

Chapter 1

Introduction

1.1 Background Information

International tourism is a fast-growing industry generating half-a-trillion dollars in annual revenues, accounting for almost 10% of total international trade, and contributing almost half of the revenues from total trade in services. International tourism is the world's largest export earner. Moreover, it is a labour-intensive industry, employing an estimated 100 million people around the world. The tourism industry has had a major role in the economic development of Thailand over the past 40 years. From 1987 to 2006, arrivals of international tourists in Thailand have increased by an excellent level. Thailand has been placed among the top 20 most popular tourist destinations in the world. International tourists to Thailand increased from 3.48 million in 1987 to 13.82 millions in 2006. The national income of Thailand from the tourism industry was ranked second only to income from commercial exports in 2006. The income received from international tourists was 50,024 million Baht and accounted for 3.85% of GDP in 1987, and changed to 7,813,050 million Baht, accounting for 6.23% of GDP in 2006 (Table 1). Grouping by nationality of international tourists to Thailand during 1971 to 2005 shows tourists from East Asia (56.29%), Europe (24.87%), United States of America (7.44%), South Asia (4.36%), Oceania (4.18%), Middle East (2.10%), and Africa (0.76%), respectively. (Figure 1)

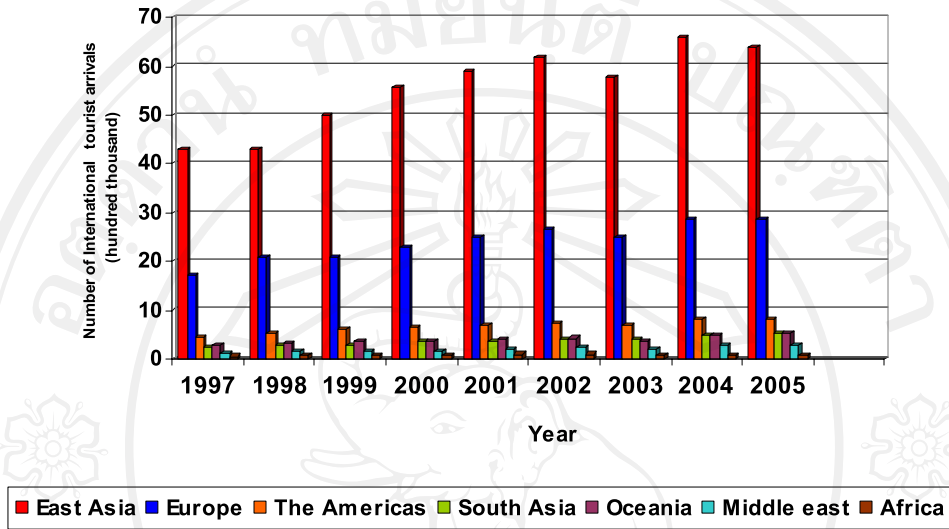
In 1981–2007, the original countries that sent the most numbers of international tourists to Thailand were Malaysia, with the highest average number of 1,578,632 (11.42%), Japan with 1,293,313 (9.36%). Korea came third with 1,101,525 (7.97%), and China came fourth with 1,033,305 (7.48%). The top 10 ranking countries of international tourists to Thailand are Malaysia, Japan, Korea, China, Singapore, United Kingdom, United States of America, Australia, Germany, and Taiwan, respectively. (Table 1) Numbers of tourists from these countries have also been continuously growing during the period of 1981–2007. (Figure 2) The ranking of international tourists in Asia (2007) coming to travel to Thailand (8%) was ranked fourth behind China (33%), Hong Kong (10%), and Malaysia (12%) in the tourism market. (Figure 3)

Table 1.1 : Average numbers of international tourists to Thailand during the years 1981-2007

Rank	Name of Country	Average Numbers of Tourists	%
1	Malaysia	1,578,632	11.42
2	Japan	1,293,313	9.36
3	Korea	1,101,525	7.97
4	China	1,033,305	7.48
5	Singapore	818,162	5.92
5	U.K.	745,525	5.39
6	U.S.A.	640,674	4.64
8	Australia	538,490	3.9
9	Germany	507,942	3.67
10	Taiwan	472,851	3.42
International Tourists from the Top 10 countries		8,730,419	63.16
Total International Tourists		13,821,802	100

Source: Tourism Authority of Thailand (TAT)

