

Structural Model for Urban Tourism in the Pattern of Twin Cities: Nakhon Phanom Province, Thailand

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Article Info

Volume 83

Page Number: 2870 – 2886

Publication Issue:

May - June 2020

Abstract:

This article aims to create a structural model for urban tourism in the pattern of twin cities Nakhon Phanom Province, Thailand. This research is using Structural Equation Modeling (SEM) by AMOS program to develop structural model of the factors influencing urban tourism and the pattern of twin cities. The data were collected from 400 samples from tourists visiting Muang District, Nakhon Phanom Province, Thailand. This study formulated a final structural model according to the tourist opinions from Muang District, Nakhon Phanom Province, Thailand, as the external environmental factors consisted of the following 2 components: 1) Political Legal Environment and 2) Ecological and Natural Environment. The internal environmental factors consisted of the following 2 components: 1) Tourism Enterprises and Infrastructure of Tourism and 2) Tourism Resources. The twin cities model included Events and Infrastructure.

Article History

Article Received: 11August 2019

Revised: 18November 2019

Accepted: 23January 2020

Publication: 10May2020

Keywords: Structural Model, Urban Tourism, Twin Cities, Nakhon Phanom Province, Thailand.

I. INTRODUCTION

Tourism increasingly constitutes a central component of the economy, society and geography of cities and urban areas worldwide. It has become a powerful engine for the local economic and social development of cities by offering a range of cultural, architectural, technological, social and natural experiences and products for leisure and business. (Taleb, 2018)

Over the last decades, urban areas have been rapidly transforming and their populations have grown remarkably. According to the United Nations, in 1990, 43% of the world's population lived in urban areas; by 2015, this share had grown to 54% and is expected to reach 60% by 2030.1 Alongside rapid urbanization, the growth of the tourism sector led by economic development, lower transport costs, travel facilitation and a growing middle class in advanced and emerging economies, made cities increasingly popular destinations for business and leisure tourists. Over the past decades, international tourists have gone from 25 million

international arrivals in 1950, to over 1.3 billion in 2017. World Tourism Organization (UNWTO) forecasts that the sector is expected to continue growing 3.3% annually until 2030 a year in which 1.8 billion tourists will cross borders. (World Tourism Organization, 2018)

Thailand continued to position itself as a destination for travelers to visit by staying in the top 10 in the latest report by the UN travel agency. (Marukat, 2018) With 35.4 million visitors in 2017, the kingdom dropped one spot from ninth in 2016 to 10th last year, the United Nations World Tourism Organization said in its recently released tourism highlights. (World Tourism Organization, 2019). France remains the most popular destination, with 86.9 million travelers, while Spain overtook the United States as the second most-visited destination when it recorded 81.8 million international arrivals, compared with 75.9 million in the US. (World Tourism Organization, 2018) Thailand remained fourth in tourism earnings, with US\$57.5 billion, while Macao and Japan cracked the top 10 for the first time. The top three countries enjoying the most spending from

visitors were unchanged, led by the US (\$210 billion), Spain (\$68 billion) and France (\$60.7 billion). (Marukatat, 2018)

Nakhon Phanom is a province in northeastern Thailand, bordering Laos to the east over the Mekong River. It's known for the huge, ornate Wat Phra That Phanom temple, a significant religious site said to contain the Buddha's breastbone. Thais and Laotians are both common pilgrims to this highly venerated Buddhist shrine where they come to ask for blessings. Throughout the history of Nakhon Phanom, Laotians and people from smaller ethnic minority groups migrated across the Mekong River giving modern Nakhon Phanom a distinctive cultural fusion that is apparent in the local language, customs, and cuisine. Visitors can appreciate this culture during the Bai-Sri-Su-Kwan ceremony or by witnessing one of the region's folk dances, such as the Sri Kotrabun, FonPhu Thai, Sek-Ten-Sak, and So Tung Bung, some of which are only performed on special occasions. In addition to its rich culture, Nakhon Phanom, which literally means "city of hills" is an area with great natural beauty and which features a number of opportunities for visitors to participate in outdoor activities, including Trekking in the national Park or shooting a round of golf (Tourism Authority of Thailand, 2018).

The concept of Twin Cities or Sister Cities was widespread after World War II; Europe and America played an important role in bringing this concept to practice. In Europe, the term is Twin Cities whereas in America, Sister Cities is the term they use. Nevertheless, their meanings are similar, but with differences of approach. When pairing cities after World War II, they focused on different matters; in Europe, they focused on cultural exchanges while in America, they focused more on peace and unity establishment as a consequence of the need to recover the country and develop the economy after the war. The concept of Twin Cities became widespread in many countries as a continual activity or project including Thailand (Office of Industrial Economics, 2012). The concepts of Twin Cities are the main mechanism to improve the area between Thailand and neighboring countries, connecting cities for development. (Office of Industrial Economics, 2012). International relationships in the pattern of twin cities is one of international cooperation that are widely operated

in many countries. The initiation of twin cities will create support at the level which countries can be developed into strong cooperation countries due to the characteristics of cooperation. Twin cities can create trust and friendliness better than other forms of cooperation (Nithipatthanathorn, 2016)

As aforementioned, the researcher perceives the importance of frontier area development in Mekong groups. The potential tourism management was set up since there was connectivity between Nakhon Phanom Province and Khammouan District, Lao PDR. The Third Thai-Lao Friendship Bridge (Nakhon Phanom-Khammouan) is considered as a door which connects the two cities. structural model for urban tourism in the pattern of Twin Cities: Nakhon Phanom Province, Thailand was proved by collecting empirical data for quantitative analysis. The outcome revealed policies and strategies to urban tourism management in the pattern of twin cities.

II. LITERATURE REVIEW

Urban Tourism

Urban tourism has become a part of the local economy; aside from tourism supporting the city's economy, it also benefits the society and cultures as well. Tourism provides opportunities for employment as well as social and cultural relationships among people around the world. A journey to different parts of the world can be very interesting nowadays; travelers have opportunities to explore new places and also rest from their daily routines. These things develop new ideas for the tourism industry's marketing. Therefore, both big and small cities are viewed from new angles for tourism promotion in order to introduce new cities and gradually become part of a wider tourism industry (Edwards et al., 2008).

