-2002 | 2003-2010 |
|---|-----------|-----------|-----------|-----------|
| 1. Annual average growth of inbound tourists ^{1/} | 18.38 | 11.78 | 6.23 | 5.40 |
| 2. Annual average growth of tourism receipts ^{1/} | 25.53 | 22.11 | 6.04 | 13.50 |
| 3. Average share of tourism receipts in GDP ^{2/} | 1.11 | 3.57 | 4.88 | 5.82 |
| 4. Average share of tourism receipts in total exports ^{2/} | 7.76 | 16.45 | 12.53 | 9.60 |

Sources: ^{1/}Tourism Authority of Thailand and Thai Ministry of Tourism and Sports.

^{2/} Calculated from the International Monetary Fund data.

Regarding the importance of the tourism industry for Thai economy, the third row of Table 1.1 shows that the average share of tourism receipts in GDP increased continuously from 1.11% during the initial period to 5.82% during the last period. The average share of tourism receipts in total exports, presented in row four, increased from 7.76% in the first period to 16.45% during 1980-1990, but falls afterwards until accounting for 9.6 % during the last period.

A more detailed analysis of each of the periods is presented in the following paragraphs.

1960-1979: Product development period

The first period of the development of Thailand's tourism covers from the early 1960 until 1979. Before TAT was established in 1979 as an agency specialized in the tourism promotion of Thailand, the promotional effort was distributed in domestic offices (such as Chiang Mai, Songkhla/Hat Yai) as well as overseas offices in cities like New York, Los Angeles, and Tokyo.

In those early stages of tourism development special focus was devoted to stimulate domestic tourism. Traditional festivals such as the Loy Krathong festival, the Buddhist Lent Candle parade and so on, were promoted as tourism events, while official seminar were organized in different locations to promote

tourism. The increase in domestic tourism attracted private investments in tourism enterprises and to develop tourism destinations in different locations (Phayakvichien, 2007).

During the first period, public authorities started realizing the economic benefits of tourism and an initial awareness was created regarding the idea that tourism industry had potential to grow more in Thailand. As a response, the first National Tourism Development Plan was implemented in 1977. The main characteristic of the plan was the attempt to combine both, economic development and environmental considerations. The plan indentified infrastructure and tourism/recreation models to ensure that the tourism development process was appropriate for the different destinations. Moreover, initial planning and feasibility studies of potential destinations like Phuket, Hua Hin, Kanchanaburi, were carried out.

Several negative shocks occur during this period such as political unrest in 1973 and 1976, and the world oil crises in 1974 and 1979. However, only the internal political crisis in 1976 led to a decline in the number of tourist arrivals and receipts.

1980-1990: Promotional effort period

The first action developed by the recently created TAT marked the beginning of the second period. This stage was characterized by the successful tourism marketing and promotional policy of Thailand's tourism which constituted a model for other Southeast Asian countries.

The launching of the "Visit Thailand Year" campaign in 1980 helped to achieve an annual growth rate of tourist arrivals and receipts higher than 10% and 30% per year respectively during 1980-1982. The achieved objective of the campaign was to attract international tourists and to create an international image of Thailand as a tourism destination.

This growth trend was cut in 1983 when the economic world recession did have an important impact on Thailand's. In the same year, Thai Airways started direct flights from Phuket to Singapore that helped to develop this region as a tourism destination (nowadays it is the third Thai destination).

In 1987 two new promotional events had a remarkable positive impact on the evolution of Thai tourism. The "Visit Thailand Year" campaign was successfully re-launched and was reinforced by the international media coverage of the events organized for the 60th birthday anniversary of the king had a significant promotional effect. The number of tourist arrivals and receipts grew at 11.23% and 32.16% per year respectively from 1987 until the end of this period in 1990.

1991-2002: Consolidation period

The third period covers the years 1991 until 2002. It is considered a consolidation stage as during this period, international arrivals grew from slightly more than 5 million to the vicinity of 11 million.

After the fast growing years at the end of the 80's, the Gulf War crisis in 1991 and the internal unrest derived from the 1992 military coup attempt caused the contraction of tourism arrivals at the beginning of this period.

Thailand's tourism growth rate recovered after 1992 until the Thai financial instability of 1997 (that led to the abandon of the fix exchange rate policy and the devaluation of Thai Baht) and the Asian crises of 1998. However, it should be noted that the Asian financial crisis did not reduce the number of tourist arrivals mainly because Thailand's main international tourist market in that period were European countries for which the devaluation implied a remarkable improvement of Thai price competitiveness. This effect, combined with the 1998 "Amazing Thailand" campaign explains the excellent trend of tourist arrivals of the period 1997 to 2002.

As mentioned earlier, the strong devaluation of the Bath explains the negative behaviour of receipts as they are presented in U.S. Dollars.

Regarding the planning approach for this period, the main areas of concern were the increase on tourism products quality, and the cooperation with neighbouring countries especially in the ASEAN (Association of South East Asian Nations) and GMS (Greater Mekong Subregion) to increase the length of stay and the average expenditure (Phayakvichien, 2007).

2003-2010: Instability period

The expansionary period in terms of arrivals finished in 2003 with the SARS outbreak, indicating the beginning of the last period characterized by different shocks. These crises include the Tsunami at the end of 2004, the domestic political crisis that continued from 2006 until 2009, the world's economic recession since 2008, and the 2009 influenza epidemic outbreak (H1N1). The chronology of these crises is presented in Table 1.2 below.

Table 1.2 Major Crises with Negative Impacts on Thailand tourism, 2003-2009

| Crisis event | Starting month of crisis |
|---|---------------------------------|
| 1. SARS | March 2003 ¹ |
| 2. Bird flu (H5N1) | February and July 2004 |
| 3. Tsunami | December 2004 |
| 4. Military coup in Thailand | September 2006 |
| 5. US financial crisis | September 2008 ² |
| 6. Closure of Suvannabhumi and Don Muang airports | November 2008 |
| 7. Violence in Bangkok | April 2008 |
| 8. Influenza 2009 (H1N1) | June 2009 ³ |

Notes: ¹ The SARS outbreak began in November, 2002 and spread into Thailand in March 2003.

² The U.S. government announced that it would intervene into the business operation of Fannie Mae and Freddie Mac, Lehman Brothers declared bankrupt.

³ The influenza 2009 was firstly found in March 2009 in Mexico and found spread seriously in April 2009. The first case in Thailand was found in June 2009.

The latest tourism data available corresponds to the year 2010 (UNWTO, 2011a). With 15.9 million tourist arrivals, Thailand ranked 16th in the world and 4th in Asia (after China, Malaysia, and Hong Kong). Tourist arrivals grew a 12.6% in 2010. Total tourism receipts added up to US\$19.7 billion, positioning Thailand as 11th in the world and 3rd in Asia (after China and Hong Kong) and representing an impressive 25.8% growth, as compared with 2009. The main reason for this remarkable growth is the partial recovery from the negative shocks in 2009 mainly domestic political unrest, global tourism contraction due to economic recession, and Influenza 2009 epidemic.

Table 1.3 aims to inform the reader about the main origin markets for Thai tourism. The data reveal that Southeast Asian region accounts for nearly 29% of all tourists to Thailand, proving the importance of intra-regional tourism. However, this percentage is only slightly higher than the 27.2% of Europe. The third position is occupied by East Asia, which accounts for 23.3% of total arrivals to Thailand. As a final note on origin markets, the length of stay is longer for tourists coming from Europe and The Americas while lowest average spending corresponds to European tourists.

Table 1.3 Thailand's International Tourist Arrivals and Receipts by Region of Origin, 2010

| Region | Tourist arrivals | | Length of stay (Day) | Per capita spending (US\$/day) | Tourism receipts | |
|----------------|-------------------|---------------|----------------------|--------------------------------|--------------------------|---------------|
| | Number (millions) | Share (%) | | | Receipts (billions US\$) | Share (%) |
| Southeast Asia | 4.60 | 28.84 | 5.28 | 126.84 | 3.08 | 15.61 |
| East Asia | 3.71 | 23.27 | 6.69 | 140.33 | 3.48 | 17.67 |
| Europe | 4.33 | 27.17 | 14.54 | 117.88 | 7.42 | 37.64 |
| The Americas | 0.79 | 4.97 | 13.45 | 135.63 | 1.45 | 7.33 |
| South Asia | 0.99 | 6.18 | 6.24 | 145.06 | 0.89 | 4.52 |
| Oceania | 0.79 | 4.95 | 11.79 | 144.84 | 1.35 | 6.83 |
| Middle East | 0.62 | 3.86 | 9.98 | 143.05 | 0.88 | 4.45 |
| Africa | 0.12 | 0.76 | 9.24 | 144.68 | 0.16 | 0.83 |
| Total | 15.94 | 100.00 | 9.12 | 135.63 | 19.71 | 100.00 |

Note: Exchange rate 1 US\$ = 31.79 Baht.

Sources: Thai Ministry of Tourism and Sports.

Regarding individual countries in each of origin regions, Malaysia (12.9%) and Singapore (4.1%) are the main markets in Southeast Asia. The main European markets are U.K. (4.8%), Russia (4%), and Germany (3.8%), while China (7.1%), Japan (6.2%), and South Korea (5%) are the main East Asia Markets. India (4.7%) and Australia (4.4%) are the main countries in South Asia and Oceania; however the most remarkable characteristics of this two countries is their high growth rate since 2004 which is 19% and 15% respectively.

Concerning the seasonality pattern, Table 1.4 displays both the monthly arrivals and the seasonal index for the year 2010. The results show that the high tourism season in Thailand goes from November until January, while the rainy months of May and June are low season for international tourists.

Table 1.4 Monthly International Tourist Arrivals to Thailand, 2010

| Month | Number (million) | Seasonal index (%) |
|-----------|------------------|--------------------|
| January | 1,605,505 | 120.89 |
| February | 1,614,844 | 121.60 |
| March | 1,439,401 | 108.39 |
| April | 1,108,209 | 83.45 |
| May | 826,610 | 62.24 |
| June | 964,959 | 72.66 |
| July | 1,275,766 | 96.06 |
| August | 1,270,883 | 95.70 |
| September | 1,214,810 | 91.47 |
| October | 1,316,806 | 99.15 |
| November | 1,478,856 | 111.36 |
| December | 1,819,751 | 137.03 |

Sources: Thai Ministry of Tourism and Sports.

This overview of the Tourism in Thailand finishes with the figures corresponding to the internal destinations in Thailand. Table 1.5 presents the number of visitors, tourists and revenues for the top ten destinations in Thailand (ordered in terms of visitors). The results show that Bangkok clearly benefits from its condition as a gateway for many international tourists and for the importance of business tourists. Two beach destinations, Pattaya and Phuket, rank as second and third. In fact, six of the top ten destinations correspond to this tourist segment, proving that Thailand is characterized as a beach destination for most foreign tourists.

Table 1.5 Top 10 Destinations for Foreign Visitors to Thailand, 2010

| Province | Visitors | | Tourists | | Revenue | |
|----------------------|-------------------|---------------|-------------------|---------------|------------------|---------------|
| | Number (M.) | Share (%) | Number (M.) | Share (%) | (M. US\$) | Share (%) |
| 1. Bangkok | 11,361,808 | 33.50 | 10,444,176 | 36.68 | 7,912.56 | 50.13 |
| 2. Pattaya | 5,359,669 | 15.80 | 5,233,596 | 18.38 | 1,899.17 | 12.03 |
| 3. Phuket | 4,506,026 | 13.29 | 4,305,665 | 15.12 | 3,186.11 | 20.18 |
| 4. Chiang Mai | 1,695,288 | 5.00 | 1,479,087 | 5.20 | 582.93 | 3.69 |
| 5. Ayuttaya | 1,383,391 | 4.08 | 241,583 | 0.85 | 90.69 | 0.57 |
| 6. Krabi | 1,148,208 | 3.39 | 1,059,912 | 3.72 | 613.28 | 3.89 |
| 7. Samui | 621,498 | 1.83 | 620,289 | 2.18 | 256.49 | 1.62 |
| 8. Hat Yai | 872,102 | 2.57 | 784,821 | 2.76 | 201.04 | 1.27 |
| 9. Phang Nga | 502,946 | 1.48 | 313,449 | 1.10 | 104.56 | 0.66 |
| 10. Hua Hin | 480,882 | 1.42 | 403,022 | 1.42 | 135.61 | 0.86 |
| Whole Kingdom | 33,914,989 | 100.00 | 28,470,496 | 100.00 | 15,784.89 | 100.00 |

Sources: Thai Ministry of Tourism and Sports.

1.3 Significant Tourism Trends Changes

The new edition of the UNWTO long run forecast “Tourism Towards 2030” (UNWTO, 2011b) addresses the objective to provide a long run analysis of the changes that are likely to shape the tourism industry in the next twenty years. This is particularly relevant in the current situation in which tourism is acknowledged as one of the main economic drivers in many countries, especially among developing countries.

UNWTO (2011b) predicted that total growth in international tourist arrivals will maintain its positive growth, but will reduce its speed from 3.9% per year (during 1995-2020) to 3.3% per year during 2010-2030. The UNWTO report relates this reduction with the combination of four factors: 1) higher base volumes, 2) lower GDP growth rate as economics mature, 3) the lower elasticity of travel to GDP, and 4) a shift from falling transport costs to increasing ones.

Regarding the regional distribution of the changes, the report forecasts that Asia-Pacific will gain most of the new tourist arrivals, raising from 204 million in 2010 to 535 million in 2030, and will increase its global market shares from 22% in 2010 to 30% in 2030. On the other hand, Europe and The Americas will decline in market share from 51% and 16% in 2010 to 41% and 14% in 2030 respectively. Asia-Pacific will also be the fastest growing outbound region, generating on average an additional 17 million international arrivals every year, most of them

engaged in intraregional tourism. The Southeast Asia sub-region continues growing at a fast pace of 5.1% per year, adding to already substantial base values. With around 187 million tourists, it will become the fourth most visited sub region with a global market share of 10.3% in 2030. Regarding particular emerging markets, the report indicates that India and China are expected to become some of the world's largest producers of international tourists (UNWTO and ETC, 2011).

Besides this general analysis, it is possible to particularize the trends which are likely to affect Thailand's tourism in the following decades:

1. Change in the profile of tourists due to both, aging population (particularly in Europe and U.S.) and change in the market share of different origin countries, with the increase of China and India being the most remarkable growing markets (UNWTO and ETC, 2011).
2. Liberalization of the services sector (including tourism) in the ASEAN countries in 2015, which would imply market opportunities but also a more intense competition for Thailand's tourism.
3. The potential increase in unexpected natural disasters, such as the flooding of central Thailand at the end of 2011, and more to come in the future owing to climate change is an important risk to Thailand's tourism (Kaosa-ard, Rayanakorn and Adam, 2011).
4. The development of communication and transportation technology is likely to make competition more intense. Particularly, aviation technology developments may cause that Thailand lessened its advantage as aviation hub of the Southeast Asian region.

The review of the evolution of Thailand's tourism in the last fifty years, and the analysis of the potential changes that are likely to affect its tourism in the next decades finish the presentation of the general framework in which this research is

embodied. The last section of the introduction presents the content of the remaining chapters.

1.4 The Structure of Thesis

This thesis is structured in six chapters. It is worth mentioning that chapters 2 to 5 were developed as four self-contained pieces of research with the structure of a publishable academic paper. Hence, each of them presents the necessary motivation, antecedents, methodology, results and conclusions. The last concluding chapter presents the main contributions of the thesis and a summary of the results that have been exposed in each of the preceding chapters.

A brief description of the following chapters is provided below.

The first research topic, presented in chapter 2, aims to examine tourism as an export activity, in order to provide an initial measurement of Thailand's competitiveness based on the trade theory's concepts. The first of three related objectives which are covered is the assessment of Thailand's external competitiveness. With this purpose, static and dynamic coverage ratio are computed for Thailand and its regional competitors in Southeast Asia. The second objective applies revealed competitive advantage, as initially defined by Balassa in 1965, to measure the tourism specialization of each country in the Southeast Asian region (except Brunei). Finally, the last objective of the chapter is the decomposition of the growth rate of tourist arrivals into different components, by means of shift-share analysis. The most relevant part of this objective is the dynamic information obtained on the relation between each of the countries in Southeast Asia and their main origin regions.

Chapter 3 focuses on modeling aggregate Thailand's long-run tourism demand for a large set of origin countries with three related objectives. The first issue of interest is to provide estimates of long-run own price, cross price and income elasticities, in order to be able to assess the effect of different internal policies and external changes. The second objective is to compare the value of

those elasticities when data with different frequencies (monthly versus yearly) is applied. A dynamic ordinary least squares (DOLS) with data from 1985 to 2009 is used for the first two objectives. Finally, a long-run static model of time varying parameter (TVP-LRM) is used to study the potential structural change caused by the 1997's economic crisis and the subsequent change in the exchange rate policy.

Another approach to the analysis of demand is presented in chapter 4. The aim of this chapter is to analyze of the evolution of the causal relationships among Thailand's destination image, international tourists' experience, and destination loyalty, as affected by the political crises from October 2008 to May 2009. The proposed structural equation model proved its robustness; while different circumstances alter the variables and its coefficients, the overall structural behavior level was not changed. Hence, this framework can be used to test the behavior of international tourists under different circumstances. The chronological estimation of the model shows that the impact of political crises tends to be short term.

From the supply side analysis, chapter 5 estimates the change in managerial efficiency and management technology of a sample of hotels in Chiang Mai, Thailand, during the period 2002 to 2006. The study applies the data envelopment analysis (DEA) methodology, proposed by Banker, Charnes and Cooper (1984), to examine managerial efficiency in 2002 and 2006. Malmquist productivity approach developed by Färe *et al.* (1992) is employed to evaluate the changes in both, managerial efficiency and management technology, over the same period.

Finally, chapter 6 is devoted to the PhD thesis' conclusions. It summarizes the issues raised in each of the chapters, and highlights the most important contributions and results.

1.5 References

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Chapter II

Tourism Specialization and Competitive Advantage of Thailand

2.1 Introduction

As explained in the introductory chapter of this thesis, after the regional financial crisis in 1997, tourism industry has become an increasingly important sector in Thailand's economy. With comparative advantages in the varieties of destinations and attractions, tourist facilities and infrastructure, as well as charming and friendly services, tourism in Thailand has been continuously growing for the past few decades.

Similarly to Thailand, other Southeast Asian countries have continued to promote their destinations in order to increase tourism contribution to their economy. Since tourist attractions in other regional countries are at least partially substitutes, competition has increased in the Southeast Asian tourism market (Song, Witt and Li, 2003; Untong *et al.*, 2011). Abundant resources in some neighboring countries, such as Laos, Cambodia, Vietnam, may increase their potential as tourism attractions, while some countries such as Malaysia and Singapore, have already heavily promoted the investment in tourism infrastructure, facilities and attractions in order to improve their competitiveness (Kaosa-ard and Untong, 2008; Kaosa-ard, 2008).

Although some tourism resources and attractions in Southeast Asian destinations are quite similar, each country has its own particularities in terms of factor endowments (comparative advantage), tourism management, policy and planning (competitive advantage), and tourism specialization. Each country's particularities and diversity lead to differences in tourist arrivals and receipts.

Since tourism is an exporting activity, the concepts developed in the international trade theory have been applied in order to provide an understanding

of this activity. Previous studies examined which factors determine tourism specialization and comparative advantage at a regional level focusing on elements as real exchange rate, revealed comparative advantage, etc. In addition, tourist arrivals growth was also decomposed in different components to understand the dynamic behavior of tourism competitiveness (Fuchs *et al.*, 2000; Toh, Khan and Lim, 2004; Vu and Turner, 2011).

The studies that examined the degree of tourism specialization (Sahli, 2006; Kim and Lee, 2010) used Balassa's revealed comparative advantage (BRCA). Interesting conclusions are provided regarding the relation between tourism specialization and other trade characteristics. Sahli (2006) proved that the OECD countries that have the highest tourism receipts market shares are not necessarily those that are most specialized in tourism. Besides, Kim and Lee (2010) analyzed the tourism specialization of South Korea and its potential competitors and founded that tourism specialization is consistent with the trade ratio (defined as the ratio between trade surplus and total trade).

Another relevant group of tourism studies based on the trade theory started with Sirakaya, Uysal and Toepper (1995). This line of research applies shift-share analysis (SSA) to decompose the growth of some tourism variable into its components and to assess the tourism competitive advantages as compared with other sectors. The seminal 1995 paper considered the evolution of tourism employment as the variable of interest. However, Fuchs *et al.* (2000) suggested that tourist arrivals are more appropriate to describe tourism regional growth. Moreover, the application of SSA using tourist arrivals can help decision makers to develop more sophisticated long-term strategies for tourism policy (Fuchs *et al.*, 2000), and to understand the role of the competitive advantage and specialization in the global tourism marketplace (Alavi and Yasin, 2000). As Toh, Khan and Lim (2004) indicates, as SSA is based on tourist arrivals, this method is capable of measuring only competitive demand changes between markets, and the relative changes over time based on the quantity. However, the profile of the visitors is not considered.

Vu and Turner (2011) applied SSA to the analysis of Vietnam as compared separately with Thailand and China. But this study does not analyze the Thai situation or provide any regional comparisons. In fact, as far as the authors are aware, there has been no research published at national or international level considering Thailand's tourism specialization or competitive advantage based on the international trade concepts. Only Kaosa-ard and Untong (2008) applied the competitive advantage ratio (CAR) to examine the tourism competitiveness of Thailand and Greater Mekong Subregion (GMS) countries.

In this general context, this chapter of the thesis aims to examine tourism as an export activity in order to present an initial approach to Thailand's competitiveness. The concepts and methodologies that are going to be used are derived from the international trade theory. In this sense the main contribution of this study is to provide the first analysis of Thailand's tourism specialization and competitive advantage, as well as to compare it with the main tourism destinations in the Southeast Asian region.

In order to provide such analysis, the chapter is divided into three main objectives. The first objective applies static and dynamic coverage ratio (CR) to compare Thailand's external tourism competitiveness with other Southeast Asian countries during the period 1999-2008. This concept is defined by Sahli (2006) as the country's competitive ability to retain or increase its market share of tourism export. The results of this analysis would indicate if the country is committed to tourism export and can be classified as competitive in tourism when compared with other countries in its competitive region.

The second objective is to measure revealed comparative advantage to assess Thailand's tourism specialization as compared with other destinations in the Southeast Asian region. Previous studies widely used Balassa's revealed comparative advantage (BRCA) to analyze tourism specialization which refers to the importance of tourism as an exporting activity of each country. Similarly, as in the first objective, both static and dynamic analysis of this concept will be

presented for the major destinations in the region. However, BRCA can not be used to compare the magnitude of tourism specialization in different countries or time periods (Laursen, 1998; Proudman and Redding, 2000; Hoen and Oosterhaven, 2006; Yu, Cai and Leung, 2009). Hence, this chapter uses the normalized revealed comparative advantage (NRCA) as proposed by Yu, Cai and Leung (2009) to provide intraregional comparison of tourism specialization. It is remarkable that, as far as the authors are aware, NRCA had not yet been applied to tourism.

In the third objective, shift-share analysis (SSA) is applied to decompose the growth rate of tourist arrivals to Thailand into different components. This methodology is particularly useful to separate the role that each destination competitive advantage and its specialization in different origin regions has on the dynamic evolution of the growth rate of arrivals. Previous studies used the conventional SSA formula which focuses on the total increase of arrivals. This study contributes to the tourism literature by adjusting the previous formula in order to analyze the growth rate of arrivals for the period 1999-2008.

The empirical part of first and second objectives uses data on the value of tourism and total exports obtained from IMF's Balance of Payments Yearbook for tourism destinations in the Southeast Asian region as defined by UNWTO: Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, and Thailand (Vietnam is not considered in this parts as there are no records for all the period). On the other hand, the SSA uses tourist arrivals to the nine destinations mentioned above. These data were obtained from the Annual Statistical Report and Annual Tourism Monitor published by Pacific Asia Travel Association.

The next section provides an overview of Southeast Asian tourism. Section 3 reviews the methodologies applied in each part of the chapter: CR, BRCA, NRCA and SSA. Discussion of the empirical results are presented in section 4, followed by the conclusions.

2.2 An Overview of Southeast Asian Tourism

The success of Thailand's tourism promotion during the 80's served as a model for other Southeast Asian countries that started their own tourism promotion during the 90's. "Visit Malaysia Year" and "Visit Vietnam Year" campaigns were applied in 1990, followed by "Visit Myanmar Year" in 1996, "Visit Laos Year" in 1999-2000, and "Visit Cambodia Year" in 2003-2004. Although the particular outcomes of those activities were diverse (Kaosa-ard and Untong, 2008) overall, these regional attempt to engage in tourism promotion delivered very positive results. In the first decade of this century inbound tourist arrivals to Southeast Asian countries raised about 8% a year from 33 million in 1999 to 64 million in 2008.

For the period 1999-2008, Table 2.1 presents the evolution of tourist arrivals, its correspondent regional market share, and the annual growth rate for each Southeast Asian country (except Brunei, which due to its richness in natural resources is neither engaged in tourism, nor considered a destination). The countries are ordered following the annual growth rate during the last decade. As can be seen from the table, 70% of inbound tourist arrivals to the region cluster in 3 countries: Malaysia, Thailand and Singapore.