Figure 1.1 : International Tourist Arrivals to Thailand by Nationality



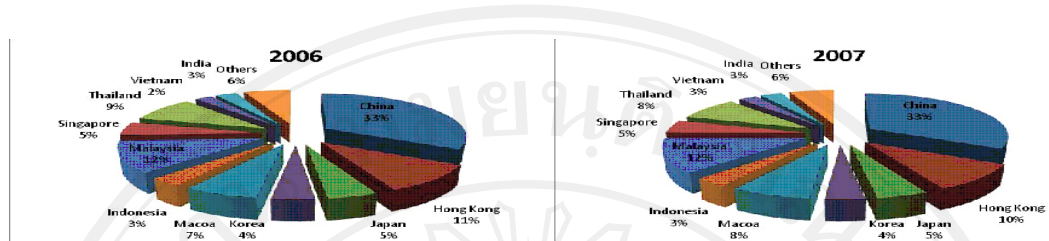
Source: Tourism Authority of Thailand (TAT)

Figure 1.2 : Top Ten International Tourist Arrivals to Thailand during 1981–2007.



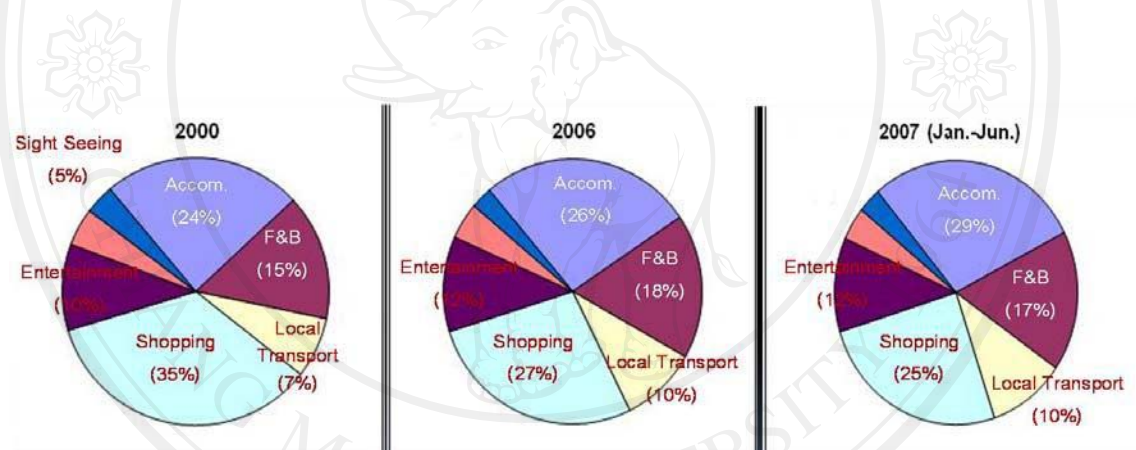
Source: Tourism Authority of Thailand (TAT)

Figure 1.3 Market share of international tourists in Asia



Source: Tourism Authority of Thailand (2007)

Figure 1.4 Tourist expenditure proportions in Thailand



Source: Tourism Authority of Thailand (2007)

Tourist expenditure proportions in Thailand has the highest proportion for shopping (25-35%), second proportion in accommodation (24-29%), and food and beverage come third (15-18%). (Figure 4) The potential of Thai tourism relies on the advantage of having resources, including natural resources. These include beaches, islands, tropical forests, coral reefs, farms, and the tropical climate. Thailand has been one of the top destinations for nature-seeking international tourists for the past years. Each part of Thailand has its own unique cultures and traditions which help spread out the spectrum of tourists' experiences when coming to the country. A long national

history and its location has created many historical and archeological sites, which interest visitors with both educational information and stunning beauty. Thai food is one of the most popular cuisines around the world. Each part of the country has its own special dishes, which visitors can explore as part of their adventurous journey. For other interests (shopping, food, MICE, golf, wellness and spas), the major provinces in Thailand that seem to meet these requirements for most international tourists are Bangkok, Chiang Mai, Chonburi (Pattaya), and Phuket.

1.2 Statement of the Problem and the Signification of the Study

Economists have tried to understand the international tourist consumer behavior through demand models.