Harvey (1989) stated that urban tourism comes from the development of a new city because the city was getting decadent from the development of industry resulting in big main cities. Moreover, Jansen-Verbeke (1996) said that urban tourism is a journey within the city to visit buildings with ancient architecture or important historical places such as museums, art galleries, theatres, and to watch sports and attend festivals and geographical and architectural sightseeing within the city. Urban tourism is very popular in many important cities of the world such as London.

Uysal (2015) proposed the definition of urban tourism that emphasizing the word “urban” only is not enough because the activities and tourism resources that the visitors can access are not limited to urban areas only. That is, aside from visiting museums and seeing unique architecture, visitors or travelers can also have access to spa and other health services that are not necessarily related to the city itself (Ashworth & Page, 2011). Hence, Gilbert & Clark (1997) summarized that the study of urban tourism is the study of the relationship between every form of tourism related to a city’s environment. In Thailand, there is a definition of Urban Tourism which is a journey within urban areas focusing on the activities usually happening in the city such as visiting museums, city tours and shopping. (Gilbert & Clark, 1997) However, there needs to be city categorization according to their unique features such as historical cities, passing cities, tourism cities, and coast cities and so on. (Tourism Authority of Thailand, 2008).

Therefore, it can be concluded that urban tourism is a tourism phenomenon which is not only associated to destinations but also tourism activities and city tours as well as historical communities or architecture tours including cultural or artistic activities (e.g. concerts, exhibitions and conferences) and joining the life style of urban people (Ministry of Tourism and Sports, 2015)

Poojinda & Boonsom, (2016) conducted a study about a city’s categorization has to consider its role, composition, features, the selection of suitable theories of urban development, and its success. Indicating factors, composition criteria, and supporting factors which can be applied to the city plan in other countries will result in successful city development leading to suitable city plans for the context of Thai society and for further application. This works especially with the cities with special features and plays an important role in driving the country’s development such as entertainment tourism cities, industrial cities, government-service centre cities, education cities, and shipment and logistics centre cities. It is necessary to have a suitable and sustainable guideline for the development in the future in order to help solve problems in these areas as well as serve the country’s development effectively. Therefore, the author has collected theories about suitable and successful city development as well as indicating factors, composition criteria, and other supporting factors which can be

applied to city development to plan tourism. The factors are as follow: 1) External Environment which consists of political and legal environment; social, cultural and environmental environment; 2) Internal Environment which consists of tourism businesses, tourism resources, and tourism infrastructures (Akville & Gabriele, 2015).

Fainstein & Judd (1999) stated that urban tourism consists of three important groups which are tourists, the tourism industry, and the city. These three groups link together through the establishment of complex ecology which is the demand and taste of the tourists as indicators of the environmental development of the city later leading to changes in the urban tourism industry in order to respond to the tourists and tourism industry.

Compositions of Urban Tourism

Urban development nowadays is a consequence of people living in a city and economic growth. The bigger the economic growth, the more developed the city becomes. This includes the development of utilities, public assistance and the physical environment of the city (Borchardt, 2013). Tourism then plays an important role in urban area development. Urban development is an important symbol of the city’s image and also a unit of pleasant area to plan a development of urban tourism. Some specific problems that need to be solved are natural conflicts and traffic problems especially in the heart of the city. Most of the urban development plan should consider many variables (Dora & Zrinka, 2006).

Evangelos (2007) investigated the competition and marketing of urban tourism in Athens, Greece and divided the factors for urban tourism management into two main categories; the heritage sites and the supplement elements. The latter is presented in forms of transportation, hotel service, shopping facilities, restaurants, clubs, pubs and other forms of entertainment. The elements listed here were used as a baseline for the development of Barcelona’s Olympic town in 2004. The pros and cons derived from an analysis of these factors are used for policy allocation.

Hogskolan (2010) found that the development of urban tourism could help trigger mega-scale economic development of the city by helping increase the demand and profit for hotel and conference businesses and other businesses in the community. Urban tourism development is good for the operations of other business

such as; guesthouses, restaurants, parks, museum, shopping centers, among others. These factors are important elements for urban tourism management in Sweden (Page, 2002). The success of urban tourism resulted from the ability of all tourism-related sectors to reach their optimal goals in providing the best service to satisfy the needs of the tourist clients (Ashworth & Page, 2011)

Robin & Haywantee (2010) investigated the components of urban tourism in Port Louis, the capital of Mauritius. Port Louis, the capital city of Mauritius, is the research site for this study. The city is one of the most popular destinations in Mauritius and is cited as one of the most popular places among tourists in a recent survey of outgoing tourists (Ministry of Tourism, Leisure and External Communication, 2007). The criteria of the urban tourism components into the following categories; places and tourism eminent, cultural facilities, physical characteristics, secondary elements, and additional elements.

Christian (2006) investigated factors needed for the urban tourism and creative industry in South Africa. It was speculated that urban tourism of Johannesburg in 2030 would be developed based on 9 areas including; monetary and service business, information technology and telecommunication, wholesaling and retailing, professional tool products, other products, food and beverage, bio-technology, vehicle parts and creative industry. The latter is supportive for the creation of food and drink which is an element that most tourists use as a baseline for decision making about which tourists' destination they would pick.

Based on the review of literature relating to urban tourism, it is clear that tourism is the dominant factor that causes the development of city areas. Tourism as a representative of the city. The planning of urban tourism should incorporate many different factors. The factors obtained in this study helps the researcher to specify tourism areas that need to be developed to improve urban tourism in Muang District, Nakhon Phanom Province, Thailand as shown in Table 1

Structural Urban Tourism City Development	
External Environment	Internal Environment
1. Political and Legal Environment - Tourism Policy	1. Tourism Resource - Historical Resources

Structural Urban Tourism City Development	
External Environment	Internal Environment
- International Agreements - Restrictions for Person from Particular Countries to Arrive (migratory restrictions, visas) 2. Economic Environment - Monetary Policy - Budget for Tourism Development - Employment - National Income 3. Socio-cultural Environment - Demography - Education - Health Security - Criminogenic Situation 4. Ecological and Natural Environment - Water Pollution - Air Pollution - Soil Pollution - Noise Pollution 5. Technological Environment - Website - Social Media - Mobile Applications - Virtual Reality and Augmented Reality	- Archaeological Site - Religious Sanctuary - Historical Building - Museums - Monument - Natural Resources - Landscape - Water - Attraction - Climate - Wildlife and - Flora - Natural Phenomenon - Natural Parks - Art and Cultural /Traditional /Event Resources - Community - Night Life - Events - Art Galleries 2. Tourism Enterprises - Travel Agency and Tour Operation - Transportation - Recreation Enterprise - Accommodation - Restaurant - Souvenir Shop 3. Infrastructure of Tourism - Tourism Information - Financial Institutions - Logistics - Safety for Tourists