Regarding the national evolution, the results of Table 2.1 show that during the last decade Cambodia, which started with very low arrivals in 1999, had the highest annual growth rate in tourist arrivals (22%). It is worth mentioning that Cambodia is blessed with the differentiating resource of Angkor Wat, a UNESCO World Heritage site.

With an annual growth rate of tourist arrivals of about 14%, Malaysia also increased continuously. This positive evolution which has allowed the country to be the regional tourism leader with more than 22 million tourists in 2010 is mainly due to both, the public effort done in public policy and promotion, as the successful of "Malaysia Truly Asia" campaign, and the benefit from Singaporean cross-border tourism.

Laos and Vietnam did also experience tourist arrivals growth rates above 10%, while for Thailand, Singapore and the Philippines, the annual growth rates were around 5-6%. Below that level, Indonesia achieved a 3.6% growth affected by internal political tensions and terrorism while Myanmar has not yet been able to exploit its tourism potential due to the internal political situation and the effects of international sanctions.

Table 2.1 Inbound Tourist Arrivals to the Southeast Asia, 1999-2008

| Destination | 1999 | | 2002 | | 2005 | | 2008 | | Annual growth rate (99-08) (%) |
|------------------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|--------------------------------|
| | Number (millions) | Share (%) | Number (millions) | Share (%) | Number (millions) | Share (%) | Number (millions) | Share (%) | |
| Cambodia | 0.37 | 1.10 | 0.79 | 1.83 | 1.42 | 2.80 | 2.00 | 3.11 | 21.94 |
| Malaysia | 7.93 | 23.75 | 13.29 | 30.90 | 16.43 | 32.36 | 22.05 | 34.29 | 13.56 |
| Laos | 0.61 | 1.84 | 0.74 | 1.71 | 1.10 | 2.16 | 1.74 | 2.70 | 13.52 |
| Vietnam | 1.78 | 5.33 | 2.63 | 6.11 | 3.47 | 6.83 | 4.25 | 6.61 | 10.55 |
| Thailand | 8.65 | 25.90 | 10.87 | 25.28 | 11.57 | 22.78 | 14.58 | 22.68 | 6.27 |
| Singapore | 6.96 | 20.83 | 7.57 | 17.59 | 8.94 | 17.61 | 10.12 | 15.73 | 5.12 |
| Philippines | 2.17 | 6.50 | 1.93 | 4.49 | 2.62 | 5.17 | 3.14 | 4.88 | 4.61 |
| Indonesia | 4.73 | 14.15 | 4.98 | 11.58 | 5.00 | 9.85 | 6.23 | 9.69 | 3.55 |
| Myanmar | 0.20 | 0.60 | 0.22 | 0.50 | 0.23 | 0.46 | 0.19 | 0.30 | 0.33 |
| Southeast Asian | 33.40 | 100.00 | 43.01 | 100.00 | 50.78 | 100.00 | 64.31 | 100.00 | 8.11 |

Source: Pacific Asia Travel Association (2008).

A similar regional tourism receipts analysis (excluding Vietnam due to lack of data) is provided following the data presented in Table 2.2, which shows that total tourism receipts increased from US\$23 billion in 1999 to US\$56 billion in 2008 (11% annual growth rate).

In terms of volumes, Thailand had the highest tourism receipts with more than 30% of the total in Southeast Asia, followed by Malaysia (27.2%) and Singapore (17.6%). Further analysis of the difference between the ranking of Malaysia and Thailand in terms of arrivals and receipts will be provided in a subsequent origin markets discussion.

In terms of last decade's tourism receipts growth rates, the three top positions are occupied by the same countries that lead inbound tourist arrivals, Cambodia (23%), Malaysia (19%) and Laos (17.7%). Followed by Thailand and Singapore with 12% and 9.9% annual growth rates, respectively. The ranking is

closed by Myanmar, which is the only country in the region for which tourism receipts decreased (-0.20%) during this decade.

As a final remark on the above discussion on arrivals and receipts growth rates, a difference has to be made between Cambodia and Laos, which expanded from a small baseline, and the leading group of Malaysia, Thailand and Singapore, which were destinations with already more than 6 million tourists in the beginning of the period.

Table 2.2 Tourism Receipts in Southeast Asia, 1999-2008

| Destination | 1999 | | 2002 | | 2005 | | 2008 | | Annual growth rate (99-08) (%) |
|------------------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------------------|
| | Receipts (M. US\$) | Share (%) | Receipts (M. US\$) | Share (%) | Receipts (M. US\$) | Share (%) | Receipts (M. US\$) | Share (%) | |
| Cambodia | 212 | 0.92 | 454 | 1.64 | 840 | 1.93 | 1,219 | 2.20 | 23.05 |
| Malaysia | 3,588 | 15.52 | 7,118 | 24.81 | 8,846 | 26.24 | 15,293 | 27.24 | 19.06 |
| Laos | 82 | 0.35 | 107 | 0.31 | 139 | 0.38 | 276 | 0.37 | 17.69 |
| Thailand | 7,028 | 30.40 | 7,901 | 33.03 | 9,577 | 32.12 | 18,163 | 32.31 | 12.07 |
| Singapore | 5,089 | 22.01 | 4,458 | 16.19 | 6,205 | 17.04 | 10,711 | 17.61 | 9.83 |
| Indonesia | 4,352 | 18.83 | 5,285 | 16.97 | 4,522 | 15.35 | 7,377 | 10.36 | 7.40 |
| Philippines | 2,578 | 11.15 | 1,761 | 6.49 | 2,265 | 6.45 | 2,499 | 9.56 | 4.70 |
| Myanmar ^{1/} | 189 | 0.82 | 120 | 0.49 | 153 | 0.44 | 165 | 0.35 | -0.20 |
| Southeast Asian | 23,119 | 100.00 | 27,218 | 100.00 | 32,566 | 100.00 | 55,703 | 100.00 | 11.07 |

Source: International Monetary Fund (2008), ^{1/} Ministry of Hotels and Tourism of Myanmar (2008).

Once total arrivals and receipts are analyzed for each of the countries, the intra-regional tourist data for the year 2008 are detailed in Table 2.3. Two reasons justify the importance of this disaggregation. First, there are significant differences on the weight of intraregional tourism among the destinations. Second, 44% of total international tourist arrivals to Southeast Asia, about 28 million, were from within Southeast Asian countries.

Table 2.3 indicates that regional tourism was particularly important for Laos and Malaysia since over 70% of inbound tourist arrivals were regional tourists. On the other extreme, only 8% and 12% of tourists that visited Philippines and Vietnam, respectively, came from Southeast Asian countries. Between this two groups, one-third of inbound tourist arrivals to Indonesia and Singapore were regional tourists, while for Cambodia, Thailand and Myanmar regional tourists represented one-fourth of their inbound tourism.

Table 2.3 Intra-Southeast Asia Tourist Arrivals, 2008

| Destination | Country of origin (number of arrivals: tourists) | | | | | | | | | % region of all arrivals |
|------------------------|--|------------------|------------------|-------------------|----------------|------------------|----------------|------------------|------------------|--------------------------|
| | Laos | Malaysia | Indonesia | Singapore | Cambodia | Thailand | Myanmar | Vietnam | Philippines | |
| Laos | | 15,625 | 2,043 | 4,866 | 5,482 | 891,448 | 1,698 | 351,384 | 12,647 | 74.00 |
| Malaysia | 26,564 | | 2,428,605 | 11,003,492 | 35,464 | 1,493,789 | 43,131 | 122,933 | 397,884 | 70.52 |
| Indonesia | - | 1,117,454 | | 1,397,056 | - | 76,842 | - | 12,215 | 159,003 | 44.31 |
| Singapore | - | 647,339 | 1,765,404 | | - | 333,892 | 78,580 | 239,294 | 418,920 | 34.44 |
| Cambodia | 60,933 | 80,738 | 9,198 | 40,945 | | 109,020 | 2,461 | 209,516 | 39,294 | 27.59 |
| Thailand | 621,564 | 1,805,332 | 247,930 | 570,047 | 85,790 | | 71,902 | 338,303 | 221,506 | 27.17 |
| Myanmar | 286 | 8,268 | 1,904 | 8,599 | 293 | 27,311 | | 1,084 | 1,595 | 25.52 |
| Vietnam | - | 174,008 | - | 158,405 | - | 183,142 | - | | - | 12.12 |
| Philippines | 814 | 69,676 | 27,830 | 100,177 | 1,834 | 31,499 | 5,116 | 13,675 | | 7.98 |
| Southeast Asian | 710,161 | 3,918,440 | 4,482,914 | 13,283,589 | 128,863 | 3,146,943 | 202,888 | 1,288,404 | 1,250,404 | 44.18 |

Source: Pacific Asia Travel Association (2008).

A final remark on the joint border effect can be done regarding the cases of Laos, where half of the tourists came from Thailand, and Malaysia where a similar 51% of arrivals were from Singapore.

The final part of this regional tourism overview is devoted to the analysis of the economic impacts of tourism in the region. Table 2.4 shows the contribution share of tourism receipts on exports and GDP for each of the countries in the year 2008. The countries are presented ordered by the latter variable.

Table 2.4 Size of Tourism Economies in Southeast Asia, 2008

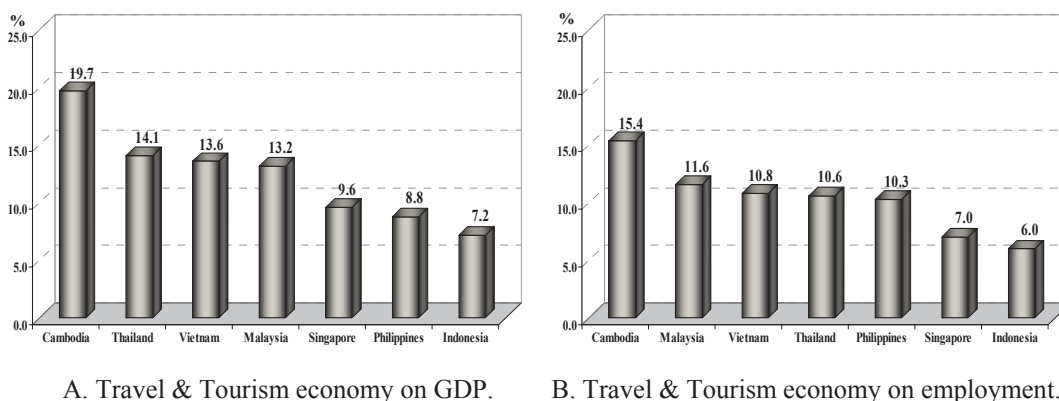
| Destination | Tourist arrivals (million arrivals) ^{1/} | Tourism receipts (million US\$) ^{2/} | Tourism receipts as % of exports (%) ^{3/} | Tourism receipts as % of GDP (%) ^{3/} |
|-------------|---|---|--|--|
| Cambodia | 2.00 | 1,219 | 19.18 | 10.81 |
| Malaysia | 22.05 | 15,293 | 6.65 | 6.90 |
| Thailand | 14.58 | 18,163 | 9.54 | 6.67 |
| Singapore | 10.12 | 10,711 | 2.47 | 5.62 |
| Laos | 1.74 | 276 | 18.48 | 5.19 |
| Vietnam | 4.25 | 3,930 | 5.64 | 4.35 |
| Indonesia | 6.23 | 7,377 | 4.76 | 1.44 |
| Philippines | 3.14 | 2,499 | 4.31 | 1.44 |
| Myanmar | 0.19 | 165 | 2.37 | 0.53 |

Source: ^{1/} Pacific Asia Travel Association (2008), ^{2/} International Monetary Fund (2008), ^{3/} Calculated from International Monetary Fund data (2008).

The results show that tourism receipts were very important for Cambodia's economy, where the share of tourism receipts to GDP was 11% while tourism represents 19% of their exports. The direct impact of tourism on GDP was similarly close to 7% for Thailand and Malaysia, while in relation to total exports the importance of tourism was slightly higher in Thailand with 9% as compared with

the 7% of Malaysia. On the other hand, tourism was less important in economic terms for Indonesia, Philippines and Myanmar. It is remarkable the case of Laos where tourism represented only 5% of its GDP while it accounts for 18% of its exports.

Finally, Figure 2.1 reproduces the WTTC (2008) regional overall contribution of Travel & Tourism economy to GDP and employment. It shows that direct, indirect and induced effects in Cambodia, Thailand, Vietnam and Malaysia accounted for over 10% of their GDP and employment in 2008. For Singapore, the Philippines and Indonesia tourism contribution to GDP was over 7%.



Source: WTTC (2008).

Figure 2.1 Travel & Tourism Economy on GDP and Employment, 2008

2.3 Methodology

This section describes the concepts and measures of international trade theory which are applied in the empirical part of this chapter.

2.3.1 Overall external competitiveness

Sahli (2006) defined the external competitiveness of a country's tourism as the country's competitive ability to retain or increase its market share of tourism export. The proposed indicator is the coverage ratio (CR) of tourism exports for a given country as compared to the considered region, as presented in equation (1) (Hazari, Nowak and Sahli, 2003; Sahli, 2006):

$$CR_j = \frac{X_{tj}/X_{ts}}{M_{tj}/M_{ts}} \quad (1)$$

where j is one of the 8 countries in Southeast Asian region: Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, and Thailand (there is no report for Vietnam), X_{tj} is country j 's export value of tourism, X_{ts} is Southeast Asian region's export value of tourism, M_{tj} is country j 's import value of tourism and M_{ts} is Southeast Asian region's import value of tourism.

The criteria for considering that a country has tourism competitive advantage are (Sahli, 2006; Jelili and Ebrahim, 2010):

- If $CR_j = 1$ country j is in equilibrium, in the sense that it has the same coverage ratio as Southeast Asian countries.
- If $CR_j > 1$ country j has competitive advantage in tourism, in the sense that it has a surplus relative to the Southeast Asian countries.
- If $CR_j < 1$ country j has no competitive advantage in tourism since it has deficit relative to the Southeast Asian countries.

The CR presented in equation (1) is static, however it is possible to obtain a dynamic analysis by taking logs and then totally differentiating this equation. As presented in equation (2), the growth in CR_j can be decomposed into the following:

$$\frac{\Delta CR_j}{CR_j} = \frac{\Delta(X_{tj}/X_{ts})}{X_{tj}/X_{ts}} - \frac{\Delta(M_{tj}/M_{ts})}{M_{tj}/M_{ts}} \quad (2)$$

From equation (2), country j is regarded as competitive in tourism when $\frac{\Delta(X_{tj}/X_{ts})}{X_{tj}/X_{ts}} > 0$ and $CR_j > 1$ (Sahli, 2006).

Once the analysis of external competitiveness is performed, the next step is to analyze the tourism specialization of a country by considering the revealed comparative advantage.

2.3.2 Revealed comparative advantage

Revealed comparative advantage is a popular tool that economists use to measure international specialization in exporting a given commodity over other goods and services. It was first proposed by Balassa in 1965. BRCA is calculated by the ratio between each country's share of tourism exports and the regional share of tourism exports.

$$BRCA_j = \frac{\text{Country } j \text{'s share of tourism export}}{\text{Southeast Asian region 's share of tourism export}}$$

This can be written with the following formula:

$$BRCA_j = \frac{X_{tj}/X_j}{X_{ts}/X_s} \quad (3)$$

where j is all countries in Southeast Asian, $BRCA_j$ is country j 's revealed comparative advantage in tourism, X_{tj} is country j 's export value of tourism, X_j is country j 's total export value, X_{ts} is Southeast Asian region's export value of tourism and X_s is Southeast Asian region's total export value.

Following the above equation, $BRCA > 1$ indicates that this country has tourism specialization or has revealed comparative advantage in tourism.

As it happened in the case of CR, this analysis is static. A dynamic revealed comparative advantage was developed by Tsikata (1999), and has been further applied in the literature (Valentine, and Krasnik, 2000; Edwards and Schoer, 2001; Kaosa-ard and Untong, 2008). By taking the logs of equation (3) and then totally differentiating it, growth in $BRCA_j$ can be decomposed into the change in

country j 's share of tourism export and share of tourism export in Southeast Asia as follows:

$$\frac{\Delta BRCA_j}{BRCA_j} = \frac{\Delta(X_{tj}/X_j)}{(X_{tj}/X_j)} - \frac{\Delta(X_{ts}/X_s)}{(X_{ts}/X_s)} \quad (4)$$

From equation (4), tourism export situation can be classified in the 6 situations described in Table 2.5.

Table 2.5 Tourism Export Situations by Dynamic Revealed Comparative Advantage

| The direction of growth in BRCA | The direction of growth in | | | Export situation |
|---------------------------------|--|---|--|---------------------|
| | country j 's share of tourism export | | Southeast Asian region's share of tourism export | |
| Increasing | ↑ | > | ↑ | Rising star |
| | ↑ | | ↓ | Falling star |
| | ↓ | < | ↓ | Retreat |
| Declining | ↑ | < | ↑ | Lagging opportunity |
| | ↓ | | ↑ | Lost opportunity |
| | ↓ | > | ↓ | Follow retreat |

Source: adapted from Edwards and Schoer (2001) and Kaosa-ard and Untong (2008).

If BRCA is increasing (higher tourism specialization of country j):

1. *Rising star*: means that tourism situation in Southeast Asia and country j is likely to improve; whereas country j 's growth rate in tourism export is higher than tourism growth rate in the Southeast Asian region.

2. *Falling star*: means that country j 's growth rate in tourism export is likely to improve; whereas tourism situation in Southeast Asia is shrinking.

3. *Retreat*: means that country j 's growth rate in tourism export is decreasing at a slower rate than in Southeast Asia.

If BRCA is decreasing (lower tourism specialization of country j):

1. *Lagging opportunity*: means that tourism situation in Southeast Asia and country j is likely to improve; however country j 's growth rate in tourism export is slower than tourism growth rate in Southeast Asia.

2. *Lost opportunity*: means that tourism situation in Southeast Asia is likely to improve; however country j 's growth rate in tourism export is decreasing.

3. *Follow retreat*: means that tourism situation in Southeast Asia and country j is shrinking; however country j 's growth rate in tourism falls faster than tourism growth rate in Southeast Asia.

Yu, Cai and Leung (2009) argued that as BRCA obtained from equation (3) has a value from 0 to ∞ , then the mean value of BRCA scores for different countries, commodities or time periods may reasonably not be the same. Thus, BRCA can not be used for comparing different countries and time periods as the same magnitude of BRCA may indicate different levels of tourism specialization.

Several studies have proposed alternative measures of revealed competitive advantage that overcome the asymmetric property of BRCA such as symmetrical RCA (SRCA) (Laursen, 1998), WRCA (to weigh a country's RCA) (Proudman and Redding, 2000), additive RCA (ARCA) (Hoen and Oosterhaven, 2006), and normalized RCA (NRCA) (Yu, Cai and Leung, 2009). This chapter uses NRCA as presented in equation 5 as it is the only index that can be used to compare different countries and time periods.

$$NRCA_j = \frac{X_{tj}}{X_s} - \frac{X_j \times X_{ts}}{X_s^2} \quad (5)$$

$NRCA_j$ has a value between $-1/4$ and $+1/4$ (Yu, Cai and Leung, 2009). $NRCA_j$ equal 0 is the criteria point to consider the tourism specialization (similar

to $BRCA_j = 1$). Thus, if $NRCA_j > 0$ indicates that country j has tourism specialization (similar to $BRCA_j > 1$). On the other hand, $NRCA_j < 0$ indicates that country j has no tourism specialization (similar to $BRCA_j < 1$). The relationship between $BRCA_j$ and $NRCA_j$ can be presented below:

$$BRCA_j = \frac{NRCA_j}{(X_{ts}/X_s) \times (X_j/X_s)} + 1 \quad (6)$$

2.3.3 Shift-share analysis

Shift-share analysis (or constant market share: CMS) is a widely used analytical technique for decomposing the growth in an economic variable such as income, export, employment, etc (Alavi and Yasin, 2000). It has also been extensively applied in the analysis of income and employment growth in the tourism sector (Sirakaya, Uysal and Toepper, 1995; Fuchs *et al.*, 2000; Alavi and Yasin, 2000; Toh, Khan and Lim, 2004; Shi *et al.*, 2007; Vu and Turner, 2011).

The traditional shift-share model was proposed by Creamer (1943) to decompose the growth of a given variable into three components: the nation growth effect (or share effect), the industry-mix effect and the competitive effect. Later, Esteban-Marquillas (1972) proposed to also include the interaction effect between industry-mix effect and competitive effect (named as allocation effect). Stokes (1974) criticized that the Esteban-Marquillas approach loses both, the property of region-to-region additively and the aggregation-disaggregation symmetry. However, Haynes and Machunda (1987) proved that the Esteban-Marquillas approach indeed possesses the aggregation-disaggregation symmetry, and thus it was an improvement over the Creamer approach.

This study applies the Esteban-Marquillas's model to decompose the growth rate of inbound tourist arrivals from seven world regions in the world to Southeast Asian countries. In order to choose the aggregation of countries in different origin regions, the Tourism Authority of Thailand aggregation which

considers Southeast Asia, South Asia, East Asia, Oceania, Europe, The Americas and Middle East & Africa has been applied.

The Esteban-Marquillas's model can be presented as:

$$T_{rj}^t - T_{rj}^0 = T_{rj}^0 G_s + T_{rj}^0 (g_{rs} - G_s) + T_j^0 (T_{rs}^0 / T_s^0) (g_{rj} - g_{rs}) + (T_{rj}^0 - T_j^0 (T_{rs}^0 / T_s^0)) (g_{rj} - g_{rs}) \quad (7)$$

However, this approach is not useful for regional comparison as total increase is affected by the size effect. Thus this chapter proposes to transform equation (7) into growth rates, as presented in equation (8), dividing it by T_{rj}^0 . Even if this modification is conventionally applied in the SSA applications to other goods, as far as the authors are aware, it is the first time that it is applied to the study of tourism.

$$\left(\frac{T_{rj}^t - T_{rj}^0}{T_{rj}^0} \right) = \left(\frac{T_{rj}^0 G_s}{T_{rj}^0} \right) + \left(\frac{T_{rj}^0 (g_{rs} - G_s)}{T_{rj}^0} \right) + \left(\frac{T_j^0 (T_{rs}^0 / T_s^0) (g_{rj} - g_{rs})}{T_{rj}^0} \right) + \left(\frac{(T_{rj}^0 - T_j^0 (T_{rs}^0 / T_s^0)) (g_{rj} - g_{rs})}{T_{rj}^0} \right) \quad (8)$$

Equation (8) can be rewritten as follows:

$$g_{rj} = G_s + (g_{rs} - G_s) + \left(\frac{T_j^0 (T_{rs}^0 / T_s^0) (g_{rj} - g_{rs})}{T_{rj}^0} \right) + \left(\frac{(T_{rj}^0 - T_j^0 (T_{rs}^0 / T_s^0)) (g_{rj} - g_{rs})}{T_{rj}^0} \right) \quad (9)$$

where r are is on of the seven considered origin regions, j is Southeast Asian countries, 0 is the beginning of the period, t is the end of the period, T_{rj}^t is tourist arrivals from region r to country j in the end of the period, T_{rj}^0 is tourist arrivals from region r to country j in the beginning of the period, T_j^0 is the total tourist arrivals to country j in the beginning of the period, T_{rs}^0 is tourist arrivals from region r to Southeast Asia in the beginning of the period, G_s is the growth rate of total tourist arrivals to Southeast Asia, g_{rs} is the growth rate of tourist

arrivals from region r to Southeast Asia and g_{rj} is the growth rate of tourist arrivals from region r to country j .

Based on equation (9), the growth rate of tourist arrivals from region r to country j from year 0 to year t is decomposed into four components as:

1. The growth of total tourist arrivals to Southeast Asia (G_s), which is known as “area-wide effect”.

2. The change in behavior of tourists from region r to Southeast Asia ($g_{rs} - G_s$), which is known as “region-mix effect”. A positive value of region-mix effect indicates that tourist arrivals from region r to Southeast Asia are growing more than total tourist arrivals to Southeast Asia. In other words, Southeast Asia has competitive advantage in region r .

3. Country j 's competitiveness in region r $\left(\frac{T_j^0 (T_{rs}^0 / T_s^0) (g_{rj} - g_{rs})}{T_{rj}^0} \right)$, which

is known as “competitive effect”. A positive value of competitive effect indicates that country j has specialization in region r compared with other countries in Southeast Asia.

4. The interaction effect between region-mix effect and competitive effect $\left(\frac{(T_{rj}^0 - T_j^0 (T_{rs}^0 / T_s^0)) (g_{rj} - g_{rs})}{T_{rj}^0} \right)$, which is known as “allocation effect”. The size

of allocation effect combines two important elements. First it measures the destination's specialization in the corresponding region of origin at the beginning of the analyzed period $(T_{rj}^0 - T_j^0 (T_{rs}^0 / T_s^0))$. Thus it shows if the destination initial position in the region is strong. Second, $(g_{rj} - g_{rs})$ compares the growth rate of arrivals to the destination with the regional growth rate. Thus it assesses the competitive advantage of destination j in origin r as compared with other countries

in Southeast Asia. The magnitude and direction of the allocation effect show how well country j is doing in terms of attracting tourists from different regions according to its competitive position (Alavi and Yasin, 2000).