Lim (1997) “The functional specification of international tourism demand models” critically evaluate the functional specification of econometric models in analyzing international tourism demand (U.S.A., France, Italy, Spain, U.K., Australia, Germany, Switzerland, Canada, China) in 1988-1994. The use of linear vs. log-linear regression models, the use of proxy variables, and the implications of including and omitting proxy variables. Lim and McAleer (2001) studied in topic “Monthly Seasonal Variations Asia tourism to Australia”. Try to apply the moving average technique (AR, MA or ARMA model) for estimating the seasonal components of time series to monthly tourist arrivals time series data to Australia. Lim and McAleer (2001) studied in topic “Forecasting tourist arrivals” in 1975–1999. This research examined and compared various smoothing forecasting methods based on current and past arrivals from three Asian countries to Australia. The analyst and the forecasts are in a position to evaluate and improve upon the quality of forecasts. Lim and McAleer

(2002) studied in topic A cointegration analysis of annual tourism demand by Malaysia for Australia in 1975-1996 (not include the currency and economic crisis in Asia). The method of data analysis: used the ADF test of non-stationary to determine the order of integration of the individual time series. Johansen's maximum likelihood method was used estimation and testing of the cointegration relations based on vector autoregressive models. Lim and McAleer (2003), studied in topic "Time series forecasts of international travel demand for Australia". Various Box-Jenkins Autoregressive Integrated Moving Average (ARIMA) models are estimated over the period 1975(1)-1989(4), time series analysis of ARIMA models fits various models to historical data to obtain forecasts of tourist arrivals.

Kulendran and Witt (2003) : Forecasting the Demand for International Business Tourism. mode estimation was carried out 1982 (1) – 1996 (4) and forecast evaluation using data for the period 1997(1) - 1998 (4). Using ECM, causal STSM, BSM, ARIMA(1) ARIMA(1,4) and AR(4) models. The empirical results show that relative forecasting performance is highly dependent on the length of forecasting horizon, that adding explanatory variables to the structural time-series model does not improve forecasting performance. Lim and McAleer (2003) Modeling International Travel Demand from Singapore to Australia. Data 1980-1996, using cointegration model to estimate the income, price and transportation cost elasticity's of inbound tourism from Singapore to Australia using seasonally unadjusted quarterly data. The empirical findings show that international tourism demand by Singapore for Australia is income and price inelastic. According to the cointegration model, the long-run real income, real airfare and exchange rate (proxy for price) effects are elastic. Kulendran and K. F. Wong (2005) Modeling Seasonality in Tourism Forecasting, using origin

data: 1975 (quarter1) to 2001 (quarter 4) Australia inbound. Using ARIMA¹ and ARIMA¹⁴ base on the HEGY unit root test.

Lim (2005), Inbound tourism development and patterns in China. Using data 1986-2000, using the Box-Jenkins autoregressive integrated. An integrated moving average (Arima) process. Chan, Lim and McAleer (2005) Modeling Multivariate international tourism demand and volatility using three multivariate static or constant conditional correlation (CCC) volatility models, specifically the symmetric CCC-MGARCH model, symmetric vector ARMA-GARCH model and asymmetric vector ARMA-AGARCH model. Shareef and McAleer (2007) Modelling the uncertainty in monthly international tourist arrivals to the Maldives. Using ARMA (p, q)-GJR (1, 1) The research found out that government of the Maldives and the major tour operators that organize tourist vacations have to emphasize their marketing efforts independently of each tourist source country.

Bartolome, McAleer, Ramos and Rey-Maqueieiva (2007), study Risk Management for Air passenger and International Tourist Arrival in Balearic Islands, Spain Analyzes daily air passenger arrivals from the Spanish National Airport Authority from 2001-2006 using time series model for the conditional mean and conditional volatility. Bartolome, McAleer, Ramos and Rey-Maqueieiva (2007) study A Risk Map of International Tourist Regions in Spain, the data analyzed are monthly international tourist Arrivals to the five main tourist regions in Spain, which account for more than 84 % of total international tourist arrivals, from January 1997 to April 2007. The estimated conditional volatility models are GARCH(1,1) and EGARCH(1.1), both, the second moment and log-moment conditions are calculated to provide diagnostic checks of the estimated model.

The sources above mostly focuses on international tourism demand functions based on time series analysis. Recently a lot of research about international tourist demand function has used the econometric method based on the panel data analysis.