Table 1. Structural Urban Tourism City Development

Twin Cities for Tourism

A brief history of twin cities establishment

Town twining is the best concept in planning and model making that broadly used in different (Clarke, 2011). Town twinning is the western concept in establishing the relationships of two towns or cities that share common features; physical geography, politic, society, and culture, regardless of the distance between the two cities. It can be created at national and internal and also formal and informal levels. (Manorom, 2009). In Thailand, the twin cities concept is viewed as a good start

of relationship maintaining between two parties. It can result in diverse types of cooperation for common interest of the involved cities, for instance, tourism, culture, trade, investment, education, and health care. It can also be used as a relationship development tool which greatly assists the government policy for international affairs. Furthermore, it elevates the levels of relationship between two countries in other important aspects (Unrat, 2010). The establishment of twin cities between Thailand and other countries in the Greater Mekong Sub-region is taking place on the basis of the integrative economic possibilities of the six countries; Cambodia, China, Lao PDR, Myanmar, Vietnam and Thailand. The key of this economic cooperation was the great support received from Asian Development Bank (ADB) in the 1990's policy of The Greater Mekong Sub-regional Economic Cooperation (GMS-EC). (Asian Development Bank, 2015). Moreover, the trade cooperation at the local levels was noticeably improved due to the policy of the Thai government led by General Chatichai Choonhavan that aimed to change the 'battlefield' into a synergistic trading field (Manorom, 2009).

Criteria in twinning the twin cities.

The Diplomatic Vocabulary and Abbreviation Book (The Second Edition) for Institute of Foreign Affairs, the Ministry of Foreign Affairs of Thailand defines the term Twin Cities as "the agreement of close relationship establishment between countries or cities in different countries." Thailand had the first sister cities relationship established on 19 February 1962. (Nithipatthanathorn, 2016) and It is Resolution Sister City Affiliation between Bangkok and Washington D.C., the capital of the United States of America. Nowadays, Thailand is proceeding with the sister cities establishment under the Bagan Declaration of Ayeyawady – Chao Praya – Mekong Economic Cooperation Strategy (ACMECS) which was signed on 12 November 2003 by 5 countries' leaders; Cambodia, Lao, Myanmar, Vietnam and Thailand. (Office of Industrial Economics, 2012). The Bagan Declaration aims to encourage collaborations from all participants and supports the bilateral project, and sister cities establishment is one of the projects in the plan of action as the supporting mechanism that drives the economic cooperation strategic plan of every country to reach their achievements. The common economic goals between those countries are defined as the following:

1) To connect the services, trading, and money

transactions in the region.

2) To establish the logistics industry.

3) To create space for the sharing of markets of agricultural products.

4) To connect tourist attractions.

5) To set up the industrial zones and co-production zones that encourage industrial

Labour opportunities.

6) To develop the co-infrastructure. (Office of Industrial Economics, 2012).

Bernadia & Peter (2009) conducted a study of successful factors in town twinning in Asia. The important elements were shown to be the following:

1) Reciprocity: A flow of benefits in both directions (provider and receiver) and satisfaction with the project/activities from both sides.

2) Free flow of information: Enhances friendship relations between staff members of participating localities. This was true of the relationship between city and city. Providing information when requested built trust and respect.

3) Understanding : Understanding can be enhanced through written agreements (such as the Memorandums of Cooperation) or through consistent contact and discussions.

4) Cost-sharing and cost-effectiveness: Cost-sharing between cities helped pave the way for partnership. This concept is important for the sustainability of City to City cooperation program and projects, as it encourages less dependency on the contribution from the wealthier partners.

5) Real examples: Real examples, includes both soft (i.e., administrative and management tools and so on) and hard (i.e., infrastructure and so on) changes that demonstrate the success of the project and engender deeper mutual commitments.

6) Leadership: We interpret the first to be related to consistency and to trait qualities seen as important in leaders, such as intelligence, creativity, diplomacy and tactfulness, knowledge ability, persuasiveness and social skills.

7) Support from higher levels of government: Political support from higher levels of government (state, prefectural, or national) is key to successful city to city cooperation.

8) Commitment: The commitment to link is arguably the precursor to any cooperative activity and must be

experienced by all parties involved. The commitment can be manifested in the efforts and time expended by a member of the network and the resources (human and financial) devoted to the exercise.

9) Community Participation : Community-wide participation in the effort can come from non-governmental organization or community-based organization working with local governments. The important aspect of this element is that the linkages between members go deeper than local governmental officials and include members from the civil societies of each city. As cities are diverse entities, any cooperation between two different cities must include a number of different voices from each locality.

Anischenko & Sergunin (2012) cited that the cooperation among the countries of the Baltic Sea determined the new criteria of twin cities as shown below:

1) Location: The border cities that located across from each other.

2) History: The cities that share historical features, for example, Enso in Finland

which was divided into two parts after the World War II and became Imatra and Svetogorsk.

3) Cooperation: Even though the two cities used to share history and a border, they both need to create new cooperation linkages.

4) Symbol: The twin cities are located right across from each other and are divided by the river, such as Narva- Ivangorod, Valga – Valka and Tornio – Haparanda. In this case, the bridge is considered as the symbolic feature for the linkage.

5) Ethnic: The population of the twin cities consist of minorities and use two languages in communication.

6) Agreements: Town twinning is based on the official agreements and operation rules and regulation between two cities.

Time has changed the concept of border between two countries, and it became the subject of interest at the local level cooperation. At present, the concept of “Binational” is widely discussed. Town twinning in Europe and North America accepted the importance of the local in terms of history and background. Jan (2001) stated that the binational cities in the past was based on these factors:

1) Origin: The origins of adjunct border cities started in the same period, such as

Narva and Ivangorod. However, the development of each city progressed separately after divided. (the United

States of America / Mexico)

2) Age: The increase in the integration of the two sides in the boundary that

may occur began in the 19th century (Narva / Ivangorod), between Europe and the US border region and Mexico after World War II, and German and Polish border, after the collapse of the Soviet Union. The timing of separation and integration

from the sequence of events causes both cities to have similar and different changes.

