LOGISTICS AND SUPPLY CHAIN FOR MICE CITIES

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โลจิสติกส์และโซ่อุปทานสำหรับเมือง MICE

น.ส.จันทร์เมธา ศรีรักษา

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งานวิจัยนี้ประกอบด้วย 3 วัตถุประสงค์ คือ 1) เพื่อค้นหาปัจจัยความสำเร็จด้านโลจิสติกส์และโซ่อุปทานสำหรับเมืองไมซ์ 2) เพื่อทดสอบอิทธิพลของปัจจัยด้านประชากรศาสตร์ของผู้มีส่วนเกี่ยวข้องต่อการรับรู้ปัจจัยความสำเร็จของเมืองไมซ์ และ 3) เพื่อระบุคุณลักษณะที่มีนัยยะสำคัญต่อความได้เปรียบทางการแข่งขันในการได้รับเลือกเป็นเมืองไมซ์ พื้นที่ศึกษาคือจังหวัดพิษณุโลก ขอนแก่น และกระบี่โดยเป็นการเลือกอย่างเจาะจงในการศึกษาบนพื้นฐานความเหมือนและความแตกต่างด้านทำเลที่ตั้ง เครื่องมือที่ใช้ในการวิจัยคือแบบสอบถามซึ่งประกอบไปด้วย 4 ส่วนสำคัญ คือ ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม การให้คะแนนความสำคัญของปัจจัยแห่งความสำเร็จด้านโลจิสติกส์และโซ่อุปทาน การเปรียบเทียบคู่เมืองไมซ์ และข้อเสนอแนะ ผู้ตอบแบบสอบถามจำนวน 429 คนมาจากอุตสาหกรรมที่เกี่ยวข้อง คือ อุตสาหกรรมการขนส่งและการจัดการประชุมรวมถึงผู้มีส่วนได้ส่วนเสียที่เกี่ยวข้อง วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนา ใช้การทดสอบสมมติฐานของผลต่างระหว่างค่าเฉลี่ย 2 ประชากรและและการวิเคราะห์ความแปรปรวนในการวิเคราะห์อิทธิพลของปัจจัยด้านประชากรศาสตร์ และเทคนิคกระบวนการลำดับชั้นเชิงวิเคราะห์และการถดถอยโลจิสติกส์พหุกลุ่มเพื่อวิเคราะห์ตัวแปรที่ส่งผลต่อความเป็นไปได้ของเมืองในการได้รับเลือกให้เป็นเมืองไมซ์ ผลการศึกษาพบว่า ปัจจัยที่มีผลต่อความได้เปรียบทางการแข่งขันในการเป็นเมืองไมซ์ประกอบด้วย 7 ปัจจัย คือ 1) เส้นทางบินระหว่างประเทศ 2) การเชื่อมต่อระหว่างท่าอากาศยานและตัวเมือง 3) ประสบการณ์การจัดงานไมซ์ 4) ที่พัก 5) เมืองแห่งนวัตกรรม 6) เมืองแห่งการจัดนิทรรศการ และ 7) เมืองแห่งการพักผ่อน อย่างไรก็ตาม ผลการวิจัยแสดงให้เห็นว่าปัจจัยแต่ละตัวส่งผลกระทบต่อเมืองแต่ละเมืองแตกต่างกัน การวิจัยครั้งนี้เสนอแนวทางให้ภาครัฐและผู้มีส่วนได้ส่วนเสียทุกภาคส่วนสามารถร่วมกำหนดแนวทางกลยุทธ์เพื่อพัฒนาสิ่งอำนวยความสะดวกด้านโลจิสติกส์และโซ่อุปทานของเมืองเพื่อให้เติบโตได้อย่างเต็มศักยภาพและสอดรับกับทิศทางการเติบโตของการเป็นเมืองไมซ์ในอนาคต

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Chanmatha Sriraksa : LOGISTICS AND SUPPLY CHAIN FOR MICE CITIES. Advisor: Assoc. Prof. PONGSA PORNCHAIWISESKUL, Ph.D. Co-advisor: Assoc. Prof. Rahuth Rodjanapradied, Ph.D.

The aim of this study was threefold; 1) to examine success factors of logistics and supply chain for MICE cities, 2) to investigate influences of socio-demographic factors on stakeholders perception of logistics and supply chain for MICE cities, and 3) to identify significant competitive advantage determinants of logistics and supply chain for a city to be selected as MICE city. Based on some common characteristics and differences by nature of location, Phitsanulok, Khon Kaen and Krabi were purposively selected. Research tool is a set of questionnaire consisting of four main parts that were demographic information, logistics and supply chain success factors for MICE cities, pairwise comparison of MICE cities, and suggestion. Participants were 429 respondents from two main industries; transportation industry and the Meetings industry, as well as related stakeholders. Data analysis employed descriptive statistics for socio-demographic description. Analysis of Variance (ANOVA) and independent sample t-test were used to examine impacts of socio-demographic factors. Through Analytical Hierarchy Process (AHP) and Multinomial Logistic Regression (MLR), significant attributes affecting probability of one city to be selected as MICE city were identified. Findings revealed that seven factors influencing MICE city competitiveness were international routes, airport-city connectivity, MICE experience, accommodation, innovation city, exhibition city, and leisure city. However, the results show that each factor considerably provided different effects on each city. This study shed light on how the government and stakeholders can construct a strategic guideline to develop logistics and supply chain to their full potential and the city future growth as MICE city

Field of Study:	Logistics Management	Student's Signature .....
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		Co-advisor's Signature .....