Herzog and Olsen (1977), described four possible combinations of the allocation effect depending on the sign of the competitive advantage and the specialization component that are presented in Table 2.6 (this classification has also been applied in Alavi and Yasin, 2000; and Jelili and Ebrahim, 2010). In this sense, at the beginning of the considered period each country may be specialized or not in a given region of the world, and considering the growth rate performance it may have had competitive advantage or disadvantage in terms of attracting tourists from a given region.

Table 2.6 Possible Allocation Effect

| | | Competitive advantage | |
|----------------|---------------------|--|--|
| | | Disadvantage (-) | Advantage (+) |
| Specialization | Specialized (+) | $(g_{ij} - g_{rs}) < 0$ $(T_{ij}^0 - T_{ij}^0(T_{rs}^0/T_s^0)) > 0$ (D,S) | $(g_{ij} - g_{rs}) > 0$ $(T_{ij}^0 - T_{ij}^0(T_{rs}^0/T_s^0)) > 0$ (A,S) |
| | Not-specialized (-) | $(g_{ij} - g_{rs}) < 0$ $(T_{ij}^0 - T_{ij}^0(T_{rs}^0/T_s^0)) < 0$ (D,N) | $(g_{ij} - g_{rs}) > 0$ $(T_{ij}^0 - T_{ij}^0(T_{rs}^0/T_s^0)) < 0$ (A,N) |

Source: adapted from Herzog and Olsen (1977).

This classification can be used for policy recommendations towards the different regions. A possible interpretation of this classification could be:

- (A,S) indicates those origin regions which seem to be the destination natural markets.
- (D,S) signs regions in which the destination had a strong position but in which it is loosing market share. It may indicate some degree of obsolescence and the need of repositioning the destination.
- (A,N) indicates markets in which the destination had a small market share, but in which it is performing above the region. Hence

it suggests that those origins are emerging markets for the destination.

- (D,N) refers to origins in which the results are poor. It may indicate the need of a complete re-planning of the destination if there is an interest to attract tourists from that origin.

2.4 Results of the Study

The results are presented divided into three parts following the chapter's objectives. The first section presents the results of CR analysis that measures the external competitiveness and, combined with its dynamic analysis, classify Thailand and other Southeast Asian countries' tourism as competitive or not competitive. Section 2.4.2 discusses the results of revealed comparative advantage which shed light on the tourism specialization position of the considered countries. The last section presents the result of the SSA which decomposes the growth rate of inbound tourist arrivals providing an understanding of the role of competitive advantage and region of origin specialization.

2.4.1 Overall external competitiveness

Table 2.7 presents the assessment of the overall tourism external competitiveness of Southeast Asian countries. The first 4 columns display the CR in each year, which is used to analyze the tourism competitive advantage of each country. If $CR > 1$, it means that the country has competitive advantage in tourism as the ratio of tourism regional exports is higher than the ratio of tourism imports. The dynamic analysis considering the change in CR, export market share and import market share are presented in columns 5-7. Finally, the last columns used Sahli (2006) approach to classify the country as competitive (✓) or not competitive (✗) in tourism. As described in the methodological section, a country is considered competitive if it fulfills 2 conditions: positive growth of market share in tourism export and $CR > 1$.

Table 2.7 Overall External Competitiveness in Tourism, 1999-2008

| Destination | CR | | | | Growth in CR | Growth in export market share | Growth in import market share | Competitive in tourism |
|-----------------------|------|------|------|------|--------------|-------------------------------|-------------------------------|------------------------|
| | 1999 | 2002 | 2005 | 2008 | | | | |
| Cambodia | 4.14 | 8.47 | 6.15 | 7.97 | 0.90 | 1.38 | 0.25 | ✓ |
| Laos | 3.81 | 4.71 | 6.46 | 4.16 | 0.09 | 0.40 | 0.28 | ✓ |
| Thailand | 1.80 | 1.96 | 2.06 | 2.86 | 0.45 | 0.07 | -0.26 | ✓ |
| Malaysia | 1.00 | 2.24 | 1.90 | 1.57 | 0.42 | 0.77 | 0.25 | ✓ |
| Indonesia | 1.02 | 1.16 | 0.86 | 0.80 | -0.19 | -0.30 | -0.13 | ✗ |
| Philippines | 0.87 | 0.75 | 1.25 | 0.74 | -0.14 | -0.60 | -0.53 | ✗ |
| Singapore | 0.57 | 0.26 | 0.29 | 0.31 | -0.34 | -0.13 | 0.32 | ✗ |
| Myanmar ^{1/} | 4.87 | 2.96 | 3.42 | - | -0.63 | -0.51 | -0.14 | ✗ |

Source: Calculate from International Monetary Fund and ^{1/} Ministry of Hotels and Tourism of Myanmar data.

In order to understand this table, the case of Cambodia has been considered as an example. The CR of Cambodia during 1999-2008 is greater than 1 which implies that Cambodia has competitive advantage in tourism in the sense that it has a tourism surplus relative to the Southeast Asian region. During that time, the growth of export market share had higher contribution to change in CR than in the growth of import market share. Moreover, the positive growth of export market share and a CR value higher than 1 indicate that Cambodia is committed to tourism exports and it can be considered as competitive in tourism following Sahli (2006) definition.

This table indicates that Cambodia, Laos, Thailand and Malaysia had competitive advantage with $CR > 1$ for all period and with an increase in CR during 1999-2008. Cambodia had the highest competitive advantage, and its CR almost doubled during that period from 4.14 in 1999 to 7.97 in 2008. Cambodia has unique tourism resources such as the world heritage sites of Angkor Wat, Angkor Thum. Moreover, the investment to develop and improve tourist facilities and infrastructures such as hotels, airport, roads, etc. in this country has also contributed to an increase of Cambodia competitive advantage.

It is remarkable the case of Thailand, where the increase in CR is explained by the shrinking of import market share being greater than the growth in export market share.

The last column of this table reveals that Cambodia, Laos, Thailand and Malaysia can also be classified as tourism competitive destinations. On the other hand, Indonesia, Philippine, Singapore and Myanmar, with a negative growth of tourism exports should be classified as non tourism competitive destinations.

It is also remarkable that the results of Singapore (that in 1996 established its tourism vision to be the “Tourism capital in Asia”) indicate that it has no tourism competitive advantage and it is classified as not competitive in tourism. It should also be indicated that in the past decade, Singapore concentrated its efforts in information technology with the aim of becoming the trade, communications, and financial center of Southeast Asia. Moreover, considering the 2008 exports of Singapore, the petroleum and electronic products export value is 8 times greater than tourism receipts.

2.4.2 Tourism specialization

The previous section has analyzed the tourism exports and imports pattern of the Southeast Asian region in order to understand each country’s external competitiveness. This section focuses on comparing the weigh of tourism exports for each country, as compared with all exports in order to understand tourism specialization.

Table 2.8 presents the results of the 2 proposed indicator of revealed competitive advantage for the Southeast Asian countries in 1999 and 2008. These indices examine the countries’ tourism specialization, if $BRCA > 1$ or $NRCA > 0$ the country has tourism specialization. The rank column represents the tourism specialization position of that country in the Southeast Asian region using NRCA for the country comparison. The tourism export situations patterns for the period during 1999-2008 as described in Table 2.5 is presented in the last column.

Table 2.8 Tourism Specialization, 1999-2008

| Destination | 1999 | | | 2008 | | | Change in tourism specialization | Tourism export situations |
|-------------|--------|---------|------|--------|---------|------|----------------------------------|---------------------------|
| | BRCA | NRCA | Rank | BRCA | NRCA | Rank | | |
| Thailand | 1.8382 | 0.0074 | 1 | 1.8363 | 0.0071 | 1 | Decrease | Follow retreat |
| Malaysia | 0.6980 | -0.0036 | 6 | 1.4019 | 0.0037 | 2 | Increase | Retreat |
| Cambodia | 2.7851 | 0.0003 | 4 | 4.0456 | 0.0008 | 3 | Increase | Retreat |
| Laos | 3.2634 | 0.0001 | 5 | 3.8903 | 0.0002 | 4 | Increase | Retreat |
| Indonesia | 1.4559 | 0.0032 | 2 | 1.0047 | 0.0000 | 5 | Decrease | Follow retreat |
| Philippines | 1.2769 | 0.0013 | 3 | 0.9091 | -0.0002 | 6 | Decrease | Follow retreat |
| Singapore | 0.6209 | -0.0072 | 7 | 0.5108 | -0.0088 | 7 | Decrease | Follow retreat |
| Myanmar | 1.9580 | 0.0002 | - | - | - | - | - | - |

Source: Calculated from International Monetary Fund data (2008).

BRCA and NRCA indexes robustly prove that in 1999 only Singapore and Malaysia had no tourism specialization. For 2008, Malaysia gained tourism specialization; whereas Philippines lost its tourism specialization, and Singapore remains as not specialized in tourism.

As described in the methodology, NRCA must be used for country comparison in order to overcome the asymmetry problem of BRCA. This comparison showed that Thailand has the highest tourism specialization in Southeast Asia for both years; however its tourism specialization had slightly decreased probably due to declining the service quality, the intense competition from countries in the region and the political instability that particularly affected the country. Tourism specialization in Singapore, Indonesia and Philippines had also decreased. On the other hand, tourism specialization in Malaysia had increased remarkably in the period 1999-2008. As the table proves, Malaysia's ranking in tourism specialization improved from 6th in 1999 to 2nd in 2008. While Laos and Cambodia climb one position in the tourism specialization ranking.

The increase in Malaysia's tourism specialization may partly be a result of both, the intensive advertising campaign "Malaysia Truly Asia", and the development and independent promotion of other Malaysian islands as tourist destinations. However, the length of stay in Malaysia remains remarkably shorter than in Thailand.

The decreasing of tourism specialization of Singapore can be related with the shift of its focus to trade communications and financial market specialization. During the last decade, Indonesia has been negatively affected by natural disasters. Finally, Philippines suffered from internal terrorism attacks and an increase in the severity of tropical storms, maybe related with climate change. These caused the decreasing of tourism specialization in both latter countries.

The last column in Table 2.8 presents the results from dynamic-BRCA described in equation (4). As shown in Table 2.5, the comparison of the three dynamic components can be used to describe six tourism exports situations for the period under analysis. In this sense, the results show the growth rate of the share of tourism exports in Thailand. Indonesia, Philippines, and Singapore fell faster than the growth rate of Southeast Asian region's share of tourism exports. Hence, these countries were under the *follow retreat* situation which reflects a downtrend in tourism specialization. Malaysia, Cambodia and Laos were under *retreat* situation since their growth rates in tourism export decreased at a slower rate than the Southeast Asia. As the table shows, these countries improved their tourism specialization.

Once the revealed comparative advantage has been used to classify the tourism specialization of each destination, the next step is to obtain a decomposed analysis of the dynamic of tourist arrivals to each of the countries.

It should be noted that objectives 1 and 2 used tourism and total exports value, while the SSA is performed with the number of tourist arrivals.

2.4.3 Shift-share analysis results

Table 2.9 uses the methodology described in equation (9) to decompose the growth of tourist arrivals from seven origin regions to each Southeast Asian country into 4 factors which are the area-wide effect, region-mix effect, competitive effect and allocation effect.

Table 2.9 The Components of Tourist Arrivals Growth During 1999-2008 (%)

| Destination (Area-wide effect = 92.54) | Growth Rate | Competitive effect | Allocation effect | Components of allocation effect |
|---|--------------------|-------------------------------|------------------------------|--|
| Southeast Asian market (Region-mix effect = 40.49) | | | | |
| Cambodia | >1,000 | >1,000 | <-1,000 | A, N |
| Indonesia | 52.18 | -79.24 | -1.62 | D, S |
| Laos | 188.05 | 28.82 | 26.19 | A, S |
| Malaysia | 179.67 | 23.67 | 22.96 | A, S |
| Myanmar/ | 30.08 | -204.77 | 101.82 | D, N |
| Philippines | 79.78 | -311.39 | 258.13 | D, N |
| Singapore | 60.58 | -86.30 | 13.84 | D, N |
| Thailand | 113.03 | -35.35 | 15.34 | D, N |
| Vietnam | 208.20 | 304.76 | -229.60 | A, N |
| South Asia market (Region-mix effect = 116.83) | | | | |
| Cambodia | 661.56 | >1,000 | <-1,000 | A, N |
| Indonesia | 310.61 | 411.64 | -310.40 | A, N |
| Laos | -59.41 | -653.85 | 385.07 | D, N |
| Malaysia | >1,000 | >1,000 | <-1,000 | A, N |
| Myanmar/ | 69.53 | -120.53 | -19.31 | D, S |
| Philippines | 60.06 | -331.65 | 182.34 | D, N |
| Singapore | 130.05 | -32.62 | -46.70 | D, S |
| Thailand | 143.76 | -50.33 | -15.28 | D, S |
| Vietnam | - | - | - | - |
| East Asia market (Region-mix effect = -39.51) | | | | |
| Cambodia | 775.90 | 954.19 | -231.32 | A, N |
| Indonesia | 24.75 | -29.26 | 0.98 | D, N |
| Laos | 279.11 | 881.91 | -655.83 | A, N |
| Malaysia | 155.45 | 297.24 | -194.83 | A, N |
| Myanmar/ | -12.63 | -44.04 | -21.62 | D, S |
| Philippines | 61.99 | 6.09 | 2.87 | A, S |
| Singapore | 23.32 | -26.57 | -3.14 | D, S |
| Thailand | 20.46 | -24.97 | -7.60 | D, S |
| Vietnam | 117.93 | 37.17 | 27.72 | A, S |
| Oceania market (Region-mix effect = -13.68) | | | | |
| Cambodia | 777.89 | >1,000 | -543.80 | A, N |
| Indonesia | -17.16 | -43.21 | -52.81 | D, S |
| Laos | 152.16 | 190.39 | -117.09 | A, N |
| Malaysia | 215.93 | 385.02 | -247.95 | A, N |
| Myanmar/ | 44.57 | -88.47 | 54.18 | D, N |
| Philippines | 94.48 | 20.61 | -4.99 | A, N |
| Singapore | 69.53 | -6.27 | -3.05 | D, S |
| Thailand | 130.32 | 70.45 | -18.98 | A, N |
| Vietnam | 246.20 | 239.94 | -72.60 | A, N |
| Europe market (Region-mix effect = -11.90) | | | | |
| Cambodia | 658.79 | 516.29 | 61.86 | A, S |
| Indonesia | 24.71 | -54.64 | -1.29 | D, S |
| Laos | 146.13 | 85.53 | -20.04 | A, N |
| Malaysia | 227.62 | 555.22 | -408.24 | A, N |
| Myanmar/ | -20.81 | -56.95 | -44.50 | D, S |
| Philippines | 9.81 | -77.16 | 6.32 | D, N |
| Singapore | 26.09 | -53.41 | -1.15 | D, S |
| Thailand | 88.24 | 4.52 | 3.07 | A, S |
| Vietnam | 172.67 | 102.15 | -10.12 | A, N |
| The Americas market (Region-mix effect = -38.44) | | | | |
| Cambodia | 465.45 | 276.17 | 135.18 | A, S |
| Indonesia | 28.93 | -41.21 | 16.03 | D, N |
| Laos | 136.83 | 105.78 | -23.05 | A, N |
| Malaysia | 182.78 | 553.00 | -424.33 | A, N |
| Myanmar/ | 26.75 | -28.22 | 0.86 | D, N |
| Philippines | 28.24 | -6.95 | -18.91 | D, S |
| Singapore | 13.76 | -41.80 | 1.46 | D, N |
| Thailand | 52.68 | -1.37 | -0.06 | D, S |
| Vietnam | 72.78 | 9.11 | 9.56 | A, S |

Table 2.9 (Cont.)

| Destination (Area-wide effect = 92.54) | Growth Rate | Competitive effect | Allocation effect | Components of allocation effect |
|---|--------------------|---------------------------|--------------------------|--|
| Meddle East & Africa market (Region-mix effect = -44.30) | | | | |
| Cambodia | 464.10 | >1,000 | <-1,000 | A, N |
| Indonesia | -20.01 | -124.00 | 55.74 | D, N |
| Laos | 368.55 | >1,000 | <-1,000 | A, N |
| Malaysia | 56.07 | 4.46 | 3.37 | A, S |
| Myanmar | 10.74 | -188.96 | 151.45 | D, N |
| Philippines | 23.02 | -9.87 | -15.35 | D, S |
| Singapore | 19.14 | -46.71 | 17.61 | D, N |
| Thailand | 93.35 | 56.77 | -11.67 | A, N |
| Vietnam | - | - | - | - |

Note: A is competitive advantage, D is competitive disadvantage, S is specialization and N is not specialization.

Source: Analysis of data from Pacific Asia Travel Association (2008).

In order to interpret these results, lets take the case of tourist arrivals from the Southeast Asian region to Thailand as an example. The results in Table 2.9 show that, during 1999-2008 tourist arrivals from Southeast Asia to Thailand grew 113.03%. Following equation (9) the first element of the decomposition is the area-wide effect (the growth of total tourist arrivals to Southeast Asian) which has been 92.54% for the analyzed period. The difference between these two percentages must be attributed to the other three effects described below.

The positive region-mix effect (40.49%) indicates that the growth rate of intra-Southeast Asian tourist arrivals was higher than the growth rate of total tourist arrivals to Southeast Asian countries.

The negative competitive effect (-35.35%) indicates that Thailand's growth rate in tourist arrivals from Southeast Asia grew less than total intra-Southeast Asian tourist arrivals. This implies that Thailand loses market share of Southeast Asian tourists.

Finally, the positive allocation effect (15.34%) is presented in the last column of Table 2.9. As will be explained in detail in the following paragraphs, this is the result of multiplying two negative values, indicating that Thailand does not have competitive advantage and it is not specializing in attracting tourist from Southeast Asian countries.

The result in Table 2.9 shows that intra-regional tourism and tourist arrivals from South Asia had higher growth rate than aggregated world tourist arrivals to Southeast Asia, with region-mix effect at 40.49% and 116.83%, respectively. For each destination country and each origin region, the table presents the corresponding disaggregation of the effects which can be analyzed as in the above example.

Once all the SSA coefficients are calculated, a more precise analysis of the allocation effect can be performed. This allows a precise understanding of the position of each country in each of the origin countries by means of the comparison of comparative advantage and regional specialization as presented in Table 2.6.

Table 2.10 summarizes the two components with a ✓ sign indicating that the country has competitive advantage or regional specialization, and ✗ sign indicating the opposite.

Table 2.10 The Role of Competitive Advantage and Specialization in Tourist Arrivals Growth During 1999-2008

| Destination | Region of origin | | | | | | | | | | | | | |
|-------------|------------------|---|------------|---|-----------|---|---------|---|--------|---|--------------|---|----------------------|---|
| | Southeast Asia | | South Asia | | East Asia | | Oceania | | Europe | | The Americas | | Middle East & Africa | |
| | CA | S | CA | S | CA | S | CA | S | CA | S | CA | S | CA | S |
| Cambodia | ✓ | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |
| Indonesia | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✓ | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| Laos | ✓ | ✓ | ✗ | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ | ✗ |
| Malaysia | ✓ | ✓ | ✓ | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ | ✓ |
| Myanmar | ✗ | ✗ | ✗ | ✓ | ✗ | ✓ | ✗ | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |
| Philippines | ✗ | ✗ | ✗ | ✗ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✓ | ✗ | ✓ |
| Singapore | ✗ | ✗ | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |
| Thailand | ✗ | ✗ | ✗ | ✓ | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |
| Vietnam | ✓ | ✗ | ✗ | ✗ | ✓ | ✓ | ✓ | ✗ | ✓ | ✗ | ✓ | ✓ | ✗ | ✗ |

Note: CA is competitive advantage and S is specialization. The sign ✓ indicates that there is either competitive advantage or specialization. The sign ✗ indicates that there is competitive disadvantage or not-specialization.

The result in Table 2.10 reveals that the only region for which Thailand has both, competitive advantage and regional specialization is Europe. While it has also competitive advantage in Oceania and Middle East & Africa markets, and it is specializing in South Asia, East Asia and The Americas markets.

Some other results are also remarkable: Cambodia and Malaysia had competitive advantage in terms of attracting tourists from all regions. In the case of Vietnam, positive competitive advantage and specialization helped to attract tourists from East Asia and The Americas. This bi-positive case also happens from Southeast Asia and Middle East & Africa for Malaysia, and from Europe and The Americas to Cambodia. This implies that Vietnam, Malaysia and Cambodia are powerful competitors in each of those origin regions.

2.5 Conclusions

This chapter of this thesis aims to present a general picture of the tourism industry profile as an exporting industry in Thailand, as compared with its regional competitors considering both the static situation and the dynamics over the last decade. This will help to understand the general context in which the rest of the chapters of the thesis are developed, and shed light into the change in the competitive environment in which Thailand's tourism is embodied. This general aim is subdivided into 3 main related objectives.

The first objective involves computing the coverage ratio (CR) in order to examine and compare Thailand's external competitiveness, described by Sahli (2006) as the country's competitive ability to retain or increase its market share of tourism export. The result of this section shows that Thailand has competitive advantage in tourism in the sense that it has tourism trade surplus relative to the Southeast Asian region, and that it can be classified as competitive in tourism.

The second objective applies different indicators of revealed comparative advantage in tourism for Thailand and its competitors. Thus, the ratio between tourism and total exports is compared for the different countries in the region. BRCA and NRCA are used to assess each country tourism specialization. While only NRCA can be used to make a cross country comparison. This analysis shows that Thailand has the highest tourism specialization as compared to other tourism destinations in the Southeast Asian Region. A dynamic-BRCA is also performed to understand the pattern of the revealed comparative advantage during last

decade. The results proved that Thailand's tourism specialization decreased during 1999-2008, and it can be classified under the *follow retreat* situation. It means that the growth rate of tourism in Thailand fell faster than the also negative evolution of total tourism in the Southeast Asian region.

The final objective is to use SSA to decompose the growth of tourist arrivals into its different components which helps to understand with higher precision the evolution of tourist arrivals to the Southeast Asian region. The comparison of the region-mix effect indicates that intra-regional tourism and South Asia arrivals to Southeast Asia were growing above the aggregated, being the latter region the most dynamic. However, Thailand was losing market share in the intra-regional tourism (negative competitive effect).

Continuing with the SSA analysis, a precise understanding of the role of each origin regions into each destination country is provided by the analysis of the allocation effect. These results prove that Europe is particularly relevant for Thai tourism, as it is the only origin in which it has both competitive advantage and specialization. On the other hand, Thailand is not positioned correctly in the Southeast Asian market, in which it is neither specialized, nor has competitive advantage.

Moreover, Thailand has not specialization in Oceania, Africa and the Middle East, but the competitive advantage indicates that they are emerging markets. Finally, some repositioning is required for South Asia, East Asia and The Americas markets, as Thailand was specialized in those origins at the beginning of the last decade, but the dynamic behavior indicates that it lost competitive advantage.

The comparison of the allocation effect among the Southeast Asian destinations can be used to indicate which destinations have both, competitive advantage and specialization in each origin region. Hence, those with the major competitors for each origin region. In this sense, Thailand had to face competition

for Southeast Asian tourists with Malaysia, Cambodia and Vietnam. Thai's competitor for East Asia and The Americas tourists is Vietnam; whereas the main competitor for the European market is Cambodia. Finally, for African & Middle East tourists, Malaysia would be the most serious threat.

The above results show that although Thailand was the leading tourism country in Southeast Asia, its tourism specialization decreased compared to other countries in the region. In addition, Thailand is not correctly positioned in the intra-regional Southeast Asian market.

Several policy recommendations can be derived from the analysis presented. The main one is that Thailand should intensify its efforts in the growing intra-regional tourism, taking advantage of its central geographical position. Given the growing arrivals trend in other countries of the region it would be advisable to build alliances and foster intra-regional collaboration on issues such as multi-destination design, taking advantage of potential complementarities. Finally, the identification of the main competitors for each origin region provides useful information to the public organizations with tourism responsibilities. As an example of the latter, response campaigns could be designed in particular origins when the potential competitors implement promotional activities.

Some of the presented figures have indicated some areas for future research as the understanding and forecast of intra-tourism in Southeast Asia.

2.6 References

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Chapter III

Thailand's Long-run Tourism Demand Elasticities

3.1 Introduction

Tourism demand remains as one of the most analyzed topics in tourism literature (Li, Song and Witt, 2005; Song and Li, 2008; Song, Witt and Li, 2009; Song *et al.*, 2010b). These studies have contributed to the development of theories and applications that help to forecast and understand tourist's behavior. We may classify the quantitative papers into two groups, the first focuses on the techniques in order to improve demand forecasting accuracy. Among the applications of these studies we can highlight its contribution for planning and implementing policies on the supply side (capacity needs, transport infrastructure, etc.) through improved estimates of future demand, or identification of attractive potential markets. The second group is mainly concerned about estimating the elasticity of tourism demand, especially long-run elasticity. This type of research is useful for understanding the effects of policies or events that may affect tourism demand determinants (Song, Kim and Yang, 2010a).