3) Size: Border cities that are between each other, and have different sizes. The size of population can be the case study, and it will be more effective if the size is big.

4) Appearance: It depends on the specific history of that city. The appearance of the building and the urban landscape may be similar or different.

5) Culture: The scholars identified that the twin cities division is based on two

categories; 1) the twin cities use their state languages and 2) some twin cities speak 2 languages and share the dialect.

6) Minorities: In most border cities, there are only minorities from neighboring countries live in them. However, there a lot of Russian in Baltic and a lot of Mexicans on the US border.

7) Relations; Most of the border twin cities have a relationship in solving problems together. The locals often cross the borders for their relaxing trips, and buy and sell things, work and keep contact with each other.

As mentioned above, the author gathered criteria in matching twin cities in both the domestic level and international level. The author studied various keywords such as, twin cities, sister cities, local government international partnerships/alliances and city-to-city transnational linkages/networks. The author supposed that aforementioned relationships had the same goals and objectives. Therefore, the author summarized the criteria in matching twin cities and applied with the research on structural relationship model between urban tourism and the pattern of twin cities in Nakhon Phanom Province, Thailand, as following:

- 1) History
- 2) Culture
- 3) Geography
- 4) Location
- 5) Politics
- 6) Border Regime

- 7) Infrastructure
- 8) Symbolic
- 9) Minorities
- 10) Community Participation
- 11) Relations
- 12) Agreements
- 13) Linkage of Public Service
- 14) Events

III. METHODOLOGY

Conceptual research model and hypotheses

Conceptual research model and hypotheses are formed from the literature which is reinforced by previous studies that the author concluded is as follows:

H1: Factors of the external environment of urban tourism affect the pattern of twin cities in Nakhon Phanom, Thailand

H2: Factors of the internal environment of urban tourism affect the pattern of twin cities in Nakhon Phanom, Thailand.

Conceptual research has the purpose of showing “influence” between factors, or latent variables that have an effect on other factors, according to empirical data collected from the sample groups. Comparisons are made between previously researched conceptual models and the present structural model to see whether it is a model fit shown in Figure 1

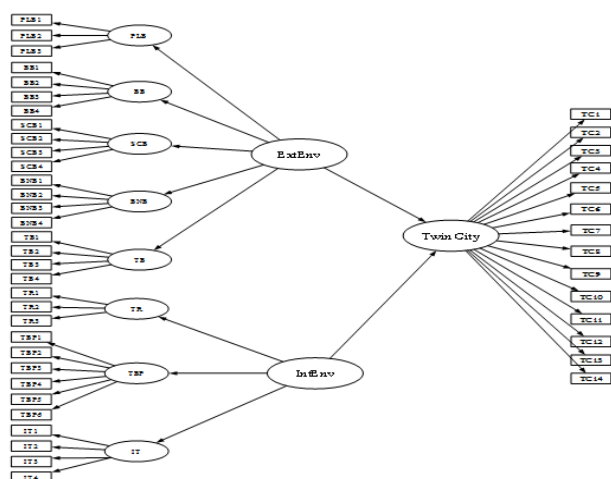


Figure 1. Conceptual research model.

The analysis of the external environment relating the structure of the development of urban tourism in the pattern of twin cities in Nakhon Phanom, Thailand

consists of the following factors shown in the Table 2.

Table 2. Factors of the External Environment Relating to the Structure of the Development of Urban Tourism in the Pattern of Twin Cities

Factor	Items
1. Political and Legal Environment : PLE	PLE 1 : Tourism Policy
	PLE 2 : Restrictions for Person from Particular Countries to Arrive (migratory restrictions, visas)
	PLE 3 : International Agreements
2. Economic Environment : EE	EE 1 : Monetary Policy
	EE 2 : Budget for Tourism Development
	EE 3 : Employment
	EE 4 : National Income
3. Socio-cultural Environment : SCE	SCE 1 : Demography
	SCE2 : Education
	SCE3 : Health Security
	SCE 4 : Criminogenic Situation
4. Ecological and Natural Environment : ENE	ENE 1 : Water Pollution
	ENE 2 : Air Pollution
	ENE 3 : Soil Pollution
	ENE 4 : Noise Pollution
5. Technological Environment : TE	TE 1 : Website
	TE 2 : Social Media
	TE 3 : Mobile Applications
	TE 4 : Virtual Reality and Augmented Reality

The analysis of the internal environment relating the structure of the development of urban tourism in the pattern of twin cities in Nakhon Phanom, Thailand consists of the following factors shown in the Table 3.

Table 3. Factors of the Internal Environment Relating to the Structure of the Development of Urban Tourism in the Pattern of Twin Cities

Factors	Items
6. Tourism Resource:TR	TR 1 : Historical Resources
	TR 2 : Natural Resources
	TR 3 : Art and Cultural /Traditional /Event Resources
7. Tourism Enterprises:TEP	TEP 1 : Travel Agency and Tour Operation
	TEP 2 : Transportation
	TEP 3 : Recreation Enterprise
	TEP 4 : Accommodation
	TEP 5 : Restaurant

Factors	Items
	TEP 6 : Souvenir Shop
8. Infrastructure of Tourism: IT	IT 1 : Tourism Information
	IT 2 : Financial Institutions
	IT 3 : Logistics
	IT 4 : Safety for Tourists

The analysis of the pattern of Twin Cities in Nakhon Phanom, Thailand consists of the following factors shown in the Table 4.