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LIST OF ABBREVIATIONS

AHP	Analytical Hierarchy Process
CAAT	Civil Aviation Authority of Thailand
CLM	Council of Logistics Management
DCM	Discrete Choice Model
EWEC	East-West Economic Corridor
FSCs	Full Service Carriers
ICCA	International Congress and Convention Association
ICAO	International Civil Aviation Organization
KBV	Krabi International Airport
KKC	Khon Kaen Airport
LCCs	Low Cost Carriers
LRT	Light Rail Transit
MICE	Meeting, Incentive, Convention, Exhibition
MLR	Multinomial Logistic Regression
NSEC	North-South Economic Corridor
PHS	Phitsanulok Airport
TCEB	Thailand Convention and Exhibition Bureau
TSC	Tourism Supply Chain
UNWTO	United Nations World Tourism Organization

CHAPTER I
INTRODUCTION

1.1 Background and Motivation

Over the decades, tourism has played vital role as a key driver of socio-economic development. Millions of job and business opportunities are created in tourism sector and related business. Tourism has become main source of revenue generator for many countries particularly developing countries. However, the socio-economic contribution of tourism depends on the quality of tourism products offered by destinations (UNWTO, n.d.).

Generally, tourism are known as traveling to different kinds of tourist attractions, for example, natural, cultural, adventurous tourist sites, shopping, recreational activities as well as visiting friends and relatives. Nonetheless, tourism sector can be divided into different segments. The United Nations World Tourism Organization (UNWTO), classified tourism trips according to two main purposes; personal and, business and professional. Personal trip includes holiday, leisure and recreation, visiting friends and relatives, education and training, health and medical care, religion, shopping, transit, and others forms of travel such as volunteer work and migration possibility. On the other hand, business and professional purposes refer to activity of attending meetings, conferences, trade fair and exhibitions, and other business and professional purposes (United Nations, 2010). Business and professional trips are also known as "Business Tourism", "The Meetings Industry", and "MICE Tourism". The acronym "MICE" is referred to "Meeting, Incentive, Convention, and Exhibition".

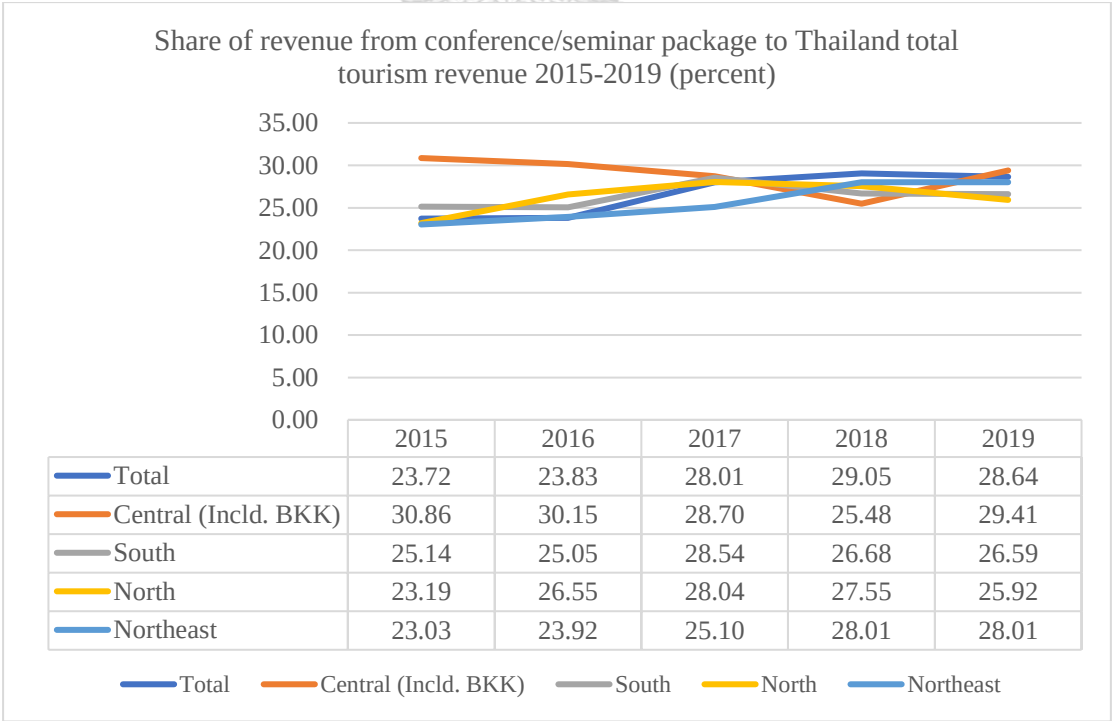
Interestingly, MICE Tourism has grown consecutively each year and contributes significant economic impact worldwide. Since 1963, the number of international meetings had increased approximately 10 % every year. During the period of 2013-2017, the growth rate had reached up to 29% (International Congress and Convention Association, 2018). The dynamic growth of MICE tourism spread out worldwide with intensified competition between countries as well as cities in order to host MICE activities. The United Nations World Tourism Organization (UNWTO) also realized this crucial role of the Meetings industry as one of the key enablers of tourism development and generator of income and investment. As stated by the former UNWTO Secretary-General, Mr. Taleb Rifai, apart from business opportunity, the Meetings industry also furnished benefits to the economy for a higher spending level, mitigate tourism seasonality, regenerate destinations and enhance social contribution by knowledge sharing and job employment (UNWTO, 2014).