Price elasticity is crucial information for any tourism planning, since price is an important component of tourism competitiveness (Dwyer, Forsyth and Rao, 2000; World Economic Forum, 2009). Similarly, income elasticity gives useful information about the tourists' perceptions regarding the destination's type of product. In this sense, past studies showed that in many cases tourism demand has an income elasticity greater than one, hence tourism is classified as a luxury good (Li, Song and Witt, 2005; Song and Li, 2008; Song, Kim and Yang, 2010a). As tourism demand elasticity may change over time it is reasonable to test that possibility considering time varying parameters (Li, Song and Witt, 2006a; Li *et al.*, 2006b; Song, Witt and Li, 2009).

The literature shows that price and income elasticities are usually higher for the long-run than for the short-run (Syriopoulos, 1995; Song and Witt, 2000; Song, Witt and Li, 2003, Song, Witt and Li, 2009). These findings confirm the hypothesis that information asymmetry and inflexibility of consumers' income allocation may result in delays on demand impacts derived from changes in prices and wealth (Syriopoulos, 1995; Song, Witt and Li, 2009). Moreover, due to the heterogeneous nature of tourism demand, elasticities are likely to vary among tourists' countries of origin (Song, Witt and Li, 2003; Narayan, 2004; Habibi and Rahim, 2009; Song, Kim and Yang, 2010a).

Different data frequencies are used in tourism demand studies. Regarding forecasting, the use of higher frequency data is considered to improve the reliability and forecasting accuracy (Song and Li, 2008; Song, Kim and Yang, 2010a). However, there is scarcity of studies that compare the effects of applying different frequencies on tourism elasticities analysis.

Song, Witt and Li (2003) is the only paper published in the tourism literature analyzing Thailand's tourism elasticities. However, there are other applications in the general economic literature (Vogt and Wittayakorn, 1998; Chaiboonsri, Chaitip and Rangaswamy, 2009; Chaitip and Chaiboonsri, 2009; Chaiboonsri *et al.*, 2010; Kraipornsak, 2011). In all cases the results suggest that there are differences in the estimated elasticities for different origin markets which justify the advantage of using a large number of countries extend the number of countries considered as origins. Moreover, in most published papers in the general literature there are discrepancies in the definition of the variables as compared with the standards used in the tourism literature. This may explain some of the strange values obtained, as it is the case of positive price elasticities. Table 3.1 presents a summary of the previous tourism elasticity estimates.

Table 3.1 Studies on Thailand's Long-run Tourism Demand

| Study | Country of origin | Methodology | Demand elasticities | | |
|----------------------------------|-------------------|-----------------|---------------------|----------------|------------|
| | | | Income | Price | Cross |
| Vogt and Wittayakorn (1998) | Overall | Co-integration | 1.93 | -0.89 | - |
| Song, Witt and Li (2003) | Singapore | ARDL, | - | -5.75 | 4.00 |
| | Malaysia | Co-integration | - | - | 0.24 |
| | Japan | and ECM | - | -0.71 | 0.77 |
| | South Korea | | 2.05 | - | -2.90 |
| | U.K. | | 4.92 | -0.41 | 0.56 |
| | U.S. | | - | -1.62 | -0.37 |
| | Australia | | 3.52 | -3.58 | 4.10 |
| Chaiboonsri <i>et al.</i> (2010) | Overall | Panel | 1.46 to 2.05 | -0.14 to -0.22 | - |
| | Malaysia | Co-integration, | 0.68 | 0.18 | - |
| | Japan | OLS, DOLS, | 0.26 | - | - |
| | Korea | FMOLS | 3.07 | - | - |
| | China | | 2.14 | -0.71 | - |
| | Singapore | | - | 0.20 | - |
| | Taiwan | | - | -0.19 | - |
| Kraipornsak (2011) | Australia | ARDL model | 2.72 | - | - |
| | France | and ECM. | 0.99 | - | -3.57 (S) |
| | Germany | Two substitute | 1.64 | - | 5.68 (M) |
| | India | destination: | 0.74 | 1.58 | -7.33 (S), |
| | | Singapore (S) | | | 7.87 (M) |
| | Japan | Malaysia (M) | 0.96 | - | - |
| | Korea | | - | - | - |
| | Malaysia | | - | 3.40 | - |
| | Singapore | | - | 10.21 | -6.80 (M) |
| | South Africa | | - | - | - |
| U.S. | | 1.62 | -2.12 | - | |

This chapter of the thesis aims to extend the comprehension of Thailand's long-run tourism demand with three main objectives. The first objective is to estimate the long-run elasticity of Thailand's tourism demand for each major foreign market considering the definition of the variables consolidated in the tourism literature. An specific analysis of the competitors was performed for each origin country in order to improve the estimated cross price elasticity. The second objective is to compare the long-run elasticity using annual versus monthly data (adjusted by seasonality) for the same period. The main contribution of this part is the comparison of elasticity estimates obtained with different frequencies. The final objective is to study if there was a structural change after the 1997 economic crisis and the modification of the exchange rate from a fixed-exchange (linked to U.S. Dollars) to a flexible-exchange rate policy. Those events not only had a significant impact on Thai economy as a whole (Song, Witt and Li, 2003), but

also strongly affected the tourism industry which became recognized as one of the important activities for reviving the economy and earning foreign currency.

3.2 Variables Definition and Model Specification

3.2.1 Variables and data

The model used in this study is based on the direct demand theory which assumed that tourism demand is a function of the income of potential consumers, the prices at destination and the prices at substitute destinations. The number of tourist arrivals is frequently chosen as the dependent variable (Crouch, 1994; Song and Li, 2008; Song, Witt and Li, 2009). Gross domestic product (GDP) and GDP per capita have often been used as proxies for foreign tourists' income (Song, Witt and Li, 2003; Narayan, 2004; Song, Witt and Li, 2009; Habibi and Rahim, 2009). In this study GDP per capita is used to represent income as it reflects purchasing power of each country. Regarding the price variable, real exchange rate is considered to be the best alternative (Song and Li, 2008; Habibi and Rahim, 2009; Song, Witt and Li, 2009). This variable is constructed as follows:

$$RPT_{i,t} = \frac{CPI_{T,t}}{CPI_{i,t} * ER_{i/T,t}} \quad (1)$$

where $RPT_{i,t}$ is Thailand's relative price in relation to country i in year t , $CPI_{T,t}$ is Thailand's CPI (2005 as base year), $CPI_{i,t}$ is CPI of origin i (2005 as base year) and $ER_{i/T,t}$ is average nominal exchange rate between the currency of country i and Thai Baht. The eleven origin countries ($i=1, \dots, 11$) are the main tourism origin markets for Thailand: Malaysia, Singapore, Japan, South Korea, China, France, Germany, U.K., U.S., India, and Australia.

Similarly the prices of substitute destinations will also be measured using the real exchange rate defined in equation 1 (Habibi and Rahim, 2009; Song, Witt and Li, 2009). In this study, five countries are regarded as general substitutes for Thailand: Indonesia and Philippines as substitutes for sea, beach and diving products, Singapore and Hong Kong as substitutes for entertainment,

amusement parks, man-made attractions, and shopping. Finally, Malaysia is considered as a substitute for natural and cultural attractions categories. However, tourists from countries as Singapore, Malaysia, U.K. and the U.S. are likely to have remarkable differences in their cultural background and main purpose of visit. Hence, in this study a different set of Thailand's substitutes has been defined for each country of origin (as shown in Table 3.2). In order to create this set of substitutes, it has been tested that the inclusion of any potential country improves the significance of the relative price average.

Table 3.2 Substituting Destinations for Each Country of Origin

| Country of origin | Substituting countries |
|-------------------|---|
| Malaysia | Indonesia, Philippines, Singapore, Hong Kong, South Korea, and China |
| Singapore | Philippines, Hong Kong, South Korea, and China |
| Japan | Indonesia, Philippines, Singapore, Hong Kong, South Korea, and China |
| South Korea | Indonesia, Philippines, Singapore, Hong Kong, Malaysia, and China |
| China | Indonesia, Philippines, Singapore, Hong Kong, Malaysia, and South Korea |
| France | Indonesia, Philippines, Singapore, Hong Kong, and Malaysia |
| Germany | Indonesia, Philippines, Singapore, Hong Kong, and Malaysia |
| U.K. | Indonesia, Philippines, Singapore, Hong Kong, and Malaysia |
| U.S. | Indonesia, Philippines, Singapore, and Malaysia |
| India | Indonesia, Philippines, Singapore, and Malaysia |
| Australia | Indonesia, Philippines, Singapore, Hong Kong, and Malaysia |

Log-linear functional form is commonly used in tourism demand studies as the elasticities can be directly obtained from the model's coefficients (Song, Witt and Li, 2009; Song, Kim and Yang, 2010a), and it also contributes to the variance stationarity (Enders, 2004; Studenmund, 2006). Hence, Thailand's tourism demand model is presented below:

$$\ln NTA_{i,t} = \beta_{0i} + \beta_{1i} \ln Y_{i,t} + \beta_{2i} \ln RPT_{i,t} + \beta_{3i} \ln RPS_{i,t} + \varepsilon_{i,t} \quad (2)$$

where $\ln NTA_{i,t}$ is the natural logarithm of tourist arrivals from country i in year t , $\ln Y_{i,t}$ is the natural logarithm of GDP per capita of country i , $\ln RPT_{i,t}$ is the natural logarithm of Thailand's real exchange rate, $\ln RPS_{i,t}$ is the natural logarithm of competitors' real exchange rate, β coefficients are the elasticities to be estimated and $\varepsilon_{i,t}$ is the error term.

This study uses data from 1985 to 2009 with both yearly and monthly frequencies. The latter has been adjusted for seasonality using X12-ARIMA. Due to lack of disaggregated data, the monthly GDP per capita is assumed to remain constant for every month of a particular year. Tourist arrivals was obtained from the Tourism Authority of Thailand (1985-2007) and the Ministry of Tourism and Sports (2008-2009). Data on GDP per capita, CPI, and foreign exchange rates were obtained from the International Monetary Fund's international financial statistics website.

3.2.2 *Estimating the long-run relationship*

There are a number of techniques developed for estimating the long-run relationships with a single equation, such as the Autoregressive Distributed Lag (ARDL) (Pesaran and Shin, 1995), the Dynamic Ordinary Least Squares (DOLS) (Stock and Watson, 1993), and the Fully Modified Ordinary Least Squares (FMOLS) (Philips and Hansen, 1990). ARDL and DOLS are usually preferred to the semi-parametric FMOLS which has the assumption of no co-integration between independent variables of the model that is often not valid in practice.

ARDL and DOLS, are both parametric techniques with different advantages and disadvantages. Panopoulou and Pittis (2004) proved that the ARDL perform better than DOLS, both in terms of estimation precision and reliability of statistical inferences. However, DOLS has been frequently used to test the robustness of ARDL giving similar coefficients (Narayan and Narayan, 2005; Habibullah and Baharom, 2008; Ibrahim, Padli and Baharom, 2009). On the other hand, under the case of regressor's endogeneity, DOLS gives more reliable coefficients than ARDL, since DOLS controls for this bias by adding leads and lags variables. Moreover, the results from DOLS are also found to be more consistent with those estimated using Maximum Likelihood (ML) estimation (Ibrahim, Padli and Baharom, 2009). Finally, as the application of ARDL requires estimating at least 9 coefficients (Hair *et al.*, 1998; VanVoorshis and Morgan, 2007). This chapter applies DOLS which is excessive for the available dataset.

Stock and Watson (1993) introduced the method of dynamic OLS (DOLS) in the estimation of long-run relationships in which the problem of simultaneity bias of variables could be presented. The method can also be used when variables are stationary with different order of integration, but co-integration must exist. Stock and Watson (1993) proposed that the problem of simultaneity bias and natural bias due to small size of sample may be solved by adding lags (-q) and leads (r) of the independent variables. This approach is similar to the estimating method proposed by Phillips and Loretan (1991) and Saikkonen (1991), but it is more convenient and easier to use in estimating coefficients of long-run relations (Masih and Masih, 1996; Narayan and Narayan, 2005; Habibullah and Baharom, 2008; Ibrahim, Padli and Baharom, 2009). Moreover, DOLS allows the improvement of standard errors robustness by White (1980) or Newey and West (1987) corrections (Narayan and Narayan, 2005).

Equation 2 can be rewritten in matrix format as follow:

$$\ln NTA_{i,t} = B_i'X_{i,t} + \sum_{j=-q}^r \delta' \Delta X_{i,t-j} + v_{i,t} \quad (3)$$

with the vectors of coefficients $B_i = [\beta_{0i}, \beta_{1i}, \beta_{2i}, \beta_{3i}]$ and the matrix of variables $X_{i,t} = [1, Y_{i,t}, RPT_{i,t}, RPS_{i,t}]$ (Masih and Masih, 1996; Ibrahim *et al.*, 2009). OLS can be used to estimate Equation 3 and the results should be equivalent to ML (Narayan and Narayan, 2005).

The third objective of this chapter is to study if Thailand's 1997 economic crisis and the changes in its foreign exchange rate policy generated a structural change in long-run tourism demand. A long-run static model of time varying parameter (TVP-LRM) in the form of state space (SS) is used for this purpose with Kalman filter algorithm to estimate the model's coefficients (Li, Song and Witt, 2006; Song, Witt and Li, 2009). The equation (2) can be rewritten in the form of state space as follows:

$$\ln \text{NTA}_{i,t} = \beta_{0i} + \beta_{1i} \ln Y_{i,t} + \beta_{2i} \ln \text{RPT}_{i,t} + \beta_{3i} \ln \text{RPS}_{i,t} + \varepsilon_{i,t} \quad (4a)$$

$$\beta_{ji,t} = \beta_{ji,t-1} + \eta_{i,t} \quad ; j = 1, 2, 3; i = 1, 2, \dots, 11; t = 1985-2009 \quad (4b)$$

$\beta_{ji,t}$ represent unobservable vectors called state vectors, while $\varepsilon_{i,t}$ and $\eta_{j,t}$ are Gaussian disturbances, which are serially independent and independent of each other at all times. The two error terms are distributed as $\varepsilon_{i,t} \sim N(0, H_{i,t})$ and $\eta_{i,t} \sim N(0, Q_{i,t})$, respectively. Matrixes $H_{i,t}$ and $Q_{i,t}$ are initial variation values and are assumed to be known. Equation 4a is the observation equation while equation 4b is the state equation with the assumption that $\beta_{ji,t}$ is a multivariate random walk with a distribution $\beta_{ji,t} \sim N(\tau_{li}, P_{li})$. $\beta_{ji,t}$ and τ_{li} can be estimated using ML (Song and Witt, 2000; Li, Song and Witt, 2006; Song, Witt and Li, 2009).

3.3 Empirical Result

The empirical results of this study are presented in two parts. First part covers the two initial objectives of the chapter by presenting the results of Thailand's elasticities and the comparison of the results from different data frequencies. Second part presents the test of structural change for the year 1997 due to the economic crisis and the change in the foreign exchange rate policy.

3.3.1 Thailand's long-run tourism demand

The empirical analysis presented in this section starts testing the stationarity of the variables proposed in the above section. KPSS-test (Kwiatkowski *et al.*, 1992) is used for testing stationarity of non-seasonal data (yearly data). Monthly data stationarity is tested using the HEGY-test (Hylleberg *et al.*, 1990) as developed by Franses (1991) and Beaulieu and Miron (1993) with critical values as proposed and developed by Franses and Hobijn (1997).

The KPSS-test presented in Table 3.3, indicates that the variables are stationary with different orders of integration, and for each country at least one independent variable is non-stationary at $I(0)$. HEGY-test for stationarity of monthly data reveals that all price variables do not have seasonal effect, while there are seasonal unit roots for some countries' tourist arrivals. Hence OLS will generate spurious regressions on both, yearly and monthly frequencies.

Table 3.3 Results of Unit Root and Co-integration Tests

| Country of origin | Data stationary at | | | | | | | Results of Bounds test | |
|-------------------|--------------------|---------|----------|------------------|---------|------------------|---------|------------------------|---------------------|
| | lnNTA | | lnY | lnP _T | | lnP _S | | F-statistic | Deterministic |
| | Yearly | Monthly | (Yearly) | Yearly | Monthly | Yearly | Monthly | | |
| Malaysia | I(1) | I(1,0) | I(1) | I(1) | I(1,0) | I(0) | I(0,0) | 5.532 ^{***} | intercept, trend |
| Singapore | I(1) | I(1,1) | I(1) | I(1) | I(1,0) | I(0) | I(0,0) | 2.643 [*] | intercept, no trend |
| Japan | I(1) | I(1,0) | I(1) | I(0) | I(0,0) | I(0) | I(0,0) | 12.873 ^{***} | intercept, no trend |
| South Korea | I(1) | I(1,1) | I(1) | I(0) | I(0,0) | I(0) | I(0,0) | 10.070 ^{***} | intercept, no trend |
| China | I(1) | I(1,0) | I(0) | I(0) | I(0,0) | I(1) | I(1,0) | 18.741 ^{***} | intercept, trend |
| France | I(1) | I(1,1) | I(1) | I(0) | I(0,0) | I(0) | I(0,0) | 2.773 [*] | intercept, trend |
| Germany | I(1) | I(1,1) | I(1) | I(0) | I(0,0) | I(1) | I(1,0) | 3.547 ^{**} | intercept, trend |
| U.K. | I(1) | I(1,0) | I(1) | I(1) | I(1,0) | I(0) | I(0,0) | 5.316 ^{***} | intercept, no trend |
| U.S. | I(1) | I(1,1) | I(1) | I(1) | I(1,0) | I(1) | I(1,0) | 3.657 ^{**} | intercept, no trend |
| India | I(1) | I(1,0) | I(1) | I(1) | I(1,0) | I(1) | I(1,0) | 7.812 ^{***} | intercept, no trend |
| Australia | I(1) | I(1,0) | I(1) | I(1) | I(1,0) | I(0) | I(0,0) | 3.919 ^{**} | intercept, no trend |

Notes: Stationarity of yearly data uses KPSS-test, while monthly data uses HEGY-test.

^{***} 0.01 level of statistical significance, ^{**} 0.05 level of statistical significance, and ^{*} 0.10 level of statistical significance

Non-stationary data may still have long-run relationships, especially when deviations from long-run equilibrium relationships are found to be stationary. This long-run relationship is known as co-integration (Engle and Granger, 1987; Banerjee *et al.*, 1993), testing for co-integration is therefore testing the stationarity of deviations from the estimates of long-run equilibrium relationships between variables of non-stationary data. In this study, the bounds test developed by Pesaran, Shin and Smith, (2001) is used to test the co-integration in the model of Thailand's long-run tourism demand.

The results of bounds test, shown also in Table 3.3, prove that the demand model for each country of origin has long-run equilibrium relationships (with deterministic trend for Malaysia, China, France, and Germany).

The first three columns of Table 3.4 present income, own price and cross price long-run elasticities estimates. The last two columns present the Wald test for the null hypothesis of unitary elasticities. The estimated coefficients of demand elasticity using the DOLS are consistent with demand theory. Income elasticity is higher than one for most origin markets which is consistent with the previous studies presented in Table 3.1. Only for Singapore, India and Malaysia the income elasticity is not significantly different from one at 5%. The case of India could be explained by the special profile of the tourists from that origin that normally visit Thailand for business, marriage celebrate and honeymoon. In the case of Malaysia and Singapore, it may be due to the short distance among each of them and Thailand and the subsequent importance of weekend break and border tourism. Finally, South Korea and the U.K. present an income elasticity which is remarkably high (3.432 and 3.207 respectively).

Table 3.4 Elasticity Estimates of Thailand's Long-run Tourism Demand

| Country of origin | Types of elasticity of demand | | | Wald test (F-statistic) | |
|-------------------|-------------------------------|----------------------------|----------------------------|-------------------------|-----------------------|
| | Income (ϵ_{GDP}) | Price (ϵ_{RPT}) | Cross (ϵ_{RPS}) | $\epsilon_{GDP} = 1$ | $\epsilon_{RPT} = -1$ |
| Malaysia | 1.318 ^{***} | -1.450 [*] | 1.207 ^{**} | 3.220 [*] | 0.379 |
| Singapore | 0.793 ^{***} | -0.895 [*] | 1.273 ^{***} | 2.869 | 0.056 |
| Japan | 1.356 ^{***} | -1.968 ^{***} | 2.530 ^{***} | 6.240 ^{***} | 5.359 ^{**} |
| South Korea | 3.432 ^{***} | -5.652 ^{***} | 5.365 ^{***} | 43.992 ^{***} | 33.693 ^{***} |
| China | 1.459 ^{***} | -3.652 ^{***} | 5.482 ^{***} | 23.013 ^{***} | 12.575 ^{**} |
| France | 1.616 ^{***} | -0.875 ^{**} | 1.112 ^{***} | 7.762 ^{**} | 0.094 |
| Germany | 1.525 ^{***} | -1.555 ^{***} | 1.874 ^{***} | 7.572 ^{**} | 1.960 |
| U.K. | 3.207 ^{***} | -2.085 ^{***} | 3.169 ^{***} | 22.330 ^{***} | 3.776 [*] |
| U.S. | 1.335 ^{***} | -0.292 [*] | 0.065 | 10.530 ^{***} | 21.717 ^{***} |
| India | 0.911 ^{***} | -0.470 ^{***} | 0.328 [*] | 2.117 | 13.930 ^{***} |
| Australia | 1.742 ^{***} | -2.847 ^{***} | 2.109 ^{***} | 2.789 ^{***} | 8.057 ^{***} |

Note: ^{***} 0.01 level of statistical significance, ^{**} 0.05 level of statistical significance and ^{*} 0.10 level of statistical significance.

Regarding Thailand's own price, the results show different degrees of demand elasticity for the different origins. Hence the study of tourism demand at disaggregate level provides better forecasting accuracy than the total arrivals aggregation (Kim and Moosa, 2005).

Only U.S. and India are found to be price inelastic (-0.292 and -0.470, respectively), being statistically different from one at 1% significance level. The special characteristics of tourists from India were already described above, while visitors from U.S. have higher cost of travel than cost of living in Thailand (Kaosa-ard *et al.*, 2010).

Malaysia, Singapore, France, and Germany's price elasticities are not significantly different from one. Visitors from Malaysia and Singapore whose countries are adjacent to Thailand normally visit it mainly for weekend breaks, while some visitors from Germany and France have second homes in Thailand and Laos.

Japan, South Korea, China, U.K. and Australia are estimated to be price elastic. South Korea and China present the highest price elasticity of demand, tourists from these two countries normally visit Thailand in groups interested in cheap sight-seeing, hence price is an important factor affecting their decisions. Tourists from Japan, U.K., and Australia prefer to visit Thailand as independent travelers (Kaosa-ard *et al.*, 2010) but still rely on Thai tour agents for their accommodation and air tickets. Their main purpose of visit (beach holiday for U.K. and Australia and cultural and urban tourism for Japan) could also be substituted by a vast number of destinations in other countries.

The third column of Table 3.4 presents the cross price elasticity estimates of Thailand's tourism demand. As described in the previous section, a different set of competitors has been defined in order to adjust to the reality of each case. The results show that the coefficients are significant at least at the 5% level for most countries. The exceptions are the U.S. and India, however, that is consistent with their own price inelasticity. Note that as it was the case of own price elasticities, South Korea and China present the higher cross price elasticities, indicating that those origins are very price sensitive.

The last remarkable result from Table 3.4 is that many origin countries respond more to changes in substitutes' price than to changes in Thailand's price. In other words the cross price elasticity of Thailand's tourism demand is greater than its own price elasticity, especially for China (price elasticity = -3.652, cross elasticity = 5.482) and the U.K. (price elasticity = -2.085, cross elasticity = 3.169).

The conclusions for the chapter's second objective, the comparison of elasticities estimates from yearly and monthly data, are presented in Table 3.5 where yearly and monthly coefficients are reported while the third column presents the t-test of statistical equality. The results reveal that the two frequencies' estimates are not statistically different at 1% level of significance for most countries of origin. Moreover, even for those cases where there are differences, neither the definition of Thailand as luxury or normal good nor price elasticity or inelasticity classification are modified.

Table 3.5 Thailand's Long-run Elasticities from Annual and Monthly Frequencies

| Country of origin | Income elasticity | | | Price elasticity | | | Cross elasticity | | |
|-------------------|-------------------|---------|-------------|-------------------|---------|-------------|-------------------|---------|-------------|
| | Type of data used | | t-statistic | Type of data used | | t-statistic | Type of data used | | t-statistic |
| | Yearly | Monthly | | Yearly | Monthly | | Yearly | Monthly | |
| Malaysia | 1.318 | 1.006 | 8.765*** | -1.450 | -1.320 | -0.886 | 1.207 | 1.241 | -0.314 |
| Singapore | 0.793 | 0.812 | -0.755 | -0.895 | -0.802 | -1.04 | 1.273 | 1.117 | -1.738* |
| Japan | 1.356 | 1.031 | 6.068*** | -1.968 | -2.113 | 1.713* | 2.53 | 2.542 | -0.119 |
| South Korea | 3.432 | 3.630 | -1.469 | -5.652 | -4.927 | -3.855*** | 5.365 | 5.294 | 0.441 |
| China | 1.459 | 1.660 | -1.047 | -3.652 | -3.243 | -1.965* | 5.482 | 5.507 | -0.155 |
| France | 1.616 | 1.720 | -0.827 | -0.875 | -0.950 | 0.880 | 1.112 | 1.156 | -0.602 |
| Germany | 1.525 | 1.322 | 1.941* | -1.555 | -1.826 | 1.802* | 1.874 | 1.875 | -0.013 |
| U.K. | 3.207 | 3.087 | 1.264 | -2.085 | -1.864 | -1.948* | 3.169 | 2.740 | 2.880 |
| U.S. | 1.335 | 3.569 | -26.771*** | -0.292 | -0.135 | -1.607 | 0.065 | 0.056 | -4.203*** |
| India | 0.911 | 0.911 | -0.004 | -0.470 | -0.528 | 1.822* | 0.328 | 0.356 | -0.715 |
| Australia | 1.742 | 1.532 | 1.906* | -2.847 | -2.944 | 0.740 | 2.109 | 1.842 | 1.860* |

Note: *** 0.01 level of statistical significance, ** 0.05 level of statistical significance, and * 0.10 level of statistical significance.