Factors	Items
9. Twin Cities : TC	TC1 : History
	TC 2 : Culture
	TC 3 : Geography
	TC 4 : Location
	TC5 : Politics
	TC6 : Border Regime
	TC7 : Infrastructure
	TC 8 : Symbolic
	TC 9 : Minorities
	TC10 : Community Participation
	TC11 : Relations
	TC12 : Agreements
	TC13 : Linkage of Public Service
	TC14 : Events

Questionnaire design and Data Collection

The questionnaire was used to collect the data relevant to the factors/items of urban tourism and twin city in this research. The questions in the questionnaire were designed based on the initial factors/items stated in Table 2-4. The questionnaire was comprised of 3 parts. The first part aimed to factors of the external environment relating to the structure of the development of urban tourism in the pattern of twin cities (38 questions). The second part aimed to factors of the internal environment relating to the structure of the development of urban tourism in the pattern of twin cities. (27 questions). The third part aimed to factors of twin city pattern in Nakhon Phanom, Thailand. (14 questions). Considering the measurement of the items in the questionnaire, were measured with a 5-level Likert scale ranging from “strongly disagree” to “strongly agree”. The questionnaire was conducted group of tourists in Muang Nakhon Phanom, Thailand, with 400 samples for analysis.

IV. MODEL DEVELOPMENT

Exploratory Factor Analysis: EFA

An Exploratory Factor Analysis (Arbuckle, 2011) was

conducted on the information gathered from questionnaire respondents, including responses to part 1, on 5 external factors with 19 topics; part 2, analyzing 3 internal factors with 13 topics. The information from the aforementioned parts of the questionnaire was used to determine variables, which were then grouped according to their similar analysis results. For the purposes of the exploratory factor analysis (EFA) in this research, these variables were called factors, or dimensions. The varimax rotation technique (rotation on an orthogonal basis) was applied on the variable groupings by inputting data into a ready-made program, while Kaiser-Meyer-Olkin (KMO) was >0.6 (Tabachnik & Fidel, 2001) and Bartlett’s Test of Sphericity = 0.000 (Sig.). Then, the reliability of all factors was verified.

Confirmatory Factor Analysis: CFA

A Confirmatory Factor Analysis, or CFA, (Arbuckle, 2011) was conducted to measure the statistical results and to “confirm” whether or not the analysis had resulted in a grouping of variables which could serve as model fitting factors. In this research, a measurement model was used to analyze and confirm the groupings of variables, categorized into 3 factors consisting of external environment, internal environment, and twin cities model. Trials among the 3 factors by inputting data into the ready-made program led to a complete model fit.

Structural Model

The Structural Model (Byrne, 2010) has the purpose of showing “influence” between factors, or latent variables that have an effect on other factors, according to empirical data collected from the sample groups. Comparisons are made between previously researched conceptual models and the present structural model to see whether it is a model fit. In this research, the conceptual framework was created using places of Muang District, Nakhon Phanom Province, Thailand. After that, the data were inputted into the ready-made program and analyzed in order to see correlations of any dyads of variables in the model.

V. RESULT AND DISCUSSION

The Results of Exploratory Factor Analysis (EFA) of Muang District, Nakhon Phanom Province, Thailand

Exploratory Factor Analysis of External Environment of Muang District, Nakhon Phanom Province, Thailand

The computer program received the data, input with Kaiser-Meyer-Olkin (KMO) at 0.930 (KMO>0.6) (Tabachnik& Fidel, 2001) and Bartlett's Test of Sphericity at 0.000 (Sig.). Then the reliability of each factor was examined. In part 1, there were 3 factors, and

Cronbach's Alpha values for factors 1-3 were 0.927, 0.928, and 0.929, respectively. Every value was over 0.7 (Cronbach's $\alpha > 0.7$) (Nunnally, 1987), indicating reliability as presented in Table 5

Table 5 Factor Loading for Exploratory Factor Analysis of External Environment of Muang District, Nakhon Phanom Province, Thailand

Item	Component			Cronbach's α	
	1	2	3		
SCE2	0.729	0.292	0.131	.927	.932
ENE4	0.716	0.209	0.288		
SCE3	0.672	0.4	0.125		
EE4	0.633	0.449	0.075		
ENE3	0.605	0.216	0.487		
SCE1	0.591	0.161	0.149		
ENE1	0.579	0.29	0.424		
ENE2	0.531	0.157	0.524		
SCE4	0.524	0.476	0.234	.928	
EE2	0.318	0.691	0.121		
PLE3	0.169	0.709	0.161		
PLE2	0.174	0.707	0.287		
PLE1	0.171	0.705	0.279		
EE1	0.377	0.711	0.07		
EE3	0.423	0.616	0.149	.929	
TE4	0.066	0.183	0.826		
TE3	0.122	0.243	0.809		
TE2	0.235	0.154	0.753		
TE1	0.41	0.139	0.707		

According to Table 5, factor loading for the exploratory factor analysis of the external environment of Muang District, Nakhon Phanom Province, Thailand led to categorizing the factors into 3 groups. The first group of factors consisted of variables SCE2, ENE4, SCE3, EE4, ENE3, SCE1, ENE1, ENE2, and SCE4; the second group of factors consisted of variables EE2, PLE3, PLE2, PLE1, EE1, and EE3; and the third group of factors consisted of variables TE4, TE3, TE2, and TE1. The researcher named each group of factors: the first group being named "Socio-Cultural and Ecological Natural Environment (SCE and ENE)", the second group being named "Political Legal and Economic Environment (PLE and EE)", and the third group being named "Technological Environment (TE)".

Exploratory Factor Analysis of internal environment of Muang District, Nakhon Phanom Province, Thailand

The computer program received the data, input with Kaiser-Meyer-Olkin (KMO) at 0.919 (KMO>0.6) (Tabachnik& Fidel, 2001) and Bartlett's Test of Sphericity at 0.000 (Sig.). Then the reliability of each factor was examined. In part 2, there were 2 factors, and Cronbach's Alpha values for factors 1 and 2 were 0.918, and 0.922, respectively. Every value was over 0.7 (Cronbach's $\alpha > 0.7$) (Nunnally, 1987), indicating reliability as presented in Table 6

Table 6 Factor Loading for Exploratory Factor Analysis of Internal Environment of Muang District, Nakhon Phanom Province, Thailand

Item	Component		Cronbach's α	
	1	2		
IT1	0.828	0.101	.918	
IT2	0.809	0.221		
TEP2	0.766	0.336		
TEP6	0.735	0.143		

Item	Component		Cronbach's α	
	1	2		
TEP3	0.711	0.251	.925	
TEP4	0.637	0.359		
TEP5	0.637	0.427		
IT3	0.633	0.342		
TEP1	0.616	0.449		
IT4	0.597	0.431	.922	
TR1	0.141	0.837		
TR2	0.245	0.775		
TR3	0.341	0.746		

According to Table 6, factor loading for the exploratory factor analysis of the internal environment of Muang District, Nakhon Phanom Province, Thailand led to categorizing the factors into 2 groups. The first group of factors consisted of variables IT1, IT2, TEP2, TEP6, TEP3, TEP4, TEP5, IT3, TEP1, and IT4. The second group of factors consisted of variables TR1, TR2, and TR3. The researcher named the first group of factors “Tourism Enterprises and Infrastructure of Tourism (TEP and IT)” and the second group “Tourism Resources (TR).”