Garin-Munoz and Amaral (2000), study demand of foreign tourist travel in the Spain, by using Unbalanced Panel Data, from the route travels 17 countries, during 11 periods of time year 1985-1995, the dependent variable is the amount of foreign tourist to stay in hotel in the Spain, Independent variable, GDP per capita, exchange foreign currency rate of the Spain and initial country, ratio of consumer price index from Spain and initial country, dummy variable is Persia war bay in year 1991, using OLS or Pooled Least-Square with Fixed Effects-Within Groups and Random Effects with GLS and First Differences. Naudy and Saayman (2004) study the factor effect tourist to travel in Africa, use Cross-Section Data and Panel Data, year 1996-2000, dependent variable is tourist amount that travel to Africa from the EU, the America, independent variable is income, the relative price, airplane ticket price, infrastructure and marketing, the political stability and the safety, topography, and health using OLS and First-Step GMM and Generalized Least Squares (GLS) but Dynamic Panel Data use Arellano-Bond First Step GMM. Maloney and Rojas (2005), study by Dynamic Panel Data, factors that affect to tourist amount to Caribbean, year 1990-2002, from 8 countries, at 29 travel destinations in the sea, dependent variable was tourist amount travel to Caribbean, independent variable compose of Real Exchange Rate and GDP per Capita. Using Fixed effects, Difference GMM, and System GMM, found that the flexibility of tourism demand bargains to be valuable tall about 4.9. Proença and Elias (2005) yearly data since 1977-2001, Pooled (OLS), Fixed Effects Model, by use Least Squares Dummy

Variable Estimation (LSDV), and Random Effects Model, by use GLS. Garín-Muñoz (2006), study tourism international demand Canary Island use Dynamic Panel Data Model data from 1992-2002, number of foreign tourist, independent variable, relative price, cost of travel or oil price, GDP per capita, dummy variable event from 11 September, Generalized Method of Moments GMM - DIFF, of , Arellano, and Bond.

There is a small amount of research in Thailand applying econometric models for international tourist demand, especially in solutions with method panel data and with method panel data used for different or unique regions (Bangkok, Pattaya, Chiang Mai and Phuket) which will be useful for policy decision-making in different strategies for raising the economies for tourism of each of unique region. These findings help marketers and tourism authorities to identify their promotion and positioning strategies to the right target market.

In order to investigate the determinants of international tourism demand to Thailand and to measure and detect the most significant factors affecting the flow of international tourists by country of origin tourist arrival patterns of major countries to Thailand the cointegration techniques used was based on Panel Cointegration while as OLS estimator and DOLS estimator were used to find long-run relationship of the international tourism demand model in Thailand as well as by using fixed and random effects for static models , and including short-run relationship estimate dynamic panel data with to test tourists different purpose on business and holiday to Thailand while dynamic panel data models adopted the generalized method of moments (GMM) and estimator (panel GMM procedures) and panel GMM of Arellano and Bond. To measure and detect the most significant factors affecting the flow of international

tourists by country of origin tourist arrival patterns of major countries in the four main tourist regions in Thailand: Bangkok, Chonburi (Pattaya), Phuket, and Chiang Mai using fixed and random effects for long run static models , and including short-run relationship estimate dynamic panel adopted the generalized method of moments (GMM).

1.3 Objectives of the Study

1.3.1 To estimate the long-run tourism and short run demand for Thailand's ten international main tourist source countries (Malaysia ,Japan, Korea ,China ,Singapore ,U.K ,U.S.A, Australia ,Germany andTaiwan.) based on panel data.

1.3.2 To estimate factor in international tourists demand from different purpose of original top ten countries to Thailand divide by dependent variables in business purpose and holiday purpose with long run static panel data models and short run dynamic panel data models.

1.3.3 To estimate international tourist arrival monthly data effect factor in international tourists demand from major countries to four main tourist regions in Thailand : Bangkok, Chonburi(Pattaya), Phuket and Chiang Mai with static long run effect and dynamic short run effect in panel data method.

1.4 Structure of the Dissertation

The dissertation entitled “Modeling international demand to Thailand: spatial and temporal aggregation” compose of chapter 1 introduction, chapter 2 methodology , The remainder of the dissertation is organized as follows. chapter 3 detect the most significant factors affecting the flow of international tourists by

country of origin with static panel data and dynamic panel data models with panel GMM procedures, and panel GMM of Arellano and Bond. In chapter 4 panel unit root and panel cointegration techniques were used, while as OLS estimator and DOLS estimator were used to find long-run relationship of the international tourism demand in Thailand as well as panel data estimator with fixed and random effects to test tourists demand with different dependent variables purpose from the ten major countries traveling for business and holiday. Chapter 5 The Monthly data from January 1992 to December 2006 were used for the other dependent variable: from each of the ten major countries that traveled to four important tourism destinations in Thailand namely Bangkok, Chiang Mai, Chonburi(Pattaya), and Phuket. The long run international tourism demand was modeled by estimation of the fixed effects and random effects in the panel data sets. Meanwhile, the short – run relationship was estimated by using dynamic panel data. Chapter 6 provides some concluding remarks and policy recommendation.