It should be noted that when considering 10% statistical significance, price elasticity estimates using annual or monthly data are different for a larger number of origins. This could be due to the fluctuations in arrivals caused by the negative shocks that hit Thailand after 2003, which are more noticeable in monthly data than in yearly data.

3.3.2 Thailand's long-run tourism demand structural change

This section covers the last objective of this chapter. Table 3.6 presents the analysis of the potential structural change of Thailand's long-run tourism demand in 1997. The first 3 columns present the median value of the coefficients estimated with the long-run static model of time varying parameter for the period 1985-1997, and column 4-6 covers 1998-2009. The last column shows the F-statistics for structural change using Chow-test. The results reveal that there was a structural change for most origins, with the exception of South Korea and the U.S.

Table 3.6 Thailand's Long-run Tourism Elasticities Before and After 1997

| Country of origin | 1985-1997 elasticities of | | | 1998-2009 elasticities of | | | Chow-test (F-statistics) |
|-------------------|---------------------------|----------------------|---------------------|---------------------------|-----------------------|----------------------|--------------------------|
| | Income | Price | Cross | Income | Price | Cross | |
| Malaysia | 2.219 ^{***} | 3.624 | -3.673 | 1.115 ^{***} | -2.076 ^{***} | 1.212 ^{***} | 11.951 ^{***} |
| Singapore | 0.878 ^{**} | 0.522 | 0.038 | 0.747 ^{***} | -0.830 [*] | 1.152 ^{***} | 3.898 ^{**} |
| Japan | 2.131 ^{***} | 5.457 | -3.055 | 1.374 ^{***} | -1.921 ^{***} | 2.447 ^{***} | 4.016 ^{**} |
| South Korea | 3.643 ^{***} | -4.869 | 5.373 ^{**} | 3.618 ^{***} | -5.432 ^{***} | 5.838 ^{***} | 1.862 |
| China | 2.157 ^{***} | -0.505 | 1.326 | 1.889 ^{***} | -1.701 [*] | 3.169 [*] | 5.449 ^{***} |
| France | 3.111 ^{***} | 5.737 | -3.036 | 1.875 ^{***} | -0.803 [*] | 1.500 ^{***} | 4.143 ^{**} |
| Germany | 2.004 ^{***} | 0.423 | 0.849 | 1.520 ^{***} | -1.594 ^{***} | 1.969 ^{***} | 3.672 ^{**} |
| U.K. | 2.973 ^{**} | -3.194 ^{**} | 4.096 | 3.163 ^{***} | -2.216 ^{***} | 3.146 ^{***} | 3.010 ^{**} |
| U.S. | 1.710 ^{***} | 0.754 | -0.100 | 1.332 ^{***} | -0.334 ^{**} | 0.105 | 1.760 |
| India | 0.642 ^{**} | -1.482 | 1.244 | 0.911 ^{***} | -0.467 ^{**} | 0.328 ^{***} | 2.783 [*] |
| Australia | 1.274 | -4.293 | 1.937 | 1.710 ^{***} | -3.037 ^{***} | 2.322 ^{***} | 4.210 ^{**} |

Notes: figures of demand elasticity presented in this table are median value for each year of the corresponding period.

^{***} 0.01 level of statistical significance, ^{**} 0.05 level of statistical significance, and ^{*} 0.10 level of statistical significance.

The estimation of income elasticity before and after 1997 shows that Thai tourism is regarded as a luxury good for most major tourist markets at 1% level of statistical significance. Before 1997, with a fixed exchange rate system (linked to U.S. Dollars) the real exchange rate was more stable than after 1997's devaluation and the new floating exchange rate system. As a consequence, the price of Thai tourism and the prices of its substitutes have greater influence on tourist arrivals to Thailand.

In some markets, such as China, there may be other factors at play as the change in the Chinese government policy giving the Authorized Destination Status to more countries (from four before 1997 to 132 countries at present).

Higher income Chinese tourists prefer to visit Europe or the U.S. while Thailand has become a destination for the middle income tourists who prefer to travel in groups with low expenditure.

3.4 Conclusions and Suggestions

This chapter focuses on long-run elasticity of Thailand's tourism demand. Having estimates of the income and prices elasticities is crucial for evaluating the impacts of any tourism policy that may affect the prices of a given destination (such as taxes or regulating or deregulating markets). A complete knowledge of the elasticities is also relevant in order to understand the potential effects of the economic performance of a destination's origin markets. This is particularly important in the current times where the economy of some of the major tourism markets is suffering an unstable situation. Song, Witt and Li (2003) used data from the sixties until 2000 for estimating Thailand's tourism demand elasticities for seven origin markets, since then there is no available update which considers the definition of the variables consolidated in the tourism literature. The need for updating the estimates is stressed considering that in 1997 Thailand suffered a severe economic crisis that motivated the abandon of the fix exchange rate system.

The study applies a Dynamic Ordinary Least Squares model for estimating the long-run elasticities of Thailand's tourism demand for all major origin countries. Particular attention is devoted to the selection of the substitute countries for each origin market. The conventional approach is to use the same set of competitors for all the origin markets. However, a given country can act as substitute or as complement for tourists from different origins which are likely to be focusing on different tourism products. For example, tourists from Singapore visiting Thailand are likely to focus on weekend city breaks, while tourist from the U.K. are more attracted by the weather and nightlife experience. Hence, the price of a third country as Indonesia could act as a clear substitute for British tourists, while can be insignificant for tourists from Singapore. Therefore the study proposes a detailed analysis of the competitors for each origin country in order to improve the estimated cross price elasticity.

The chapter's second objective was to analyze the effect of the use of different data frequencies for estimating long-run demand elasticities. There are papers in the literature doing such comparison for the case of demand forecasting models (Song and Li, 2008; Song, Kim and Yang, 2010a), but not for the case of estimating elasticities. Hence, annual and monthly data (adjusted by seasonality) have been used for the same period. When a long yearly database is used for estimation, there is always the risk of the occurrence of a severe economic shock that modifies the relation among the variables under analysis. For this reason, a long-run static model of time varying parameter (TVP-LRM) was used to analyze the 1997 Thai economic crisis and the modification of the exchange rate system.

The results of the study confirm that segmentation by country is clearly necessary as there are noticeable differences among the parameters estimated for different origins. Hence, the use of aggregate data to study tourism demand may result in incorrect findings and may lead to inappropriate planning and policy implementation.

Consistently with previous studies, Thailand's tourism is regarded as a luxury good for most foreign tourists ($\epsilon_{GDP} > 1$), with three exceptions which are related with the special characteristics of the tourists from those origins visiting Thailand. The geographical distance between Malaysia, Singapore and Thailand explain the importance of border tourism and weekend breaks. Hence their trips to Thailand would not enter in the category of "main holidays" which are the ones related with the classification of tourism as a luxury good. Indian tourists in Thailand also have a special profile related with particular segments as business travel and the growing wedding and honeymoon products.

Each country of origin reacts differently to changes in the price of Thai tourism, as proven by the different price elasticities' estimates. Most countries of origin are sensitive to changes in Thailand's price, with demand being elastic ($\epsilon_{RPT} > -1$). However, U.S. and India exhibit price inelastic demand ($\epsilon_{RPT} < -1$). On

the other hand, South Korea and China present the highest price elasticity of demand (-5.65 and -3.65 respectively).

Cross price elasticities are significant at least at the 5% level for most countries, but the values are also different for each country. As with the case of the own price elasticity, the exceptions are U.S. and India, for which cross price elasticities are not significant, and China and Korea that exhibit very high cross price elasticities.

Important conclusions for managing Thai tourism can be derived from the comparison between own and cross elasticities. First, this comparison shows that many origins are more responsive to the prices of substitute destinations than to the price of Thai tourism ($\epsilon_{RPS} > \epsilon_{RPT}$). Hence, monitoring policies on the price of substitute destinations should be carried out, since changes in prices of substitute destinations may have higher impact on Thai tourism than changes in its own price. Second, this comparison helps to characterize the market structure for different origins. As an example, China and South Korea are very elastic in relation to the Thai price and display high cross price elasticity. Hence Thailand does not have enough differentiation (it is competing on the basis of its price) in those countries which are mainly attracted to Thailand for sightseeing and entertainment. In the sun and sea product, we can also extract similar conclusions for the tourists from Australia which have popular alternatives with a long tradition as Indonesia for that segment.

Regarding the data frequency analysis, the results reveal that the two frequencies' estimates are not statistically different at 1% level of significance for most countries of origin. Moreover, even for those cases where there are differences, the classification of Thailand as luxury or normal good or regarding price elasticity or inelasticity is not modified. The study also proved that the economic crisis and the change of exchange rate policy in 1997 led to a structural change in demand for all the origin markets with the exception of South Korea and the U.S. The lesson learned from this fact is that some severe economic

changes may have a long term effect on the relations among the variables considered in the tourism demand relations. Hence, under special circumstances as the actual global economic crisis, cautions should be taken when applying elasticities estimates obtained from previous periods.

The implication of the above results is that tourism promotion policies or any policy relating to market stimulation for Thailand's tourism should be tailor made to suit each country of origin. That is particularly the case for some tourism policies which would have impact on the price of Thai tourism. Some examples have been under debate in Thailand in the last few years as the Ministry of Finance proposed implementing an arrival tax in 2007, or the temporal elimination of the visa fee for the Chinese market after the Bangkok protests in 2010. This chapter of the thesis intends to contribute to those debates providing update estimates of the elasticities, and proving that tourists from different markets would respond differently to those policies.

3.5 References

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Chapter IV

The Effect of Thailand' Political Crisis on Destination Image and International Tourists Experience

4.1 Introduction

The tourism industry is sensitive to unexpected extreme events such as natural disasters, terrorism, political unrest, or disease outbreaks (Richter, 1983; Ryan, 1993; Faulkner, 2001; Ritchie, 2004; Araña and León, 2007). During the past decade, it has been strongly affected by many of these crises (Faulkner, 2001; Ritchie, 2004) but despite their prevalence, few impact assessment studies have been conducted (Wang, 2009). Those studies showed that these extreme events had a significant impact on the tourism industry (Huang and Min, 2002; Goodrich, 2002; Lim and McAleer, 2005; Chu, 2008; Wang, 2009). Most of them focused on declining tourist arrivals using univariate or multivariate analyses. Examples include among others, studies on the impact of the 9/11 on the U.S. economy (Goodrich, 2002), the 1999's earthquake in Taiwan (Huang and Min, 2002), SARS and Avian Flu on global and Asian tourism (Kuo *et al.*, 2009; McAleer *et al.*, 2010) and the impact of all these events on Thai tourism (Untong, Piboonrungraj and Kaosa-ard, 2006). However, the effects of crises on tourists' perceptions of risk or the influence of these shocks on destination image have been little studied.

In general, tourists who plan to travel internationally follow the news and information, as well as government warnings on travel safety at their planned destinations. They try to minimize risks before leaving home by checking current news and weather forecasts as well as getting necessary vaccination (Lepp and Gibson, 2003). Past studies have shown that safety and security are important factors that international tourists take into account when selecting destinations (Poon and Adams, 2000; Lepp and Gibson, 2003; Kozak, Crotts and Law, 2007; Rittichainuwat and Chakraborty, 2009). In these studies, risks that have influence on tourism are classified into four main groups: terrorism, war and political instability, health concerns, and crime (Lepp and Gibson, 2003). Events involving

these risks are forecasted to negatively affect tourism, for instance, the 9/11 terrorism attack in 2001 led to a 6.8% drop in tourist arrivals to North America compared with the year 2000 arrivals (World Tourism Organization, 2002). It is estimated that political instability in China (Tiananmen Square), caused the cancelation of approximately 11,500 tourist visits to Beijing in 1989 (Gartner and Shen, 1992). For Thailand, the SARS crisis led to an estimated drop of 1.20 million tourist arrivals (-34.72%) over a four month period (March-June 2003), with an estimated loss of earnings of US\$840 Million (Untong, 2003).

Political instability in Thailand from December 2008 to April 2009 (see Table 4.1) led to a drop of about 31% of international tourist arrivals over the first four months of 2009 (Barnes, 2009). Thai tourism's major origin markets, including Japan, China, the U.S., South Korea, and Russia, experienced drops averaging between 23-40% (Barnes, 2009). Beyond its impacts on arrivals, these events might have also affected Thailand's destination image, perceived value, satisfaction and loyalty, or the structure of causal relationships among them. This, in turn, may affect the tourism competitiveness of Thailand both in the short and long run, because destination image is an important factor influencing comparative advantage of tourism (Gartner, 1994; Baloglu and McCleary, 1999; Chi and Qu, 2008; Martín and Bosque, 2008). Past studies confirm that destination image influences tourists' decision-making process (Gartner, 1989; Chon, 1992; Crompton and Ankomah, 1993; Baloglu and McCleary, 1999), post-decision makings (Fakeye and Crompton, 1991; Mansfeld, 1992; Bigné, Sánchez and Sánchez, 2001), and destination loyalty reflected through their revisits or recommendations to others to visit (Oppermann, 2000; Chen and Tsai, 2007; Ozturk and Qu, 2008; Chi and Qu, 2008; Chen and Chen, 2010).

Based on the concepts described above, this chapter aims to study the structural differences of these causal relationships caused by the political instability that hit Thailand in the end of 2008 and beginning of 2009. The crises and post crises period are going to be considered. The results of the study will help to improve our understanding of the impacts of political instability on

Thailand's destination image, its effects on tourists' perceived experience and their destination loyalty. By understanding these elements it will be possible to provide recommendation for improving tourism planning and management in order to address the changes brought by political crises that may occur in the future.

4.2 Literature Review

4.2.1 Risk and perceived risk

Risk and perceived risk are important factors that tourists consider when choosing a destination (Poon and Adams, 2000; Lepp and Gibson, 2003; Beirman, 2003). Perception of risk before travel may lead tourists to avoid or cancel their travel to a destination, while confronting a risky situation during travel will influence individuals' future behavior (Mitchell and Vasso, 1997; Irvine and Anderson, 2006). Perceived risk and actual risk are different (Sönmez and Graefe, 1998b; Lepp and Gibson, 2003; Rittichainuwat and Chakraborty, 2009), and decisions are more likely based on perceived risk than on actual risk (Roehl and Fesenmaier, 1992). The latter is the probability that an unexpected event negatively affects tourists experience (Glaesser, 2003; Laws and Prideaux, 2005), while perceived risk consists on the perception of all negative outcomes that are likely to occur from unexpected events. If this perceived risk is high, it will affect tourists' behavior (Mansfeld, 2006; Reichel, Fuchs and Uriely, 2007). Natural disasters, political instability, wars, epidemics, and terrorism have different probabilities of occurrence, however tourists normally do not know the real risk of a particular event (Wilks and Page, 2006).

During a crisis, mass media and word-of-mouth are important channels influencing potential tourists' perception of destination's risk (Tasci and Gartner, 2007). This is especially true for tourists who do not know much about the destination they are going to visit. As a result, media plays an important role in creating the tourists' perception of risk for a particular destination (Cavlek, 2002). This may ultimately lead to changes in tourists decisions based on perceived risk created by media (Fuchs and Reichel, 2006).

Tourists already at a destination, when confronted with an unexpected event, may change their behavior to adjust to the situation they are in (Chen and Tsai, 2007). It may also affect their future behavior on both, their decision to revisit or their recommendation to others (Gitelson and Crompton, 1984; Sönmez and Graefe, 1998a; Glaesser, 2003). Past studies show that those tourists that already know the destination tend to have lower perception of risk (Pinhey and Inverson, 1994; Sönmez and Graefe, 1998b).

4.2.2 Destination image

The study of destination image is increasingly attracting interest in the literature, compared to 142 articles during the 1973-2000 period, 120 papers were published from 2001 until 2007 (Pike, 2007). Destination image has been defined differently over the past three decades (Echtner and Ritchie, 2003; Martín and Bosque, 2008). However, it is possible to achieve some consensus considering that this concept encompasses tourists' knowledge, beliefs, feelings, and overall perception of a particular destination (Crompton, 1979; Fakeye and Crompton, 1991; Bigné, Sánchez and Sánchez, 2001; Echtner and Ritchie, 2003; Martin and Bosque, 2008).

The review of destination image (Pike, 2002; Pike, 2007) shows that image assessment is mainly applied to single countries, instead of considering regional or international comparisons. Factor analysis technique is often used for understanding destinations' image components. In the past decade, there have been also studies on the effects of destination image on tourists behavior and satisfaction (Chon, 1990; Chi and Qu, 2008), on perceived value (Chen and Tsai, 2007; Ozturk and Qu, 2008), and on destination loyalty (Yoon and Uysal, 2005; Chen and Tsai, 2007; Chi and Qu, 2008). Most researchers prefer to ask tourists to assess destination's image according to either physical attributes, such as natural attractions, or subjective attributes, such as service quality, rather than asking them for an overall impression (Echtner and Ritchie, 2003; Martín and Bosque, 2008).

Finally, destination image changes mainly due to new information, provided through advertisement by the destination itself, or through any other sources including websites (Gartner, 1994; Prebensen, 2007). Among the information that has the capacity of modifying the destination image we should include the pre-visit awareness of risk and the actual experience at the destination.

4.2.3 Perceived value

Perceived value refers to the total utility that an individual receives from consuming a good or service (Zeithaml, 1988). Each consumer may have different perceived values for each good or service and at different points in time. This variability applies to tourism as well, with destinations and their perceived value differing across attractions, services and facilities (Ozturk and Qu, 2008). The perceived value of tourism may be assessed in terms of both its monetary and non-monetary characteristics (Bojanic, 1996; Murphy and Pritchard, 1997; Petrick, Backman and Bixler, 1999; Petrick and Backman, 2002b). The monetary element is what the consumer is willing to pay for the tourism service (Zeithaml, 1988). This price component can be measured in absolute terms as the actual price, or in relative terms when compared with the price of previous experiences. The non-monetary element includes time, searching costs, brand reputation, and the convenience in accessing or using destination services (Petrick and Backman, 2002b; Ozturk and Qu, 2008).

The perceived value of tourism can be assessed using a unidimensional measure (Chen and Chen, 2010) or a multidimensional scale such as SERV-PERVAL, as proposed by Petrick and Backman (2002b). Past studies reveal that perceived quality and monetary cost are important components of the perceived value (Duman and Mattila, 2005), which is critical for tourists satisfaction and intended behavior (Cronin, Brady and Hult, 2000; Oh, 2000; Petrick and Backman, 2002a). Hence a destination's perceived value is likely to be positively related to satisfaction, revisits and recommendations to others (Brady and Cronin, 2001; Petrick, 2004; Chen and Tsai, 2007; Chen and Chen, 2010).

4.2.4 Tourists satisfaction

The analysis of satisfaction is crucial for two main reasons, it reflects the quality of destinations (Yoon and Uysal, 2005; Chen and Tsai, 2007; Chi and Qu, 2008), and it influences tourists future behavior (Kozak and Rimmington, 2000; Petrick and Backman, 2002a). Several studies analyze satisfaction by comparing the pre-visit expectations and post-visit satisfaction (Ekinici, Riley and Chen, 2001; Yoon and Uysal, 2005). However, tourists also compare perceived values with costs (Oliver and Swan, 1989), when so the major factors influencing satisfaction are prices, received utility and time cost. In addition, satisfaction also depends on each tourist's background, as they often compare their present trips with their past experiences (Yoon and Uysal, 2005; Chi and Qu, 2008; Chen and Chen, 2010).

The assessment of satisfaction has different perspectives and dimensions, which usually lead to the integration of a variety of concepts. Most studies use overall rather than attributes satisfaction (Chi and Qu, 2008). However, it has also been suggested that attributes satisfaction influences overall satisfaction (Oliver, 1993; Chi and Qu, 2008), and measuring attributes satisfaction can better reflect changes in overall satisfaction (Bolton and Drew, 1991; Oliver, 1993; Chi and Qu, 2008).

Finally, an increase in satisfaction is likely to increase the willingness to revisit as well as the recommendation made to others (Kozak and Rimmington, 2000; Petrick and Backman, 2002a; Yoon and Uysal, 2005; Chen and Tsai, 2007; Chi and Qu, 2008; Chen and Chen, 2010).

4.2.5 Destination loyalty

Loyalty is related with future behavior that is captured by revisits or recommendations. For instance, the magnitude of destination loyalty can be measured in terms of revisit frequency as in Oppermann (2000). Regarding recommendations, the so called word-of-mouth is the cheapest and most effective advertisement (Shoemaker and Lewis, 1999). When buying goods or services,

consumers rely as much as 60% on the information provided by people close to them, then only a 5% increase in loyalty can generate 25-95% higher profits (Reichheld and Sasser, 1990). Destination loyalty is commonly used as a success indicator of a destination, and through its effect on future behavior it also strengthens destination competitiveness (Dimanche and Havitz, 1994; Yoon and Uysal, 2005; Chi and Qu, 2008).

In practice it is difficult to measure tourists' destination loyalty at the action level; therefore, assessing conation loyalty in the form of intention to revisit or recommendations to others is often preferred (Yang and Peterson, 2004; Chen and Chen, 2010).

4.3 Research Methodology

Frequently the analysis of tourist experience adopts an aggregate approach. However, the overall experience can be disaggregated into stages (pre-, during-, and post-visit periods) where the actual use of a tourism service is assessed through tourists' perceived value and satisfaction, and future behavior is measured through willingness to revisit and recommendations (Chen and Tsai, 2007). Through all these stages destination image is an important factor which will have effects from the process of choosing a destination (Gartner, 1989; Crompton and Ankomah, 1993; Ozturk and Qu, 2008) to every following stage of tourist experience (Fakeye and Crompton, 1991; Bigné, Sánchez and Sánchez, 2001; Lee, Lee and Lee, 2005).

In this study, tourist experience is divided into four stages: pre-visit (decision-making), during-visit (on-site experience), post-visit (overall experience), and future behavior (destination loyalty). At the pre-visit stage, tourists learn about the destination and form their perception of image which will influence their behavior both before and after selecting the destination. Later, tourists obtain satisfaction from the experience, and at the post-visit stage they assess their perceived value and overall satisfaction. Finally, all these stages have a direct and indirect effect on destination loyalty.

In order to analyze the holistic tourist experience, the authors developed the conceptual model presented in Figure 4.1, which relates destination image, perceived value, satisfaction, and destination loyalty. These model gathers previous partial proposals in the literature, destination image affects perceived value (Chen and Tsai, 2007; Ozturk and Qu, 2008), satisfaction (Chon, 1990; Chi and Qu, 2008), and destination loyalty (Yoon and Uysal, 2005; Chen and Tsai, 2007; Chi and Qu, 2008). Perceived value, in-turn, affects satisfaction and destination loyalty (Cronin, Brady and Hult, 2000; Oh, 2000; Petrick and Backman, 2002a; Chen and Tsai, 2007; Ozturk and Qu, 2008; Chen and Chen, 2010). In addition, tourists' overall satisfaction is affected by attributes' satisfaction (Oliver, 1993; Chi and Qu, 2008), and the former affects destination loyalty (Kozak and Rimmington, 2000; Petrick and Backman, 2002a; Yoon and Uysal, 2005; Chen and Tsai, 2007; Chi and Qu, 2008; Chen and Chen, 2010).

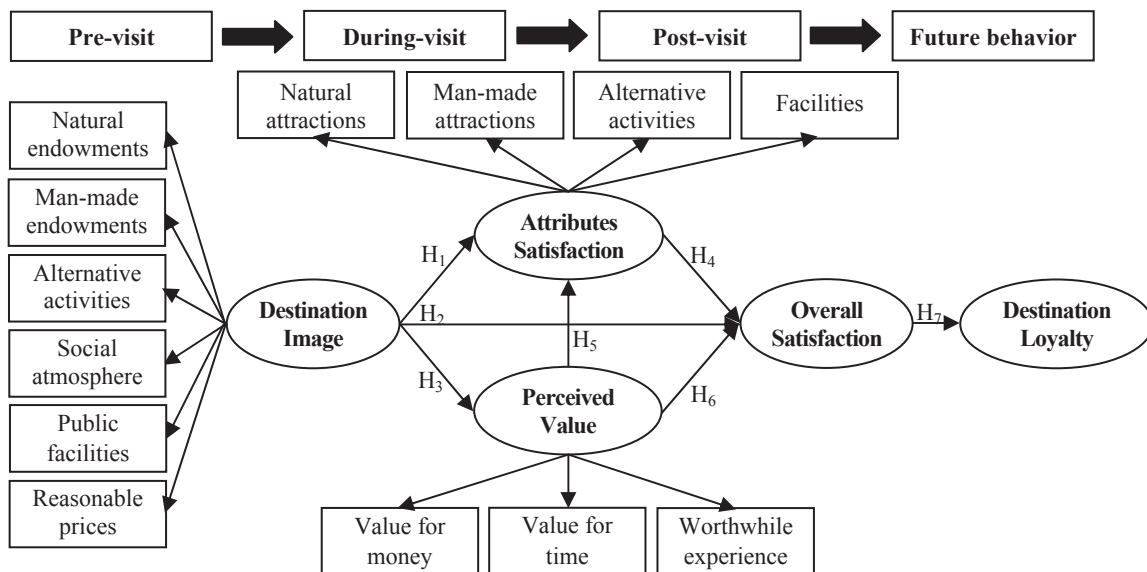


Figure 4.1 Conceptual Model

The model includes observable variables which are depicted into a rectangle and latent variables (non observable) which are depicted inside a circle. For the relation among latent variables the arrows represent causality. Finally as shown in the figure each latent variable is constructed using as factors some observable variables. From the above model, seven hypotheses can be derived:

Hypothesis 1: destination image has direct effect on attributes satisfaction.