The Results of Confirmatory Factor Analysis (CFA) of Muang District, Nakhon Phanom Province, Thailand.

Confirmatory Factor Analysis (CFA) (Arbuckle, 2011) provided statistical findings and “confirmed” whether or not variable categorization achieved by the analysis was Model Fit. Confirmatory Factor Analysis was separated into 2 parts: Confirmatory Factor Analysis of the external environment of Muang District, Nakhon Phanom Province, Thailand and Confirmatory Factor Analysis of the internal environment of Muang District, Nakhon Phanom Province, Thailand.

Confirmatory Factor Analysis of the external environment of Muang District, Nakhon Phanom Province, Thailand

Confirmatory Factor Analysis of the external environment of Muang District, Nakhon Phanom Province, Thailand was conducted to confirm whether or not variable categorization that had separated the factors into 3 groups was Model Fit. The first group of factors was Socio-Cultural and Ecological Natural Environment (SCE and ENE); the second one was Political Legal and

Economic Environment (PLE and EE), and the third one was Technological Environment (TE).

After inputting the data into the computer program, the researcher found that the output did not fit the model. Therefore, model improvement was necessary. Moreover, an examination of Modification Indices (MI) revealed relations between some pairs of analyzed variables. As a result, the researcher omitted variables SCE2, ENE4, EE4, ENE3, SCE1, ENE2, and SCE4 from the Socio-Cultural and Ecological Natural Environment (SCE and ENE) group. Variables PLE3, PLE2, PLE1, and EE1 were omitted from the Political Legal and Economic Environment (PLE and EE) group.

Variables TE4 and TE2 were omitted from the Technological Environment (TE) group. Then, links were drawn of errors (e) among certain variable pairs (e3-e17) that had resulted in overlapping results, and the results perfectly fit the model. The value of Chi-square was 7.376, $df=5$, $p = .194$ ($>.05$), $CMIN/DF = 1.475$ (<3), $GFI = .994$ ($>.90$), and $RMSEA = .035$ ($<.08$) (Arbuckle, 2011). The 1stOrder Confirmatory Factor Analysis (1stOrderCFA) is presented in Figure 2 and the 2ndOrder Confirmatory Factor Analysis (2ndOrderCFA) in Figure 3.

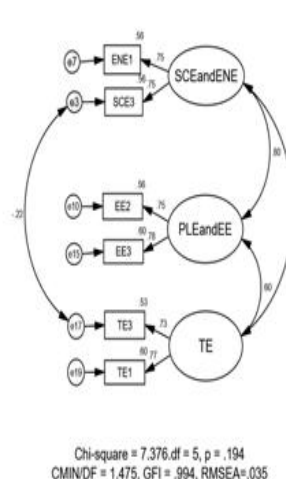


Figure 2

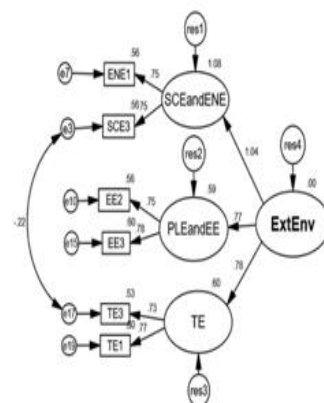


Figure 3

Confirmatory factor analysis of internal environmental factors related to the structure of frontier city development in the twin city model of Mueang District, Nakhon Phanom Province, Thailand

Confirmatory factor analysis (CFA) of the internal environmental factors related to the structure of frontier city development in the twin city model of Mueang

District, Nakhon Phanom Province, Thailand was employed to confirm categorization of variables.

As a result, two groups of variables were classified: Group 1 – Tourism Enterprises and Infrastructure of Tourism (TEP and IT), and Group 2 – Tourism Resource (TR). Following this approach, the complete model fit was released after the data input in an instant program. It was found that the model was not fit.

Therefore, amendment of the model was necessary. Accordingly, modification indices (MI) were analyzed which revealed that some variables in the model yielded relevant analysis results to some degree, and needed to be removed. TEP3, TEP4, TEP5, IT3, TEP1, and IT4 were removed from Tourism Enterprises and Infrastructure of Tourism factors (TEP and IT), as well as TR3 from Tourism Resource factors (TR). After amendments, the model was completely fit with Chi-square = 7.406, df = 4, p = .116 (>.05), CMIN/DF = 1.851 (<3), GFI = .993 (>.90), RMSEA = .046 (<.08) (Arbuckle, 2011).

The results of the 1st Order Confirmatory Factor Analysis (1st Order CFA) is shown in Figure 4, and the 2nd Order Confirmatory Factor Analysis (2nd Order CFA) is shown in Figure 5

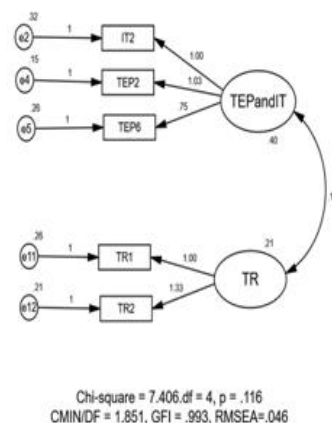


Figure 4

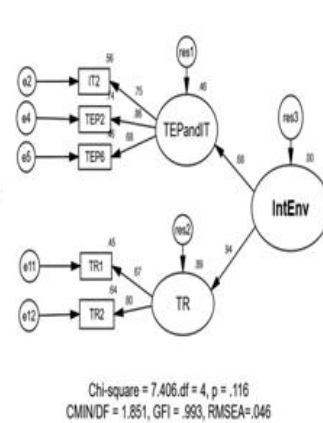


Figure 5

Structural Model for Mueang District, Nakhon Phanom Province, Thailand

The structural model (Byrne, 2010) illustrates ‘influence’ between factors or latent variables that have effects on other factors in the empirical data collected from the sample group. To confirm the results, the structural model was compared to one that was a model fit. Accordingly, the comparison revealed a goodness of fit at CMIN- p (Chi-square Probability Level) > 0.05, CMIN/DF (Relative Chi-square) <3, GFI (Goodness of Fit Index) >.90, RMSEA (Root Average Square Error of Approximation) < .08 (Arbuckle, 2011). The analysis of structural model is as follows:

Table 7 The standardized residual covariances of the structural model for Muang District.