Hypothesis 2: destination image has direct effect on overall satisfaction.

Hypothesis 3: destination image has direct effect on perceived value.

Hypothesis 4: attributes satisfaction has direct effect on overall satisfaction.

Hypothesis 5: perceived value has direct effect on attributes satisfaction.

Hypothesis 6: perceived value has direct effect on overall satisfaction.

Hypothesis 7: overall satisfaction has direct effect on destination loyalty.

The above hypotheses are tested in six different periods of time related to two situations that strongly affected Thailand's tourism in the end of 2008 and beginning of 2009. All the periods which are used in the estimation of the model, with their corresponding data collection dates and database sample size are presented in Table 4.1. Personal interviews with 4,754 international tourists at Suvarnabhumi Airport (Bangkok) and Chiang Mai Airport were conducted from the 1st of October of 2008 to the 18th of May of 2009.

Table 4.1 Dates of the Events and Database Sample Size

| Period | Data collection | Number of respondents in the sample |
|---|---------------------------------------|-------------------------------------|
| Before airports closure (Pre-crisis) | October 1, 2008 – November 25, 2008 | 221 |
| Airports closure (Crisis1) | December 2-9, 2008 | 453 |
| One month after airports closure (Post-crisis1A) | December 26, 2008 – January 31, 2009 | 291 |
| Two-three months after airports closure (Post-crisis1B) | February 1, 2009 – April 7, 2009 | 2,663 |
| Songkran crisis (Thai troops crack down on the protesters, red-shirt, in Bangkok) (Crisis2) | April 8 – 22, 2009 | 833 |
| One month after Songkran crisis (Post-crisis2) | April 23, 2009 – May 18, 2009 | 293 |
| Total | October 1, 2008 – May 18, 2009 | 4,754 |

The questionnaire was divided into four parts. The first part consists of fourteen questions on the destination image of Thailand. The second part has thirteen questions assessing attributes satisfaction. The third part consists of three questions on perceived value. Finally the questionnaire includes three questions on overall satisfaction and three questions on destination loyalty. For each question, the respondents were asked to rate their opinion/attitude on a one-to-five scale (lowest to highest score).

The model, as presented in Figure 4.1, consists of observable and latent variables. Observable variables' value is the mean values of each set of questions, or is assessed from the rating scores given by the respondents in the sample. There are nineteen observable variables in the model: six exogenous variables and thirteen endogenous variables. Table 4.2 presents the description of all the variables in the model, there are five latent variables: one exogenous (destination image) and four endogenous variables (attributes satisfaction, perceived value, overall satisfaction, and destination loyalty).

Table 4.2 Variables and Description of Variable under Study

| Latent variables | Observable variables | Description | |
|-----------------------------|-------------------------------------|--|--|
| Exogenous variables | | | |
| Destination image | Natural endowments | - Beautiful beaches and clear sky - Other beautiful natural attractions | |
| | Man-made endowments | - Wide-variety of cultural attractions - Delicious food | |
| | Alternative activities | - Colorful nightlife - Great shopping | |
| | Social atmosphere | | - Relaxing massage/spa - Wonderful people |
| | | | - High quality service - Relaxing way of life |
| | Public facilities | - Very clean - Very safe | |
| | Reasonable prices | - Efficient & reliable transportation/communication - Very reasonable prices | |
| Endogenous variables | | | |
| Attributes satisfaction | Natural attractions | - Sun, sand and sea - Weather - Other natural attractions | |
| | Man-made attractions | - World heritage sites - Food - Other cultural attractions | |
| | Alternative activities | - Night life - Shopping - Massage/spa | |
| | Facilities | - Accommodation - Cleanliness - Safety - Transportation and communication | |
| Perceived value | Good value for money | - This trip to Thailand had good value for money. | |
| | Good use of my time | - This trip to Thailand was a good use of my time. | |
| | Worthwhile tourism experience | - Thailand offered a worthwhile tourism experience. | |
| Overall satisfaction | Enjoyment received | - Overall, I enjoyed my trip to Thailand. | |
| | Better than expected | - Overall, my satisfaction with this trip is greater than my expectation. | |
| | Satisfaction with visit to Thailand | - I am satisfied with my decision to select Thailand as my travel destination. | |
| Destination loyalty | Revisit | - I would like to visit Thailand again. | |
| | Recommendations | - I will recommend Thailand as a travel destination to my friends and family. | |
| | Willingness to pay to revisit | - I will pay to come to Thailand for a vacation again. | |

4.4 Result of the Study

The appropriate quantitative method to deal with the model presented in Figure 4.1 is a structural equation model (SEM) which uses maximum likelihood estimation and covariance matrix with LISREL software (Jöreskog and Sörbom, 1996). According to the Cronbach methodology, the internal consistency of the model has to be tested by analyzing the Cronbach's alpha coefficients which should be above 0.70 to ensure the model's variable reliability (Nunnally and Bernstein, 1994). Moreover, the item-to-total correlation values should be above 0.30 (Parasuraman, Zeithaml and Berry, 1988), so that adding more observable variables yield better Cronbach's alpha coefficients.

The above test is presented in Table 4.3, where the value of Cronbach's alpha coefficients (column "CA" in Table 4.3) for each factor (A, B, C, D, E) is presented in bold. For each component we have different observable variables used to build it. In this process item-to-total correlation values (column "COR" in Table 4.3) should also be taken into consideration. These values should be above 0.30 (Parasuraman, Zeithaml and Berry, 1988) so that adding more observable variables yield better CA coefficients.

The results of our analysis (Table 4.3) show that the alpha coefficients of all the variables in our model are greater than 0.70 with item-to-total correlation greater than 0.30. Finally, the CA column for the lines correspondent to observable variables used in the construction of each of the five factors shows the value of the CA coefficient if that observable variable is deleted. The results thus confirm that all the variables used in this study are highly reliable and adding more components into the model gives us better CA coefficients.

Table 4.3 Results of Reliability Testing (Cronbach's alpha)

| Components | Pre-Crisis1 | | Crisis1 | | Post-Crisis1A | | Post-Crisis1B | | Crisis2 | | Post-Crisis2 | |
|---------------------------------------|-------------|------|-------------|------|---------------|------|---------------|------|-------------|------|--------------|------|
| | CA | COR | CA | COR | CA | COR | CA | COR | CA | COR | CA | COR |
| A. Destination image | 0.81 | - | 0.82 | - | 0.75 | - | 0.78 | - | 0.79 | - | 0.80 | - |
| - Natural attractions | 0.78 | 0.57 | 0.80 | 0.56 | 0.72 | 0.43 | 0.75 | 0.51 | 0.77 | 0.45 | 0.80 | 0.40 |
| - Man-made attractions | 0.77 | 0.63 | 0.80 | 0.57 | 0.70 | 0.52 | 0.75 | 0.54 | 0.74 | 0.58 | 0.74 | 0.64 |
| - Alternative activities | 0.79 | 0.51 | 0.79 | 0.66 | 0.71 | 0.47 | 0.75 | 0.51 | 0.75 | 0.54 | 0.75 | 0.61 |
| - Social atmosphere | 0.73 | 0.80 | 0.77 | 0.75 | 0.67 | 0.62 | 0.71 | 0.70 | 0.71 | 0.71 | 0.73 | 0.69 |
| - Public facilities | 0.81 | 0.46 | 0.81 | 0.56 | 0.70 | 0.51 | 0.75 | 0.85 | 0.78 | 0.45 | 0.80 | 0.39 |
| - Reasonable prices | 0.80 | 0.50 | 0.81 | 0.52 | 0.74 | 0.37 | 0.77 | 0.45 | 0.76 | 0.52 | 0.76 | 0.58 |
| B. Attributes satisfaction | 0.76 | - | 0.84 | - | 0.79 | - | 0.72 | - | 0.76 | - | 0.80 | - |
| - Natural attractions | 0.69 | 0.56 | 0.80 | 0.66 | 0.75 | 0.58 | 0.65 | 0.51 | 0.72 | 0.54 | 0.78 | 0.55 |
| - Man-made attractions | 0.66 | 0.62 | 0.77 | 0.71 | 0.72 | 0.64 | 0.62 | 0.57 | 0.65 | 0.66 | 0.71 | 0.69 |
| - Alternative activities | 0.73 | 0.48 | 0.80 | 0.65 | 0.76 | 0.57 | 0.69 | 0.46 | 0.73 | 0.52 | 0.75 | 0.61 |
| - Facilities | 0.70 | 0.55 | 0.80 | 0.66 | 0.73 | 0.62 | 0.67 | 0.49 | 0.72 | 0.53 | 0.75 | 0.60 |
| C. Perceived value | 0.77 | - | 0.87 | - | 0.75 | - | 0.75 | - | 0.77 | - | 0.79 | - |
| - Good value for money | 0.71 | 0.59 | 0.84 | 0.73 | 0.72 | 0.54 | 0.71 | 0.53 | 0.73 | 0.56 | 0.71 | 0.64 |
| - Good use of my time | 0.68 | 0.62 | 0.76 | 0.82 | 0.57 | 0.66 | 0.63 | 0.60 | 0.66 | 0.62 | 0.66 | 0.69 |
| - Worthwhile tourism experience | 0.69 | 0.61 | 0.85 | 0.73 | 0.71 | 0.54 | 0.65 | 0.59 | 0.67 | 0.62 | 0.78 | 0.58 |
| D. Overall satisfaction | 0.79 | - | 0.90 | - | 0.81 | - | 0.84 | - | 0.84 | - | 0.79 | - |
| - Enjoyment received | 0.73 | 0.61 | 0.85 | 0.81 | 0.80 | 0.61 | 0.78 | 0.71 | 0.78 | 0.71 | 0.72 | 0.62 |
| - Better than expected | 0.79 | 0.57 | 0.90 | 0.76 | 0.75 | 0.68 | 0.82 | 0.68 | 0.84 | 0.67 | 0.76 | 0.58 |
| - Satisfaction with visit to Thailand | 0.62 | 0.72 | 0.82 | 0.85 | 0.64 | 0.74 | 0.74 | 0.75 | 0.74 | 0.77 | 0.65 | 0.68 |
| E. Destination loyalty | 0.83 | - | 0.91 | - | 0.76 | - | 0.75 | - | 0.81 | - | 0.83 | - |
| - Revisit | 0.75 | 0.73 | 0.86 | 0.84 | 0.66 | 0.63 | 0.71 | 0.56 | 0.72 | 0.68 | 0.71 | 0.74 |
| - Recommendations | 0.80 | 0.67 | 0.88 | 0.81 | 0.75 | 0.54 | 0.64 | 0.61 | 0.75 | 0.65 | 0.76 | 0.70 |
| - Willingness to pay to revisit | 0.75 | 0.72 | 0.88 | 0.82 | 0.60 | 0.66 | 0.65 | 0.59 | 0.74 | 0.65 | 0.82 | 0.63 |

Source: Author's calculation.

4.4.1 Changes in the tourist experience

The consecutive repetition of the same questionnaire before and after the events provides a unique database to understand the evolution of the tourism experience as affected by the two political crises. The percentage changes in the model's variables values during the periods under analysis as compared to pre-crisis1 (before airports closure) are shown in Table 4.4.

Regarding the effects on destination image, which is mainly related with pre-visit perceptions, the table proves that there were little changes for those tourists that were in Thailand during the events; but the negative external awareness negatively affected the destination image of Thailand afterwards. After the crises, international tourists gave lower values for Thailand destination image (-4.06% one month after the airports closure, and -3.42% one month after the Songkran crisis). Especially there was a fall on the assessment of social atmosphere one month after both crises (with a fall above 6% for the first crisis and above 4% for the second), and on the image of public facilities (falling also in

the vicinity of 6%). Among the possible reasons for this post crises effect, one is the fact that tourists had a strong negative perception of the crises through the media before coming to Thailand.

Table 4.4 Percentage Changes in the Model's Variable Values

| Item | Crisis1 | Post-Crisis1A | Post-Crisis1B | Crisis2 | Post-Crisis2 |
|---------------------------------------|---------------|---------------|---------------|--------------|--------------|
| A. Destination image | -0.03 | -4.06 | -3.93 | 0.12 | -3.42 |
| - Natural endowments | 3.11 | -1.42 | -1.34 | 0.85 | 0.78 |
| - Man-made endowments | -0.52 | -5.10 | -5.72 | -2.33 | -5.32 |
| - Alternative activities | -1.84 | -1.31 | -1.11 | 0.94 | -5.83 |
| - Social atmosphere | 0.69 | -6.52 | -6.05 | -1.06 | -4.64 |
| - Public facilities | -2.94 | -6.87 | -5.94 | 2.68 | -6.20 |
| - Reasonable prices | 0.85 | -3.60 | -3.79 | 0.03 | 0.28 |
| B. Attributes satisfaction | -0.98 | -3.55 | -3.60 | 0.33 | -3.38 |
| - Natural attractions | 2.83 | 0.16 | -0.10 | 2.72 | 0.37 |
| - Man-made attractions | 0.70 | -3.74 | -4.22 | -1.42 | -4.98 |
| - Alternative activities | 0.54 | -3.13 | -2.83 | 0.44 | -4.35 |
| - Facilities | -8.01 | -7.47 | -7.21 | -0.42 | -4.52 |
| C. Perceived value | -7.46 | -1.79 | -2.26 | -0.61 | -0.51 |
| - Good value for money | -6.42 | -1.04 | -1.34 | -0.55 | 2.29 |
| - Good use of my time | -8.61 | -3.07 | -3.56 | -1.09 | 0.19 |
| - Worthwhile tourism experience | -7.28 | -1.23 | -1.84 | -0.19 | -3.86 |
| D. Overall satisfaction | -9.49 | -1.75 | -2.26 | -1.17 | -1.83 |
| - Enjoyment received | -7.34 | -2.82 | -3.21 | -1.64 | -0.79 |
| - Better than expected | -12.38 | -0.91 | -1.39 | -0.77 | -2.16 |
| - Satisfaction with visit to Thailand | -9.07 | -1.41 | -2.06 | -1.05 | -2.59 |
| E. Destination loyalty | -11.21 | -5.89 | -5.81 | -2.64 | -2.01 |
| - Revisit | -10.90 | -10.48 | -9.67 | -3.96 | -0.61 |
| - Recommendations | -11.49 | -4.57 | -4.82 | -2.91 | -5.19 |
| - Willingness to pay to revisit | -11.24 | -2.75 | -3.05 | -1.07 | -0.08 |

Source: Author's calculation.

It is also worth mentioning that there was a gradual recovery of destination image on the periods after the autumn crisis (note that the image was already recovered by April, when the Songkran crisis hits Thailand). Hence, the results indicate that the effects of that crisis on the image were short term.

Regarding the effects on attributes satisfaction, the results reveal a logical fall on tourists' perceptions of facilities which include safety and transport and communication facilities (between 7.5% and 8%). The latter effect may be related with the use of the U-Tapao airport (a military airport which was not well equipped for commercial flights and was not prepared to serve tourists).

Another clear conclusion is that for those tourists that were directly affected by the first crisis, there was only a slight effect on their image and attributes satisfaction (except for facilities), but a clear negative impact on their perceived value, overall satisfaction and destination loyalty. The drop for those variables are found to be higher for the airports closure crisis (the first crisis) before picking up continuously, even during the Songkran crisis (the second crisis). In fact the general effects of the Songkran crisis are much lower than the autumn shock. This may be explained by the fact that the airports closure had direct impact on international tourists, while the Songkran crisis affected only some areas of Bangkok and Pattaya and therefore international tourists were not so severely affected.

Finally, Table 4.4 shows that the political crises had a remarkable negative effect on destination loyalty, with a maximum of an 11% drop on its value for those tourists affected by the first crisis. As it was the case in the above paragraph, the negative effects on loyalty were more severe for those tourists that were in Thailand during the airports closure, and recovers afterwards.

Table 4.5 presents the factors loading scores of the destination image during the six periods. It shows that the special Thai social atmosphere, as capture by the "land of smiles" brand, remains the most important image of Thailand. However the score of this element decreases after the airports closure (dropped from 0.61 for the first crisis to 0.42 one month after the Songkran crisis). Reasonable prices' loading score increased from 0.25 for post-crisis1 to 0.64 for the post-crisis2, perhaps because the tourists take advantages of aggressive low seasons price discounts. Hence, it is the main component that helped to reduce the negative effects on destination image due to the other components. Finally, there are no clear changes in destination image regarding tourism attractions and activities.

Table 4.5 Factors Loading Scores of Destination Image

| Component | Pre-Crisis1 | Crisis1 | Post-Crisis1A | Post-Crisis1B | Crisis2 | Post-Crisis2 |
|---------------------------|-------------|---------|---------------|---------------|---------|--------------|
| 1. Natural endowments | 0.41 | 0.32 | 0.50 | 0.47 | 0.36 | 0.37 |
| 2. Man-made endowments | 0.50 | 0.39 | 0.35 | 0.53 | 0.48 | 0.38 |
| 3. Alternative activities | 0.37 | 0.44 | 0.28 | 0.42 | 0.35 | 0.42 |
| 4. Social atmosphere | 0.57 | 0.61 | 0.53 | 0.52 | 0.55 | 0.42 |
| 5. Public facilities | 0.33 | 0.61 | 0.52 | 0.41 | 0.36 | 0.41 |
| 6. Reasonable prices | 0.43 | 0.50 | 0.25 | 0.49 | 0.58 | 0.64 |

Source: Author's calculation.

4.4.2 Results of the model estimation

The model presented in Figure 4.1 is then used to analyze our data for the six considered periods. The model is adjusted by adding the correlation between the measurement errors of each component construction, this is done to ensure that the model represents accurately the data derived from tourists' opinions. The most commonly used goodness of fit statistics are presented in Table 4.6, Chen and Chen (2010) provides a good description of those statistics. The main one is the Chi-square test which measures the distance between the sample covariance matrix and the fitted covariance matrix. It should be noted that a small chi-square corresponds to good fit (not significant) and a large chi-square to a bad fit of the estimation (significant) (Jöreskog and Sörbom, 1996).

Table 4.6 Goodness of Fit Statistics

| Goodness of fit statistics | Conditions | Pre-Crisis1 | Crisis1 | Post-Crisis1A | Post-Crisis1B | Crisis2 | Post-Crisis2 |
|----------------------------|---------------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|
| 1. χ^2 | Low χ^2 and not Sig. | 144.77 (P. = 0.11) | 124.23 (P. = 0.11) | 134.89 (P. = 0.11) | 94.52 (P. = 0.11) | 109.67 (P. = 0.13) | 116.11 (P. = 0.12) |
| 2. $\chi^2 / d.f.$ | < 2.00 | 1.16 | 1.17 | 1.16 | 1.20 | 1.17 | 1.17 |
| 3. RMSEA | < 0.05 | 0.027 | 0.020 | 0.024 | 0.009 | 0.014 | 0.024 |
| 4. RMR | Close to 0 | 0.021 | 0.026 | 0.021 | 0.012 | 0.013 | 0.048 |
| 5. GFI | Close to 1 | 0.94 | 0.97 | 0.95 | 0.99 | 0.99 | 0.96 |
| 6. AGFI | > 0.90 | 0.90 | 0.95 | 0.92 | 0.99 | 0.97 | 0.92 |

Note: χ^2 = Chi-square; RMSEA = root mean square error of approximation; RMR = root mean square residual;

GFI = goodness of fit index; AGFI = adjusted goodness of fit index.

Source: Author's calculation.

The results of the goodness of fit statistics prove that the model of the causal relationships between destination image, perceived value, satisfaction, and destination loyalty can be used to explain international tourists' experience for all the periods. As we saw in Tables 4.4 and 4.5 tourists' destination image,

perceived value, satisfaction and destination loyalty changed under the different situations. These differences on the values of the variables of the structural equations lead to changes in the estimated coefficients, but Table 4.6 proves that the structure of the model remain solid.

Table 4.7 presents the coefficient of the structural equation model among the latent variables. The majority of cases indicated that Thailand's destination image had a higher direct effect on tourists' perceived value than on attributes or overall satisfaction. Moreover, the magnitude of this effect of image on perceived value is relatively constant at a value around 0.5. However, the direct effect of destination image on tourists' overall satisfaction in not significant for each of the crises. This may be explained following the results presented in Table 4.4 that proved that during the crises there was only a slight change on the destination image, as it was generated before the event, however there was a severe negative impact on overall satisfaction due to the disturbances suffered by the tourists.

Table 4.7 Coefficients of the Structural Equation Model

| Variables | Pre-Crisis1 | Crisis1 | Post-Crisis1A | Post-Crisis1B | Crisis2 | Post-Crisis2 |
|-----------------------------------|-------------|--------------------|---------------|--------------------|--------------------|--------------------|
| A. Destination image | | | | | | |
| - Attributes satisfaction | 0.25 | 0.33 | 0.31 | 0.42 | 0.33 | 0.57 |
| - Perceived value | 0.52 | 0.44 | 0.55 | 0.54 | 0.59 | 0.46 |
| - Overall satisfaction | 0.16 | 0.05 ^{NS} | 0.13 | 0.17 | 0.02 ^{NS} | 0.06 ^{NS} |
| B. Attributes satisfaction | | | | | | |
| - Overall satisfaction | 0.36 | 0.12 | 0.29 | 0.04 ^{NS} | 0.10 | 0.01 ^{NS} |
| C. Perceived value | | | | | | |
| - Attributes satisfaction | 0.54 | 0.47 | 0.49 | 0.41 | 0.39 | 0.25 |
| - Overall satisfaction | 0.46 | 0.82 | 0.54 | 0.75 | 0.75 | 0.81 |
| D. Overall satisfaction | | | | | | |
| - Destination loyalty | 0.90 | 0.89 | 0.98 | 0.80 | 0.89 | 0.83 |

Note: NS = not statistically significant at 95% level of confidence.

Source: Author's calculation.

Table 4.7 also shows that after the first crisis the perceived value had a higher direct effect on the overall satisfaction than on attributes satisfaction. As a final conclusion from this table, the high and stable coefficient of the relation between overall satisfaction and destination loyalty shows that these two crucial tourism variables are highly correlated.

The results of hypothesis testing at the confidence level of 95% reveal that Thailand's destination image has a direct effect on attributes satisfaction, perceived value, and overall satisfaction. Hypothesis five, six and seven are fulfilled under all the situations. Hence perceived value has a direct effect on international tourists' attributes satisfaction as well as on their overall satisfaction, and overall satisfaction has a direct effect on destination loyalty. As a final remark on these hypothesis, if a political crisis leads to shocks on the Thailand's destination image these changes would also have an indirect effect on destination loyalty for Thai tourism through perceived value and satisfaction.

Adding the direct and indirect effect among the variables, it is proved that the political crises have modified the total effect of destination image on tourists' attributes satisfaction which increases from 0.53 to 0.69. However, the crises have reduced the effect of image on tourists' overall satisfaction and destination loyalty, falling from 0.58 to 0.44 and from 0.52 to 0.37 respectively.

Finally, Table 4.8 presents the squared multiple correlations of the structural equation model which is a measure of the explanatory power of the model. The results show that the only exogenous variable, destination image, can be used to explain the variations in destination loyalty and overall satisfaction which are both directly and indirectly affected. More precisely the changes in Thailand's image can be used to explain loyalty by as much as 65-96% and overall satisfaction by as much as 68-85%. However, destination image can only explain among 19-35% of the change in perceived value which as shown in Figure 1 has only direct effect.

Table 4.8 Squared Multiple Correlations

| Variable | Pre-Crisis1 | Crisis1 | Post-Crisis1A | Post-Crisis1B | Crisis2 | Post-Crisis2 |
|-------------------------|-------------|---------|---------------|---------------|---------|--------------|
| Attributes Satisfaction | 0.50 | 0.46 | 0.50 | 0.53 | 0.41 | 0.53 |
| Perceived value | 0.27 | 0.19 | 0.30 | 0.29 | 0.35 | 0.21 |
| Overall satisfaction | 0.71 | 0.85 | 0.72 | 0.78 | 0.68 | 0.72 |
| Destination loyalty | 0.81 | 0.79 | 0.96 | 0.65 | 0.79 | 0.79 |

Source: Author's calculation.

4.5 Conclusions

One of the facts that characterized the tourism industry in the first decade of the century was the numerous shocks that it suffered. This led to a general awareness of the importance of monitoring such events and designing crises management plans in advance. In this general context this research tries to shed light into the evolution of the effects of a shock on the different stages of the tourist experience. Thailand's case during the political crises in the end of 2008 and beginning of 2009 has been chosen as the context for application. Hence, the main objective of this article was to study the differences in the structure of causal relationships between Thailand's destination image and the international tourists' perceived value, satisfaction, and destination loyalty in six different periods. These episodes were: the period before Thai international airports closure, during airports closure, one month after the airports closure, two and three months after the airports closure, the Songkran crisis, and one month after the Songkran crisis.

An extensive literature review on destination image, perceived value, satisfaction, and destination has been conducted in order to identify the key variables and propose a comprehensive conceptual model gathering the causal relations suggested by previous studies. Once the model was defined, and in order to obtain data for its estimation as a Structural Equation Model (SEM), a total of 4,754 personal interviews of international tourists visiting Thailand were conducted for the six periods defined above. This extensive database constitutes a contribution in itself as it provided a unique source of information for following the perceptions of tourists affected by political crises.

The database is initially used to assess the percentage changes in the values of the variables that are considered to integrate the tourism experiences. This analysis shows that for those tourists that were in Thailand during the events, the effect of the unexpected shocks on destination image was negligible; however there is a relevant negative effect on their perceived value, overall satisfaction and destination loyalty (including the willingness to recommend Thailand as a destination). Interestingly, there is a significant worsening of Thailand's destination image,

mainly regarding social atmosphere and public facilities, for those tourists going to Thailand afterwards, that were aware of the crises through the diffusion of information through the media. The chronological repetition of the interviews informs that these political crises only had short-term impacts on Thailand's destination image, while may have longer impacts on loyalty.

Regarding the estimation of the model, the empirical application fulfills the tests available in the literature proving that the proposed model is solid, and it can be used to explain the evolution of the tourist experience during the events. Hence the change in the value of the variables was not enough to generate changes in the overall behavioral structure of international tourists.

Most of the hypothesis regarding the causal relations among the destination image, perceived value, attributes satisfaction, overall satisfaction and destination loyalty were confirmed. The main exception is that overall satisfaction during the events is mainly determined by other experiences happening during the crises, and not by the tourists' previous destination image.

Regarding the evolution of the causal relations among the variables of the model, the changes in Thailand's destination image led to changes in the magnitude of the effect that it has on tourists' overall satisfaction and destination loyalty.

Finally, it should be pointed that the special social atmosphere remains as the most important destination image of Thailand throughout the analysis, but attractive prices proved to be effective to call the attention of tourists after the crises.

Following the above results it is possible to conclude that in the emergency management plans related with this type of shocks in Thailand there should be special focus on improving tourists' confidence in safety and on restoring the social atmosphere of "Thainess" as fast as possible, once these two aspects are the most important components of the destination image of Thai tourism.

4.6 References

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Chapter V

Change in the Managerial Efficiency and Management Technology of Hotels: an Application to Thailand

5.1 Introduction

Chiang Mai, located in the north of Thailand, is one of the major tourist cities in the country due to richness of its resources in terms of history, culture, tradition, lifestyle, nature and infrastructure. In 2006, approximately 5.29 million visitors travelled to Chiang Mai (being the third destination in Thailand after Bangkok and Pattaya, and the most popular destination in the northern region). Tourism generated nearly 40,000 million Baht (about US\$1,055 million), 52% of which came from international tourists and 48% from domestic tourists (Tourism Authority of Thailand [TAT], 2008).

The majority of hotels in Chiang Mai are 3-star or less, which can be explained by the fact that over the past 20 years the hotel and tourism infrastructure in Chiang Mai has developed to meet the needs of mainly two tourist segments, backpacker and domestic lower- to middle-income tourists (Kaosa-ard, Kruefoo and Untong, 2005). Hence, hotel competitive strategy was based on low prices (following TAT, 54.55% of hotels in Chiang Mai charged a rate below US\$26/night in 2006), rather than improving the quality of their services (Kaosa-ard and Untong, 2005).

However, in recent years, the northern region of Thailand, and Chiang Mai in particular, have been experiencing remarkable changes from both tourism supply and demand. There has been a continuous effort to increase the amount of tourism attractions (Chiang Mai Zoo, Chiang Mai Night Safari, and the Royal Flora Exhibition) and an increasing demand of middle/high-end markets in this region. These have encouraged the growth of tourist arrivals and attracted investment in tourism facilities offering higher-quality standards.

Table 5.1 presents a summary of the main changes experienced by Chiang Mai hotels during the past decade. The number of establishments increased from 199 hotels in 2002 to 341 hotels in 2006, while rooms grew 39.76%. Interestingly, this increase in accommodation supply has not harmed the business indicators of the companies; in fact, revenue per room rose 140.70%, the occupancy rate increased from 48.15% in 2002 to 53.56% in 2006, while the average daily rate (ADR) and revenue per available room (RevPar) shot up 54.83% and 72.22%, respectively.

Table 5.1 Basic Information on Hotels in Chiang Mai between 2002 and 2006

| Item | 2002 | 2006 | % Change |
|---|--------|--------|----------|
| Number of hotels | 199 | 341 | 71.36 |
| Number of guest rooms | 13,466 | 18,820 | 39.76 |
| Number of tourist stay in hotels (million) | 1.91 | 2.76 | 44.55 |
| <i>Domestic</i> | 0.93 | 1.40 | 50.99 |
| <i>International</i> | 0.98 | 1.36 | 38.47 |
| Accommodation expenses ^a (US\$/person/day) | 14.34 | 17.48 | 21.89 |
| <i>Domestic</i> | 13.73 | 14.67 | 6.91 |
| <i>International</i> | 14.98 | 20.44 | 36.42 |
| Average length of stay (day/person) | 1.73 | 2.72 | 57.23 |
| Room sale revenue ^b (US\$ million) | 47.6 | 114.7 | 140.70 |
| Occupancy rate (%) | 48.15 | 53.56 | 11.24 |
| Average daily rate (ADR) (US\$/room) | 20.13 | 31.17 | 54.83 |
| Revenue per available room (RevPar) (US\$/room) | 9.69 | 16.70 | 72.22 |

Note: ^a Exchange rate in 2002 = 43.00 and 2006 = 37.93 Baht/US\$; ^b adjusted with general consumer price index of Chiang Mai (2002 as base year).

Source: Tourism Authority of Thailand (2003 and 2007).

In Chiang Mai, the last decade has been characterized by the development of three new types of establishments with regards to the composition of accommodation capacity. First, there are small boutique hotels, which have unique architecture and services (Nobles and Thompson, 2001). The small size of this kind of establishment implies that they can be built quickly and do not require much investment. At the beginning of 2009, Chiang Mai had more than 15 hotel establishments of this type, attracting both domestic and foreign tourists.

Second, several 5-star hotels have been built by both domestic and foreign investors. In 2007 Chiang Mai had five 5-star hotels, adding up to approximately 510 rooms – Four Seasons Chiang Mai, Mandarin Oriental Dhara Dhevi Chiang Mai,

Sofitel Riverside Chiang Mai, The Chedi Chiang Mai and D2 Chiang Mai (Vorapong, 2007) – and during 2008–2009 four more 5-star hotels opened with 169 rooms. In 2010, the Shangri-la Hotel and Spa Chiang Mai (281 rooms) and Le Meridian Chiang Mai (384 rooms) were opened. So, in 2010 Chiang Mai had eleven 5-star hotels, with a total of 1,344 rooms.

Finally, service apartments have also grown in Chiang Mai during the last decade. This type of accommodation provides similar services to hotels and focuses mainly on long-stay tourists.

All the above quantitative and qualitative changes in the Chiang Mai's accommodation supply, together with the different shocks that have affected tourism in the region and the emergence of new destinations in the South Asia area, lead to a remarkable toughening in the competitive environment for hotel establishments. In a globalized and high technological market, competitive pressure must be countered by improvements in productivity and quality (Barros, 2006). In order to achieve advances in the former strategy, hotels must improve managerial efficiency, operation efficiency, or both. Hotels with higher efficiency will have higher competitiveness (Anderson *et al.*, 1999; Hwang and Chang, 2003).

In this context, this article assesses the change in both the managerial efficiency and management technology of a sample of hotels in Chiang Mai. The study applies Banker *et al.* (1984) data environment analysis (DEA) and the Malmquist productivity approach proposed by Färe *et al.* (1992) to measure the managerial efficiency of 43 hotels in 2002 and 2006, and to estimate the change in both managerial efficiency and management technology of 43 hotels during these years.

The results of the study are used to assess the competitive potential of these hotels across various characteristics. Policy makers and private companies might use the results to identify the weaknesses of current business patterns and to formulate appropriate guidelines to enhance the short- and long-run competitiveness of various hotel groups under present and future market conditions.

5.2 Literature Review

The analysis of hotel efficiency is restricted to a small number of studies (Barros, 2005b). This may be due to limitation of available data, as well as to difficulties in defining the output and input variables of a hotel. There are different methodologies used to measure hotel efficiency. Baker and Riley (1994) suggested the use of ratios to analyze the performance of the lodging industry, while Wijeyesinghe (1993) recommended the application of break-even analysis to appraise tourism management effectiveness. Other studies put forward the use of yield management for analysing hotel management efficiency (Brotherton and Mooney, 1992; Donaghy, McMahon and McDowell, 1995).

Data envelopment analysis (DEA) was first used by Morey and Dittman (1995) to study the managerial efficiency of hotels. This technique is suitable as it enables a comparative study of managerial efficiency at firm level and provides useful economic information; for example, the way in which each firm uses resources to maximize output.

The stochastic frontier approach (SFA) has also been used to study hotel managerial efficiency (Anderson *et al.*, 1999). The main limitation of this methodology is in determining the appropriate functional forms (Untong, 2004; Barros and Athanassiou, 2004; Barros and Dieke, 2008). Moreover, cost function is often used instead of production function because it is easier to obtain cost function variables for the hotel industry. These shortcomings explain why DEA is normally preferred for hotel managerial efficiency studies.

If the DEA technique is applied, it is not necessary to determine which economic model or functional form should be used. However, one common problem of studies that use DEA, and this study is no exception, is the specification of the business operation's input and output variables. Input variables used in several studies of hotel managerial efficiency, such as Hwang and Chang (2003), Barros and Mascarenhas (2005) and Bo and Liping (2004), include: number of employees, number of guest rooms, total operating expenses, total costs, etc. Output variables used in the literature include: total revenue, sales, number of guests, etc (Anderson *et al.*, 2000; Bo and Liping, 2004; Önüt and Soner, 2006). In empirical applications, input and output variables are determined depending on the limitations of data and the objective of each specific study.

The Malmquist productivity approach has been developed from the DEA technique and the Malmquist productivity index to measure productivity change over time, which includes change in managerial efficiency, management technology and total factor productivity (Färe *et al.*, 1990; Hjalmarsson, Veiderpass and Mork, 1992; Price and Weyman-Jones, 1996). A number of studies on hotels, such as those by Hwang and Chang (2003), Barros and Alves (2004) and Barros (2005a), have used this approach combined with the above technique.

There have been several studies conducted in Thailand on hotel operational efficiency at the national, regional and provincial levels, employing either the DEA technique (Untong, 2004; Kraisit, 2005) or the SFA technique, such as the study by Kaosa-ard, Kruefoo and Untong (2005). However, as far as these authors are aware, there is no research that differentiates between the change in the managerial efficiency and management technology of hotels.

Table 5.2 summarizes the main studies on hotel efficiency, their methodology and the sample size that is applied.

Table 5.2 Main Studies on the Efficiency Frontier Methods in the Hotel Business

| Author | Methodology used | Sample size |
|--|-------------------------------|----------------------------------|
| <i>International</i> | | |
| Morey and Dittman (1995) | DEA (CRS) | 54 hotels in the USA |
| Anderson <i>et al.</i> (1999) | SFA (error component) | 48 hotels in the USA |
| Hwang and Chang (2003) | Malmquist index | 45 hotels in the Taiwan |
| Bo and Liping (2004) | DEA two-stage approach | 242 hotels in California, USA |
| Sigala (2004) | DEA stepwise | 93 hotels in the UK |
| Barros and Mascarenhas (2005) | DEA (VRS) (TE, AE, EE) | 43 hotels in Portugal |
| Shang <i>et al.</i> (2008) | DEA (three-stage) | 87 hotels in Taiwan |
| Barros, Peypoch and Solonanadrasana (2009) | DEA (Luenberger index) | 15 hotels in Portugal |
| Song, Yang and Wu (2009) | DEA the game cross-efficiency | 23 hotels in Taiwan |
| <i>In Thailand</i> | | |
| Untong (2004) | DEA (VRS) two-stage approach | 477 hotels in Northern Thailand |
| Kaosa-ard, Kruefoo and Untong (2005) | SFA (TE effect model) | 1,752 hotels throughout Thailand |

Note: TE = technical efficiency; AE = allocative efficiency; EE = total economic efficiency.

5.3 Conceptual Framework and Methodology

Managerial efficiency is the proportion of total organizational resources that contribute to productivity during the production process. A change in managerial efficiency reflects the ability of businesses to compete in a market economy (Hwang and Chang, 2003).

The assessment of relative efficiency according to the Farrell concept (1957) is measured by comparing actual performance with efficient performance at the frontier. The main quantitative techniques proposed in the literature for measuring efficiency includes DEA (using linear programming methods) and SFA (based on econometrics methods) applying the error components model (Anderson *et al.*, 1999; Barros, 2004) and the technical efficiency effect model (Kaosa-ard *et al.*, 2005).

The DEA technique can be used under the assumption of constant returns to scale (CRS), commonly known as the CCR model (Charnes, Cooper and Rhodes, 1978), or under the assumption of variable returns to scale (VRS), commonly called the BCC model, which adds an additional constant variable in order to permit VRS (Banker, Charnes and Cooper, 1984; Sohn and Moon, 2004).

There are several limitations of DEA compared with SFA: it has no error term (hence, errors in the variables would be included in the efficiency scores), there are no distributional assumptions for the inefficiency term, and DEA scores have no statistical significance. Finally, DEA is sensitive to outliers (Coelli, Rao and Battese, 1998; Barros, 2006; Barros and Dieke, 2008). However, DEA also has some advantages over SFA: it permits multiple inputs and outputs, it does not include a functional form that restricts the data and it does not need large data sets (Barros and Athanassiou, 2004; Barros and Dieke, 2008). Even if both DEA and SFA are useful for analyzing efficiency, most studies choose the DEA methodology (Coelli, Rao and Battese, 1998; Untong, 2005; Barros and Dieke, 2008).

DEA, as formulated by Banker, Charnes and Cooper (1984), and the Malmquist productivity approach, developed by Färe *et al.* (1992), are used in this study instead of SFA due to uncertainty regarding the determination of input and output variables for hotel, as well as in determining the appropriate economic model and functional form to be used in evaluating change in hotel managerial efficiency. These two techniques will be discussed briefly below.

5.3.1 Measurement of managerial efficiency using Data Envelopment Analysis (DEA)

Charnes, Cooper and Rhodes (1978) developed a mathematical model following the concept proposed by Farrell (1957) for measuring the efficiency of a firm. The methodology is applied to n firms and each is regarded as a decision-making unit or DMU, which uses m inputs to produce s outputs.

DMU_o consumes the amount x_{io} of input i ($x_{io} \geq 0$) and produces y_{ro} of output r ($y_{ro} \geq 0$). The ratio of output to input is used to measure the relative efficiency of the DMU_o, to be evaluated relative to the ratios of all firms (DMU_j; $j = 1, 2, \dots, n$; Cooper, Seiford and Zhu, 2004).

Each DMU efficiency can be obtained by maximizing the ratio of total weighted output over total weighted input for all units, subject to the constraint that all such ratios of the firms in the sample, including DMU_o, are less or equal to one. The mathematical programming problem may thus be represented as (Cooper, Seiford and Zhu, 2004):

$$\begin{aligned} \max h_o(\mu, \nu) &= \frac{\sum_r \mu_r y_{ro}}{\sum_i \nu_i x_{io}} \\ \text{subject to: } &\frac{\sum_r \mu_r y_{rj}}{\sum_i \nu_i x_{ij}} \leq 1 \quad j = 1, \dots, n; \\ &\mu_r, \nu_i \geq 0 \quad \forall i, r. \end{aligned} \quad (1)$$

where x_{ij} is the amount of input i of DMU _{j} , y_{rj} is the amount of output r from DMU _{j} , μ_r is the weight given to output r , ν_i is the weight given to input i , n is number of firms, s is the number of outputs and m is the number of inputs.

One problem with this particular formulation is that it has an infinite number of solutions: if (μ^*, ν^*) is optimal, $(\alpha\mu^*, \alpha\nu^*)$ is also optimal for any $\alpha > 0$.

To avoid this limitation the constraint $\sum_{i=1}^m \nu_i x_{io} = 1$ is imposed (Coelli, Rao and Battese, 1998):

$$\begin{aligned} \max z &= \sum_{r=1}^s \mu_r y_{ro} \\ \text{subject to } &\sum_{r=1}^s \mu_r y_{rj} - \sum_{i=1}^m \nu_i x_{ij} \leq 0; \\ &\sum_{i=1}^m \nu_i x_{io} = 1 \\ &\mu_r, \nu_i \geq 0 \end{aligned} \quad (2)$$

The above model is in “multiplier form” and we can formulate the problem as:

$$\begin{aligned}
 & \min \theta - \varepsilon \left(\sum_{i=1}^m s_i^- + \sum_{r=1}^s s_r^+ \right) \\
 & \text{subject to } \sum_{j=1}^n x_{ij} \lambda_j + s_i^- = \theta x_{i0} \quad i = 1, 2, \dots, m; \\
 & \sum_{j=1}^n y_{rj} \lambda_j - s_r^+ = y_{r0} \quad r = 1, 2, \dots, s; \\
 & \lambda_j, s_i^-, s_r^+ \geq 0 \quad \forall i, j, r
 \end{aligned} \tag{3}$$

where the s_{r0}^+ and s_{i0}^- are slack variables. θ is the efficiency score of each DMU with values ranging from 0 to 1 ($\theta \leq 1$). A value θ equal to 1 indicates a point on the frontier, hence the DMU is efficient according to the Farrell (1957) definition. Thus, the performance of DMU₀ is efficient if $\theta_0^* = 1$, $s_{i0}^{-*} = s_{i0}^{+*} = 0$, where the asterisk denotes optimal values, their efficiency score should be equal to 1 and DMU₀ is on its frontier line. If $\theta_0^* < 1$, the DMU₀ is inefficient, this can be derived from $x'_{ij} = \theta^* x_{i0} - s_{i0}^{-*}$ and $y'_{rj} = y_{r0} + s_{r0}^{+*}$, where s_{i0}^{-*} implies input surpluses and slacks, while s_{r0}^{+*} implies output shortfalls of DMU₀ (Hwang and Chang, 2003).

The above version of the model, generally called the CCR model, is the appropriate one if every DMU operates at its optimal scale of production, as it assumes CRS. However, it is not appropriate under imperfect competition or if the firms do not operate at their optimal scale of production. Therefore, Banker *et al.* (1984) proposed another model under the assumption of VRS. This alternative model (BCC) adds a convexity constraint ($\sum_{j=1}^n \lambda_j = 1$), which essentially ensures that an inefficient firm is only “benchmarked” against DMUs of a similar size.

In a further development of the model, the constraint $\sum_{j=1}^n \lambda_j = 1$ is

replaced by $\sum_{j=1}^n \lambda_j \leq 1$, so that the values of efficiency score under non-increasing

returns scale (NIRS) can also be derived. Finally, the model under the assumption of VRS that is used preferably to estimate efficiency is:

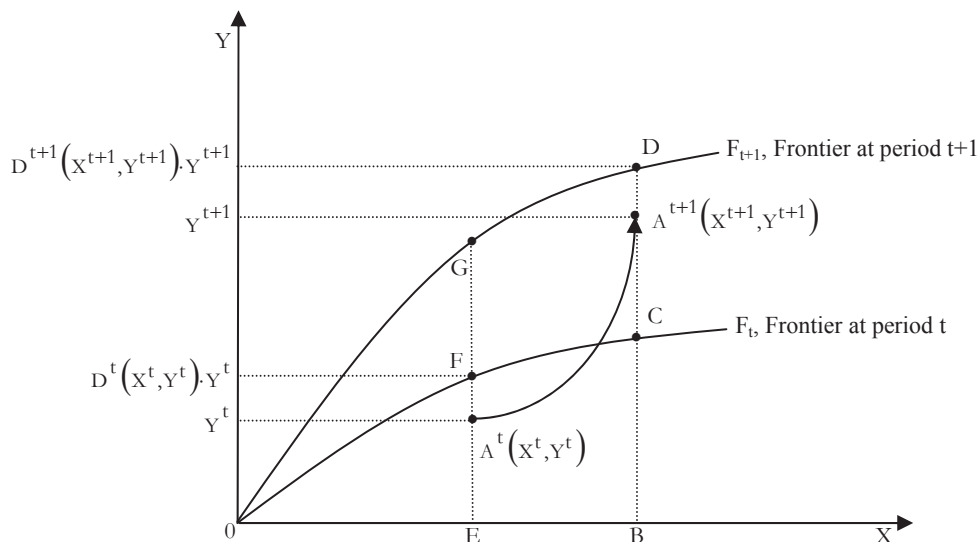
$$\begin{aligned} & \min \theta - \varepsilon \left(\sum_{i=1}^m s_i^- + \sum_{r=1}^s s_r^+ \right) \\ & \text{subject to } \sum_{j=1}^n x_{ij} \lambda_j + s_i^- = \theta x_{i0} \quad i = 1, 2, \dots, m; \\ & \sum_{j=1}^n y_{rj} \lambda_j - s_r^+ = y_{r0} \quad r = 1, 2, \dots, s; \\ & \sum_{j=1}^n \lambda_j \leq 1 \\ & \lambda_j, s_i^-, s_r^+ \geq 0 \quad \forall i, j, r \end{aligned} \quad (4)$$

If any firm does not operate at its optimal scale of production, the efficiency score under the assumption of CRS (θ_{CRS}) and the efficiency score under the assumption of VRS (θ_{VRS}) would not be equal. The ratio of $\theta_{\text{CRS}}/\theta_{\text{VRS}}$, called scale efficiency (SE), measures the impact of scale size on the productivity of a DMU (Thanassoulis, 2001). θ_{CRS} , θ_{VRS} and SE take values between 0 and 1 and $\theta_{\text{CRS}} = \theta_{\text{VRS}} \times \text{SE}$.

5.3.2 Measurement of managerial efficiency change using the Malmquist productivity approach

The Malmquist index was first suggested by Malmquist (1953) as a quantitative index for analysing the consumption of inputs. Färe *et al.* (1992) combined both the measurement of efficiency from Farrell (1957) and the measurement of productivity from Caves, Christensen and Diewert (1982) to construct a Malmquist productivity index using input and output data obtained

from DEA. This DEA-based Malmquist productivity index has proven itself to be a good tool for measuring the productivity change of DMUs (Hosseinzadeh Lotfi *et al.*, 2007). A basic conceptual framework of its application is shown in Figure 5.1.



Source: Adapted from Hwang and Chang (2003).

Figure 5.1 Measurement of Managerial Efficiency Changes, Output-oriented

From Figure 5.1, F_t is the frontier line at period t and F_{t+1} is the frontier line at period $t+1$ (the frontier line is the maximum amount of outputs that can be achieved by each amount of inputs), while $A^t(x^t, y^t)$ and $A^{t+1}(x^{t+1}, y^{t+1})$ represent input and output vectors of a DMU A at t and $t+1$ respectively. Thus, the shift in efficiency (SIE) from period t to $t+1$ can be described by;

$$SIE_{t,t+1} = \left[\frac{BD}{BC} \cdot \frac{EG}{EF} \right]^{1/2}$$

The catching-up in efficiency (CIE) from period t to $t+1$, which represents the ratio between the relative efficiency of a DMU A at $t+1$ compared with t , can be represented by;

$$CIE_{t,t+1} = \frac{BA^{t+1}}{BD} \cdot \frac{EA^t}{EF}$$

Therefore, the total efficiency change (TEC) of a DMU A from t to t+1 is:

$$TEC_{t,t+1} = CIE_{t,t+1} \times SIE_{t,t+1}$$

From the above concept, Caves, Christensen and Diewert, (1982) and Färe *et al.* (1992) applied the geometric meaning of aforementioned distance function to measure the SIE from period t to t+1, which can be represented as:

$$SIE_{t,t+1} = \left[\frac{BD}{BC} \cdot \frac{EG}{EF} \right]^{1/2} = \left[\frac{D^{t+1}(x^{t+1}, y^{t+1})}{D^t(x^{t+1}, y^{t+1})} \cdot \frac{D^{t+1}(x^t, y^t)}{D^t(x^t, y^t)} \right]^{1/2} \quad (5)$$

While CIE from period t to t+1 can be represented as:

$$\begin{aligned} CIE_{t,t+1} &= \frac{BA^{t+1}}{BD} \cdot \frac{EA^t}{EF} = \left[\frac{D^{t+1}(x^{t+1}, y^{t+1})}{D^t(x^t, y^t)} \right]^{-1} \\ &= \left[\frac{D^t(x^t, y^t)}{D^{t+1}(x^{t+1}, y^{t+1})} \right] \end{aligned} \quad (6)$$

TEC of DMU A from the period t to t+1 can be represented as:

$$\begin{aligned} TEC_{t,t+1} &= CIE_{t,t+1} \times SIE_{t,t+1} \\ &= \frac{D^t(x^t, y^t)}{D^{t+1}(x^{t+1}, y^{t+1})} \cdot \left[\frac{D^{t+1}(x^{t+1}, y^{t+1})}{D^t(x^{t+1}, y^{t+1})} \cdot \frac{D^{t+1}(x^t, y^t)}{D^t(x^t, y^t)} \right]^{1/2} \\ &= \left[\frac{D^t(x^t, y^t)}{D^t(x^{t+1}, y^{t+1})} \cdot \frac{D^{t+1}(x^t, y^t)}{D^{t+1}(x^{t+1}, y^{t+1})} \right]^{1/2} \end{aligned} \quad (7)$$

Equation (7), which is a Malmquist productivity index, can be used as a measure of efficiency change of DMU A from t to t+1. Applying this equation, we can use equation (4) to estimate efficiency at period t and at period t+1 from the two distance functions $D^t(x^t, y^t)$ and $D^{t+1}(x^{t+1}, y^{t+1})$.