	TR1	TR2	TC14	TC9	TEP2	IT2	TE1	TE3	EE3	EE2	SCE3	ENE1
TR1	-0.019											
TR2	-0.189	-0.011										
TC14	0.184	-0.234	0.026									
TC9	0.022	-0.167	0.02	-0.004								
TEP2	0.622	0.58	-0.021	-0.173	-0.009							
IT2	-0.633	-0.255	-0.098	0.071	0.176	0.121						
TE1	0.485	-0.218	0.393	0.923	-0.229	-0.686	0.097					
TE3	0.611	-0.538	0.299	0.578	-0.803	-0.458	0.235	0.073				
EE3	-0.797	-0.027	0.165	-1.095	0.774	0.695	-0.417	-0.123	0.159			
EE2	-0.732	0.686	-1.189	-0.374	-0.326	0.931	-0.47	0.679	0.324	0		
SCE3	0.528	0.046	0.35	-0.669	-0.381	0.313	-0.755	-0.209	0.387	1.041	-0.021	
ENE1	0.022	-0.74	0.504	-0.218	-0.933	0.251	0.32	0.109	-0.191	-0.082	0.071	0.056

Table 7 shows the standardized residual covariances of the structural model for Muang District, Nakhon Phanom Province, Thailand reveals the observable values of the

standardized residual covariance’s of each pair of latent variables at +2 to -2. Therefore, it can be said that these are effective indicators (Hair et al., 2010)

Table 8. Regression weights and significance of the structural model for Muang District.

Factors (Cause-Effect)			Estimate	S.E.	C.R.	P	Significance
SCEandENE	<---	Ext.Env	1				Sig.
EE	<---	Ext.Env	1.006	0.108	9.304	***	Sig.
TE	<---	Ext.Env	1.343	0.145	9.246	***	Sig.
TEPandIT	<---	Int.Env	1				Sig.
TwinCity	<---	Ext.Env	-0.004	0.392	-0.009	0.993	Not Sig.
TwinCity	<---	Int.Env	0.908	0.425	2.135	0.033	Sig.
TR	<---	Int.Env	0.724	0.087	8.318	***	Sig.
ENE1	<---	SCEandENE	1				Sig.
SCE3	<---	SCEandENE	0.943	0.075	12.647	***	Sig.
EE2	<---	EE	1				Sig.
EE3	<---	EE	1.272	0.104	12.24	***	Sig.
TE3	<---	TE	1				Sig.
TE1	<---	TE	0.959	0.079	12.145	***	Sig.
IT2	<---	TEPandIT	1				Sig.
TEP2	<---	TEPandIT	0.913	0.068	13.5	***	Sig.
TC9	<---	TwinCity	1				Sig.
TC14	<---	TwinCity	1.104	0.107	10.321	***	Sig.
TR2	<---	TR	1				Sig.
TR1	<---	TR	1.085	0.113	9.625	***	Sig.

*** P < 0.001

The table 8 above shows that regression weights and significance of the structural model for Muang District, Nakhon Phanom Province, Thailand of each factor and variable has an effect on each other, as suggested in the

hypothesis, with statistical significance at 0.05, ***P-value < 0.001, with an exceptions for external environments that have no influence on the twin city (P-value = 0.993).

Table 9. Standardized regression weights of the structural model for Muang District.

Factors (Cause-Effect)			Estimate
SCEandENE	<---	Ext.Env	0.824
EE	<---	Ext.Env	0.951
TE	<---	Ext.Env	0.994
TEPandIT	<---	Int.Env	0.746
TwinCity	<---	Ext.Env	-0.003
TwinCity	<---	Int.Env	0.816
TR	<---	Int.Env	0.705
ENE1	<---	SCEandENE	0.755
SCE3	<---	SCEandENE	0.741
EE2	<---	EE	0.713
EE3	<---	EE	0.789
TE3	<---	TE	0.704
TE1	<---	TE	0.791
IT2	<---	TEPandIT	0.785
TEP2	<---	TEPandIT	0.8

Factors (Cause-Effect)			Estimate
TC9	<---	TwinCity	0.712
TC14	<---	TwinCity	0.722
TR2	<---	TR	0.673
TR1	<---	TR	0.808

The table 9 of standardized regression weights of the structural model for Muang District, Nakhon Phanom Province, Thailand illustrates the influence of standardized regression weights between factors and

factors, and factors and variables in the structural model.

Results of Hypothesis Testing Structural Model of Mueang District, Nakhon Phanom Province, Thailand

Table 10 The results of hypothesis testing of the structural model of Mueang District

Hypothesis	Relationship	Standardized Path Coefficient	Result	Significance (p)
H1	External Environment ---> Twin City	-0.003	Rejected	0.993
H2	Internal Environment----> Twin City	0.816	Supported	0.033

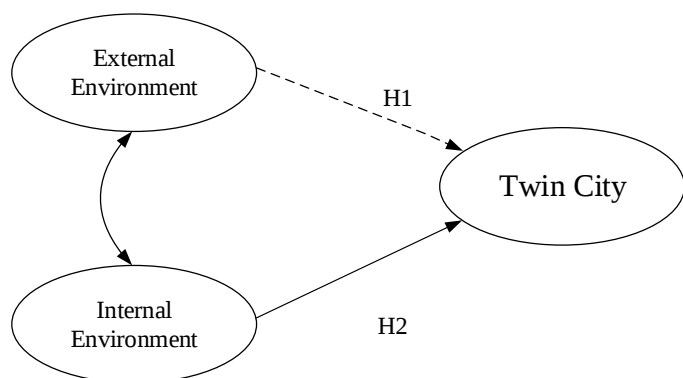


Figure 6. Results of Hypothesis Testing Structural Model of Mueang District.