In order to define the distance function $D^{t+1}(x^t, y^t)$, we must use the efficient frontier at period t+1 as the reference set for measuring the efficiency of a certain DMU at period t. This can be derived from the following model:

$$\begin{aligned}
 D^{t+1}(x^t, y^t) &= \min_{\theta, \lambda} \theta \\
 \text{subject to } &\sum_{j=1}^n x_{ij}^{t+1} \lambda_j^{t+1} - \theta x_{io}^t \leq 0 \quad i = 1, 2, \dots, m; \\
 &\sum_{j=1}^n y_{rj}^{t+1} \lambda_j^{t+1} - y_{ro}^t \geq 0 \quad r = 1, 2, \dots, s; \\
 &\sum_{j=1}^n \lambda_j^{t+1} \leq 1; \\
 &\lambda_j^{t+1} \geq 0 \quad j = 1, 2, \dots, n
 \end{aligned} \tag{8}$$

Similarly, $D^t(x^{t+1}, y^{t+1})$ can be defined using the efficient frontier at period t as the reference set for measuring the efficiency of a certain DMU at period t+1:

$$\begin{aligned}
 D^t(x^{t+1}, y^{t+1}) &= \min_{\theta, \lambda} \theta \\
 \text{subject to } &\sum_{j=1}^n x_{ij}^t \lambda_j^t - \theta x_{io}^{t+1} \leq 0 \quad i = 1, 2, \dots, m; \\
 &\sum_{j=1}^n y_{rj}^t \lambda_j^t - y_{ro}^{t+1} \geq 0 \quad r = 1, 2, \dots, s; \\
 &\sum_{j=1}^n \lambda_j^t \leq 1 \\
 &\lambda_j^t \geq 0 \quad j = 1, 2, \dots, n
 \end{aligned} \tag{9}$$

5.3.3 Description of data

The main objective of this study is to estimate managerial efficiency and the change in managerial efficiency and managerial technology of a representative sample of hotels in Chiang Mai for the period between 2002 and 2006.

The data used in this study have a panel data structure. They were collected from financial balance sheets of profit and loss statements of Chiang Mai's hotels as reported to the Department of Trade Promotion (Ministry of Commerce) in 2002 and 2006. Only those hotels with balance sheets for both years and those without deficit were selected for the sample. The sample included 43 hotels, of which 77% were registered as limited companies and 23% as limited partnership (see Table 5.3 for details).

Table 5.3 General Financial Information of Hotel samples in Chiang Mai, 2002 and 2006

| Item | 2002 | 2006 | % Change |
|---|------------|---------------|----------|
| Number of hotels | 43 | 43 | - |
| <i>Type of business registration (%)</i> | <i>100</i> | <i>100.00</i> | - |
| Partnership limited | 23 | 23 | - |
| Limited company | 77 | 77 | - |
| Average Revenue (US\$ million) ^a | 0.65 | 0.74 | 13.48 |
| Registered capital stocks (US\$ million) ^a | 1.42 | 1.68 | 18.19 |
| Liability (US\$ million) ^a | 0.91 | 1.17 | 29.23 |
| Total cost of sales (US\$ million) ^a | 0.28 | 0.31 | 11.05 |
| Selling and administrative expenses (US\$ million) ^a | 0.22 | 0.26 | 15.51 |
| Total assets (US\$ million) ^a | 2.58 | 2.20 | -14.43 |
| Shareholders' equity (US\$ million) ^a | 1.06 | 1.88 | 76.25 |
| Occupancy rate (%) | 35.05 | 44.64 | 27.36 |

Note: ^a Exchange rate in 2002=43.00 and 2006=37.93 Baht/US\$ and adjusted with general consumer price index of Chiang Mai (2002 as base year).

Source: Financial balance sheets and profit and loss statements, Department of Trade Promotion in 2002 and 2006.

The empirical analysis includes five input variables. In order to capture the capital investments of the hotels, there are three variables which measure the physical capital: number of guest rooms (Hwang and Chang, 2003), total assets and shareholder's equity. The total cost of sales represents the cost of providing the services. Finally, selling and administrative expense is the sum of all direct and indirect selling expenses and all general and administrative expenses of a hotel, such as advertising expense, franchise expense, tax, interest, etc.

The output variable is the total revenue of hotels, which is used to represent the output of the managerial process (Morey and Dittman, 1995; Anderson *et al.*, 1999). Regarding output, hotel production is a composite of

different units with different ratios of revenue as catering, souvenir shop, guest rooms, restaurant and some others. Normally, 30-50% of total hotel revenue in Chiang Mai is non-guest room revenue (Kaosa-ard, Kruefoo and Untong, 2005).

5.4 Results of the Study

The empirical analysis provided below assumes VRS and imperfect competition; thus, each production unit may not be able to operate at its optimal scale (Kaosa-ard, Kruefoo and Untong, 2005). To minimize the potential problem derived from the presence of outliers, the data have been transformed into natural logarithm.

The results are divided into two major parts. The first corresponds to the evaluation of the managerial efficiency of hotels in Chiang Mai in 2002 and 2006. The second part presents the results of the estimation of managerial efficiency and technological change of 43 hotel samples in Chiang Mai.

5.4.1 Managerial efficiency of hotels in Chiang Mai

Evaluation of managerial efficiency for 2002 and 2006 is presented in Table 5.4. Out of the sample of 43 establishments, only 6 hotels in 2002 and 7 in 2006 (hence, around 15%) were managerially efficient (the managerial efficiency index of these establishments was equal to 1). The average managerial efficiency was 76.60% in 2002 and 76.78% in 2006.

As can be seen in Table 5.4, some of the characteristics of the hotels influence the results on managerial efficiency for both periods. In particular, the size of hotel (measured as number of guest rooms or total revenue) and the room rates (the sample is split at a rate of US\$25 with an exchange rate of 40 Baht/US\$) affected the managerial efficiency. As can be seen from the table, the smaller hotels and those with cheaper rates have higher managerial efficiency than the larger hotels, with statistical significance at the 99% level of confidence. This is an unexpected result. However, the analysis of the characteristics of the establishments and the reality give some insights on the economics behind this result. Smaller hotels may have higher managerial efficiency than large hotels because those who

own and manage the business are often the same people. As described in the introduction, many of those establishments concentrate on a price competitiveness strategy that requires a strict control of costs, which can be gained through improvements in managerial efficiency. Smaller hotels are normally family run, and therefore more flexible and more managerially mobile than large hotels. In contrast, large hotels may have difficulties in reducing operation costs. Finally, a significant proportion of the large hotels do not belong to international chains, therefore missing some of the benefits that may be gained from the economies of scale derived from the international network.

Table 5.4 Managerial Efficiency of Hotel Samples in Chiang Mai 2002 and 2006 (%)

| Item | Number of hotels | 2002 | 2006 |
|--------------------------------------|------------------|--|--|
| Average managerial efficiency | 43 | 0.7660 | 0.7678 |
| <i>Type of business registration</i> | | <i>t-statistic = 1.798</i> <i>(df = 41; Sig = 0.080)</i> | <i>t-statistic = 1.588</i> <i>(df = 41; Sig = 0.120)</i> |
| Partnerships limited | 10 | 0.8432 | 0.8349 |
| Limited company | 33 | 0.7427 | 0.7475 |
| <i>Number of guest rooms</i> | | <i>F-statistic = 10.803</i> <i>(df = 2,40; Sig = 0.000)</i> | <i>F-statistic = 11.988</i> <i>(df = 2,40; Sig = 0.000)</i> |
| Fewer than 60 | 15 | 0.8223 | 0.8070 |
| 60-150 | 14 | 0.8294 | 0.8576 |
| More than 150 | 14 | 0.6325 | 0.6359 |
| <i>Total Revenue (2006)</i> | | <i>F-statistic = 15.820</i> <i>(df = 2,40; Sig = 0.000)</i> | <i>F-statistic = 16.993</i> <i>(df = 2,40; Sig = 0.000)</i> |
| Less than 5 million Baht | 16 | 0.8991 | 0.8991 |
| 5-10 million Baht | 9 | 0.7238 | 0.7336 |
| Higher than 10 million Baht | 18 | 0.6689 | 0.6682 |
| <i>Room rates</i> | | <i>t-statistic = 2.893</i> <i>(df = 41; Sig = 0.006)</i> | <i>t-statistic = 3.023</i> <i>(df = 41; Sig = 0.004)</i> |
| Less than 1,000 Baht/night | 28 | 0.8134 | 0.8157 |
| Higher than 1,000 Baht/night | 15 | 0.6777 | 0.6783 |

Source: Author's calculation.

5.4.2 Change in total factor productivity, managerial efficiency and technological of hotels in Chiang Mai

The results of applying the Malmquist productivity approach are presented in Table 5.5. This table provides critical information on understanding the evolution of Chiang Mai's hotels, providing a close look at total factor productivity. In particular, the table distinguishes between managerial efficiency and management technology. During the period from 2002 to 2006, 23 hotels in the sample were found to have improved their managerial efficiency and nearly

half of the sample (21 hotels) had higher total factor productivity, while only 5 hotels were found to have higher management technology (all of them were medium-size and large hotels).

Table 5.5 Chang in Managerial Efficiency and Management Technology of Hotel Samples in Chiang Mai, 2002-2006

| Item | Managerial efficiency | Managerial technological | Total factor productivity |
|--------------------------------------|---|---|---|
| Average values | 1.0049 | 0.9755 | 0.9871 |
| <i>Type of business registration</i> | <i>t-statistic = -0.631</i> <i>(df = 41; Sig = 0.531)</i> | <i>t-statistic = -2.157</i> <i>(df = 41; Sig = 0.037)</i> | <i>t-statistic = -0.480</i> <i>(df = 9.61; Sig = 0.642)</i> |
| Partnerships limited | 0.9944 | 0.9566 | 0.9745 |
| Limited company | 1.0080 | 0.9812 | 0.9909 |
| <i>Number of guest rooms</i> | <i>F-statistic = 1.818</i> <i>(df = 2,40; Sig = 0.176)</i> | <i>F-statistic = 3.089</i> <i>(df = 2,40; Sig = 0.057)</i> | <i>F-statistic = 2.555</i> <i>(df = 2,40; Sig = 0.090)</i> |
| Fewer than 60 | 0.9834 | 0.9632 | 0.9608 |
| 60-150 | 1.0242 | 0.9724 | 1.0046 |
| More than 150 | 1.0085 | 0.9917 | 0.9976 |
| <i>Total Revenue (2006)</i> | <i>F-statistic = 0.217</i> <i>(df = 2,40; Sig = 0.806)</i> | <i>F-statistic = 4.419</i> <i>(df = 2,40; Sig = 0.018)</i> | <i>F-statistic = 0.421</i> <i>(df = 2,40; Sig = 0.659)</i> |
| Less than 5 million Baht | 1.0022 | 0.9608 | 0.9764 |
| 5-10 million Baht | 1.0167 | 0.9700 | 0.9917 |
| Higher than 10 million Baht | 1.0013 | 0.9913 | 0.9943 |
| <i>Room rates</i> | <i>t-statistic = 0.111</i> <i>(df = 41; Sig = 0.912)</i> | <i>t-statistic = -2.135</i> <i>(df = 33.60; Sig = 0.040)</i> | <i>t-statistic = -1.437</i> <i>(df = 37.71; Sig = 0.159)</i> |
| Less than 1,000 Baht/night | 1.0056 | 0.9696 | 0.9797 |
| Higher than 1,000 Baht/night | 1.0035 | 0.9864 | 1.0008 |

Note: Coefficients with value greater than 1 indicate change in a good direction; those with a value less than 1 indicate change in a declining direction; those with a value equal to 1 indicate no change.

Source: Author's calculation.

Comparison of the average values for 2002 and 2006 shows a slightly better managerial efficiency and a decrease in management technology and total factor productivity. Hence, interpretation of the results indicates that the hotels were able to maintain the aggregate managerial efficiency in order to retain their competitiveness, but they failed to improve their management technology (due to a lack of investment). From a long-run perspective, these results may lead to future losses in hotel competitiveness.

Both, managerial efficiency and management technology performed worse in smaller hotels, in partnership companies and in hotels charging lower room rates, with statistical significance at the 90% level of confidence. A closer look at the table indicates that during the period analyzed, medium-size and large

hotels were able to catch up slightly on managerial efficiency. On the other hand, small hotels should pay more attention to improving management technology in order to maintain their competitiveness.

The results of the study reveal that more than half of the hotels did maintain their managerial efficiency, but a few hotels improved their management technology to strengthen their competitiveness (such as improving their computer system to adapt to online purchases). Increasing managerial efficiency is obviously important, but it only helps to strengthen competitiveness in the short run. Hotels should also improve their management technology in order to sustain their competitiveness in the long run.

Based on the results, the hotels can be classified into groups showing the relationship between managerial efficiency in 2006 and the change in managerial efficiency (modified from Hwang and Chang, 2003 and Barros, 2005a):

1. *Hotels with a high competitiveness and better management.* Hotels having managerial efficiency in 2006 and which have also increased their managerial efficiency with respect to that in 2002. Eleven hotels fall into this category, with a high potential to compete.

2. *Hotels with a high competitiveness but with no improvement in their management.* The managerial efficiency score of these hotels was higher than average in 2006, but they had lower managerial efficiency compared to 2002. These hotels, nine establishments fall into this group, still retain competitiveness but they may lose their potential to compete in the long run if they do not improve their managerial efficiency. With the appropriate strategy, they could develop into a group with high potential to compete.

3. *Hotels with low competitiveness but with better management.* Establishments with a managerial efficiency score lower than the average of the sample in 2006, but they have increased their managerial efficiency. In the future,

this group, composed by 12 hotels, may be able to develop and move themselves up into the group with a high potential to compete.

4. *Hotels with low competitiveness and lack of improvement.* In 2006, 11 hotels had a managerial efficiency score lower than the average, and they were also below their own score in 2002. Hence, they have a low ability to compete and show no success in improving their managerial efficiency. In a highly competitive environment, these hotels have to change their strategy or they may go out of business.

5.5 Conclusion

In earlier studies in Thailand (Untong, 2004 and Kaosa-ard, Kruefoo and Untong, 2005), the efficiency of hotels tended to be low. This article investigates the change in total factor productivity of hotels in Chiang Mai, Thailand during 2002-2006. The DEA technique was used to evaluate managerial efficiency, while a Malmquist productivity approach was used to distinguish between the change in managerial efficiency and management technology.

The results from the Malmquist productivity approach allow the researchers to estimate a decline of the total factor productivity of accommodation establishments in Chiang Mai between 2002 and 2006 and to explain the contribution of its different components. While the results prove that the hotels in the sample were successful in maintaining their managerial efficiency, the lack of investment in managerial technology caused a decline in total factor productivity.

The study also presents estimates of the impact of some hotel characteristics on the level and variation of managerial efficiency, management technology and total factor productivity. The most remarkable is the effect of the size (measured by number of rooms) and the room rate of the establishments. In particular, the level of managerial efficiency was higher for smaller establishments. While this may seem a surprising result, the distinction between total factor productivity and managerial efficiency must be clear. In the case of the latter, the authors consider

the greater flexibility of smaller establishments to be the main explanation. In particular, the larger establishments tend to implement standard processes and technologies that introduce some rigidity and that may not always provide appropriate environments for different cultures, human resources and labor relations. Regarding managerial technological change, the larger hotels performed better than the small hotels.

Hence this study, which separated total productivity into managerial efficiency and management technology, pointed out that the firms in the sample were indeed successful in maintaining managerial efficiency but failed to invest sufficiently in management technology. The results suggest some policy recommendations for the region's private and public stakeholders, but which probably could be extended to other regions. First, some caution must be exercised when applying standard processes and technologies to different areas. In particular, the labor force must be trained to adopt new technologies, some of processes may have to be adapted to the characteristics of the people who are going to implement them, and flexibility can be important for managerial efficiency in the short run. Second, a shortfall in investment technology could hamper productivity in the long term. Hence, maintaining an acceptable level of managerial efficiency is not a substitute for improving management technology or for endeavoring continuously to raise service quality in order to adapt to customers' preferences.

5.6 References

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Chapter VI

Conclusion

6.1 Research Motivation and Thesis Overview

The embryonic tourism development of Thailand began more than fifty years ago, as shown by the fact that already in 1960 81,340 international tourists visited Thailand. Since then, the country has become one of the successful examples of tourism development in the world.

The main factor under the positive evolution of Thai tourism is an appropriate combination of inherited and created resources, together with clear public investment and marketing support to the development of the tourism industry. The latter is clearly proved by the successful tourism promotion campaigns that were developed during the 80's.

The success of Thailand's tourism policies explains why the country is recognized as a model in the Southeast Asian region. However, new challenges are presented due to the global and regional changes in tourism trends. As exposed in the introductory chapter of this thesis, the two main threats are:

- An increase in the natural disasters related with climate change. Those events may have serious consequences for Thailand, as the 2011 flooding of vast areas of the country for several months had proved.
- An increase in the global and, more particularly, the regional competition due to both, the appearance of new competitor destinations and the intense planning and promotional campaigns in other competitor destinations.

As proved in chapter 2, Thailand has been continuously losing tourism market share in the last decade. Hence, confronted with these challenges, Thailand needs to design efficient tourism policies in order to recover the level of

competitiveness that lead it to be the first destination of the region at the end of the 90's.

In this general context, this thesis attempts to apply tourism economic knowledge to understand some of the changes that Thailand's tourism has experience in the last decade, and to indicate which policy focus is likely to be more effective. Thus, the main research question of this thesis is: "Which are the strategic policies that would help to increase Thailand's tourism competitiveness in next decade?"

With a holistic tourism competitiveness approach, this research proposed to combine:

- The trade theory concepts and indicators have been used to trace the evolution of tourism competitive advantage and specialization. Coverage ratio, Balassa revealed comparative advantage, normalized revealed comparative advantage and shift-share analysis have been computed.
- A demand approach has been applied to two different research questions: Firstly, the estimation of tourism long-run elasticities; analysed using dynamic ordinary least squares (DOLS) and a long-run static model of time varying parameter (TVP-LRM). Secondly the analysis of the role of destination image on tourist satisfaction and loyalty, and particularly, the effects of tourism crises on this image. A conceptual model is proposed for the complete tourism experience, and a structural equation model (SEM) is applied for estimating direct and indirect relations among its variables in different periods.
- A supply approach is applied to the accommodation subsector. In particular, chapter 5 assess the change in both, managerial efficiency and management technology, of a sample of hotels. For this objective, data environment analysis (DEA) and the Malmquist productivity approach are applied.

6.2 Contribution and Main Results of the Thesis

Before this section summarizes the main contributions and results of each chapter, it is worth mentioning that, as far as the candidate is aware, none of the research topics described in the previous section have been applied to Thailand in any national or international publication. Besides, as a remarkable contribution, a rich array of methodologies from different areas of tourism economics has been applied to answer the different research questions.

As already explained in the introduction, the thesis has been designed as four self-contained pieces of research. Hence, chapters 2 to 5 contain each a last section devoted to the description of the conclusions and policy implications derived from its research topic. For this reason, only a brief revision of the results already discussed in previous chapters will be presented in this section.

Chapter 2: Tourism Specialization and Competitive Advantage of Thailand

Regarding the methodological contributions of this chapter to the tourism literature, NRCA, which is required for countries comparisons of trade specialization, had not yet been applied to tourism. Moreover, the applications of SSA in the tourism literature used the total increase approach, however, this thesis proposed the modification of the original approach in order to analyse the dynamics in terms of growth rates.

The application to all Southeast Asian countries (except Brunei) also constitutes a contribution of the chapter. It is worth mentioning that this is one of the regions which is growing above the total average growth rate of international tourist arrivals.

Regarding the main results, the chapter proved that Thailand has been losing tourism market share during the last decade, which emphasizes the necessity of covering the topics proposed in the following chapters in order to evaluate the potential effectiveness of different tourism policy alternatives.

Moreover, the identification of the relation between each origin region and the different destinations in Southeast Asia shed light on the policy actions that should be implemented in different origin markets. Besides, for the case of Thailand it points out the advisability to increase the intra-regional focus and to implement cooperation actions with other countries in the region.

Chapter 3: Thailand's Long-run Tourism Demand Elasticities

This chapter applies dynamic ordinary least squares (DOLS) for the estimation of long-run tourism elasticities. Two methodological contributions can be indicated for this chapter. Firstly, it provided an analysis of the effect of the use of different data frequencies for estimating long-run demand elasticities. Secondly, a detailed analysis of the related countries for each destination is conducted in order to improve the estimation of the cross price elasticities.

Regarding the results, the estimation of Thailand's long-run tourism demand elasticities prove that there are different demand elasticities for each origin market, and Thailand's tourism is considered as luxury good for major origins. Remarkably, own price elasticity is lower than cross price elasticity for most origin countries.

These results have different policy implications:

- The inelasticity of demand indicates that there is little room for improving Thailand competitiveness applying price policies.
- Moreover, any price setting strategies should be particularly designed for each origin market.
- Given the importance of cross price elasticities, information about prices in competing destinations needs to be considered as the change in their prices may have more effects than Thailand's own price.

- Finally, the high income elasticity indicates that the economic instability in the main origin markets, (as the experienced since the 2008 global financial crises) may have relevant consequences for Thai Tourism.

Chapter 4: The Effect of Thailand' Political Crisis on Destination Image and International Tourists Experience

Before considering the specific research topic of this chapter, it is relevant to point out that a significant contribution is derived from the events that happened during the field work. In the early days of December 2008, an internal protest ended up with the closure of the Thai International airports for a week. As a result, all the tourist that were in Thailand during that period were not allowed to leave the country. Moreover, huge international media coverage of the event was given to, both the protest, and its effects on international tourists.

The research decision of intensifying the data collection during the events was made. Finally, a unique database with precise information about the effect of that internal political crisis on the different elements of the tourism experience was made available for tracing the chronological evolution of the tourists experience during the pre-crises, crises and post-crisis periods. The analysis of this singular database constitutes a contribution in itself.

The original conceptual model that covers all the stages of the tourist experience is also a methodological contribution. The proposed structural equation model is proved to be robust; while different circumstances alter the variables and its coefficients, they do not change the overall structural behavior level. Hence this framework can be used to test the behavior of international tourists under different circumstances.

The results showed that the causal relationships among Thailand's destination image, international tourists' experience, and destination loyalty were affected by the political crises suffered from the end of 2008 to May 2009.

The chronological estimation of the model showed that the impact of political crises tends to be short term.

Regarding relevant policy implications, the results show that the uniqueness of Thailand's social atmosphere remains the most important element of Thailand's destination image through all the analyzed period. Therefore, an important policy recommendation to enhance Thailand's tourism competitiveness is to maintain it's the differentiating image of the "Thainess" social atmosphere.

Chapter 5: Change in the Managerial Efficiency and Management Technology of Hotels: an application to Thailand

The main contribution of this chapter is derived from being the first application to the methodology in Thailand.

Regarding the main results of the chapter, the following should be highlighted:

- Medium and small hotels tend to be more managerial efficient than large hotels.
- The hotels in the sample concentrated on improving managerial effort. However, total factor productivity declined slightly owing to a lack of investment in management technology.
- This shortfall in technology investment could hamper productivity in the longer term.

Hence, the main policy implication derived from this chapter also signs to the policies which may have a positive impact on increasing Thailand's tourism competitiveness. In this sense, the results indicate the necessity to foster the investment in management technology, at least for the case of the accommodation sector. However, given the characteristics of the Thai tourism supply as compared with the case analyzed in the chapter, it seems reasonable to anticipate that this

conclusion would be generalizable. However, further research would be needed in order to consolidate this statement.

As a final summary derived from this PhD thesis, the policies recommendations for enhancing Thailand's tourism competitiveness in the following years are:

- Pricing policy would not seem to be efficient due to the low estimated price elasticity.
- Maintaining the destination image associated with a welcoming social atmosphere is an important policy in both normal and crisis situations.
- Investment in hotel management technology should be fostered in order to enhance Thailand's accommodation sector competitiveness.