Testing the hypothesis revealed that Ext Env of the structure of the frontier city development in the twin city model of Mueang District, Nakhon Phanom Province, Thailand does not affect the condition of the twin city; therefore, H1 was rejected. On the other hand, IntEnv of structure of frontier city development in the twin city model of Mueang District, Nakhon Phanom Province, Thailand has influence on the condition of the twin city with statistical significance (Sig H2), as shown in Table 10

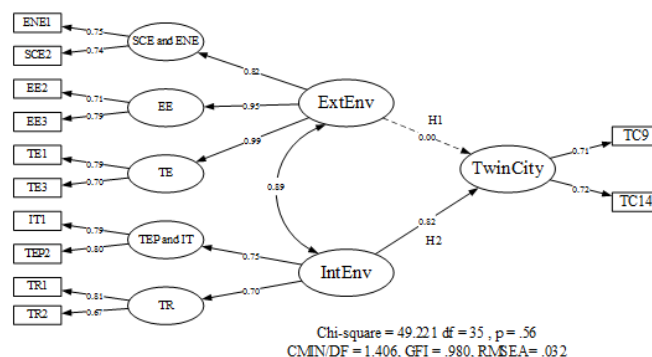


Figure 7. Final structural model of Mueang District, Nakhon Phanom Province, Thailand

The final structural model figure exhibits Ext Env factors related to structure of the frontier city development in the twin city model of Mueang District, Nakhon Phanom Province, Thailand, as follows:

1) Socio-cultural and ecological natural environment factors (SCE and ENE) consist of water pollution (ENE1) and yields the greatest weight at 0.75; education (SCE2) yields the second greatest weight at 0.74.

2) Political, legal and economic environmental factors (PLE and EE) consist of employment (EE3) yields at the greatest weight of 0.79, and budget for tourism development (EE2) yields the second highest weight at 0.71.

3) Technological environment factors (TE) comprised of a website (TE1) yields the greatest weight at 0.79, and mobile application (TE3) yields the second greatest

weight at 0.70.

IntEnv factors related to structure of frontier city development in the twin city model of Mueang District, Nakhon Phanom Province, Thailand is discussed in the following:

1) Tourism enterprises and infrastructure of tourism factors (TEP and IT) consist of transportation (TEP2) yields the greatest weight at 0.80, and tourism information (IT) yields the second greatest at 0.79.

2) Tourism resources factors (TR) including historical resources (TR1) yields the greatest weight at 0.81, and natural resources (TR2) yields the second greatest weight at 0.79.

While the analysis revealed that there is no influence of Ext Env (Reject H1) ($P\text{-value} = 0.993 > 0.05$) on structure of frontier city development in the twin city model of Mueang District, Nakhon Phanom Province, Thailand, it did offer a different result (Sig H2) ($P\text{-value} = 0.033 < 0.05$). Twin city factors (TC) consist of two factors which are events (TC14), with a weight of 0.72, and minorities (TC9), with a weight of 0.71, respectively.

VI. CONCLUSIONS

This research presented The Structural Model of Mueang District, Nakhon Phanom Province, Thailand. 400 samples of tourists, were selected to confirm the model. The model was developed by the statistical techniques, including the EFA, CFA, Structural model, and modified structural model. The final structural model, which is The Structural Model of Mueang District, Nakhon Phanom Province, Thailand. External Environment: Mueang District, Nakhon Phanom Province, Thailand, significant external environmental factors consisted of the following 3 components: 1) Socio-cultural and ecological natural environment factors consist of water pollution and education. 2) Political, legal and economic environmental factors consist of employment and budget for tourism development. 3) Technological environment factors comprised of a website and mobile application. Internal Environment: Mueang District, Nakhon Phanom Province, Thailand, significant external environmental factors consisted of the following 2 components: 1) Tourism enterprises and infrastructure of tourism factors consist of transportation and tourism information. 2) Tourism resources factors including historical resources

and natural resources. Significant factors of the twin cities model included Events, followed by Minorities. The structural model can be summarized in Figure 8.

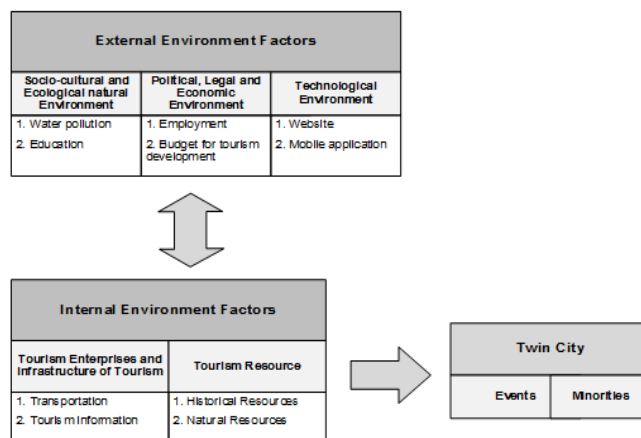


Figure 8. Structural Model for Urban Tourism in the pattern of Twin Cities
Nakhon Phanom Province, Thailand

VII. RECOMMENDATIONS

Government sectors that are involved in the development of provincial tourism can apply: Policy and strategy recommendations toward driving the promotion of urban tourism. The author has proposed 5 strategies for provincial development as follows:

1. Socio-cultural and ecological natural environment of Nakhon Phanom Province, Thailand.
2. Political, legal and economic environment of Nakhon Phanom Province, Thailand.
3. Technological environment of Nakhon Phanom Province, Thailand.
4. Tourism enterprises and infrastructure of tourism of Nakhon Phanom Province, Thailand.
5. Tourism resources of Nakhon Phanom Province, Thailand.

VIII. ACKNOWLEDGMENTS

This research was supported by National Research Council of Thailand (NRCT): Research Scholarship for Graduate Students of 2018, and this article is part of a thesis titled "Frontier Tourism Innovation Management in the pattern of Twin Cities Mekong River Communities between Kingdom of Thailand and The Lao People's Democratic, Doctor of Philosophy Program in Tourism

and Hospitality Innovation Management, Faculty of Business Administration and Accountancy, KhonKaen University, Thailand

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