Likewise, Thailand is one of the countries mainly standing to benefit from tourism industry. The country acknowledged the dynamic growth of worldwide MICE

tourism and appreciated economic and social opportunity brought by this emerging market. Thus, MICE tourism in Thailand is officially originated in 1984 by the establishment of "Thailand Incentive and Convention Association (TICA)" through mutual cooperation of government and private sectors. However, this market did not seem much opportunity at that time. As expressed on its web site, Thailand Convention and Exhibition Bureau (TCEB) was established as the government agency by the Royal Thai Government with the main task to promote and develop the business tourism sector in Thailand in 2002 when MICE industry offered economic challenges.

Since 2004, Thailand has gained steady revenue from the Meetings industry especially for international MICE travelers who spent more and more per trip. The Thai government consequently put extensive support and facilitate to develop MICE industry including a promotion of MICE venue standard, MICE professionals training and establishment of MICE organizations throughout the country.

The business event sector has considerably grown. In 2018, Thailand was ranked 21st in the worldwide country ranking considering the number of meetings per country and Bangkok was ranked 10th city according to number of meetings per city (International Congress and Convention Association, 2019). Thailand generated over THB 200,000 million from welcoming 30 million international and domestic attendees (Thailand Convention and Exhibition Bureau, 2018). The share of revenue of conference and seminar package to total tourism revenue of Thailand during 2015-2019 is displayed in figure 1.1.



	2015	2016	2017	2018	2019
Total	23.72	23.83	28.01	29.05	28.64
Central (Incld. BKK)	30.86	30.15	28.70	25.48	29.41
South	25.14	25.05	28.54	26.68	26.59
North	23.19	26.55	28.04	27.55	25.92
Northeast	23.03	23.92	25.10	28.01	28.01

Figure 1.1 Share of revenue from conference/seminar package to Thailand total tourism revenue 2015-2019

Figure 1.1 illustrated trend of revenue shared by the Meetings industry from the total tourism revenue of the country during 2015 -2019 (Bank of Thailand, 2020). It is noticeable that MICE sector revenue have gradually and positively grown since 2015 to 2018 with a saturate in 2019. Not surprisingly, the growth of MICE sector brought growing prosperous revenue to the central area of Thailand where Bangkok and major conference, convention and exhibition centres are located. Interestingly, while the MICE revenue in other areas were decreasing, the MICE tourism in the Northeast of Thailand still keeps its positive path.

As foreseeing the substantial growth and impact of this high-value-added industry toward country, the five-year MICE industry's Master Plan (2017-2021) had been announced and five strategies had been proposed. The first one is to develop new MICE events to support target industries as well as build MICE events according to market demand and national policy. The ten targeted industries of Thailand 4.0 policy or S-curve industries are composed of two board categories. The first five S-Curve industries was aimed to enhance competitiveness of Thailand current strengths through innovation, which are Next Generation Automotive, Intelligent Electronic, Advanced Agriculture and Biotechnology, Food Processing and Tourism. The five new S-Curve industries are Digital, Robotic and Automation, Aviation and Logistics, Biofuels and Biochemical and Medical hub. The TCEB second strategy is to distribute income to regions by upgrading regional MICE activities to stimulate provincial economy and decrease inequality in provincial areas. Since then along with the sector development, five MICE cities have been consecutively designated which are Bangkok, Chiang Mai, Phuket, Pattaya and Khon Kaen (TCEB, 2018).

In regard to MICE cities, TCEB still works and put efforts to promote more in collaboration with public, private, educational and local community. As a result of the economic benefit of the MICE industry in boosting local business, many cities of Thailand endeavor to be MICE cities while some potential cities are under feasibility of study. However, in order to be MICE destination, effective and efficient resources of the city are necessarily required. According to TCEB criteria for MICE city evaluation, MICE infrastructure of the city must be prompt and standardized such as MICE venues, and communication network. Related business-like transportation system, tourist attractions, and accommodation must be able to facilitate MICE activities. Not only tangible resources, intangible component of MICE tourism product in terms of management are also needed, for example, local hospitality, MICE experience, professional staff, and particularly collaboration and support of stakeholders. Thus, in order to become MICE city, it is not only the discussion about venues, MICE programs, or site attractions, but it also covers all tourism providers or tourism suppliers starting from the origin point of travel through MICE destination and until the end of the business trip. This is so-called logistics and supply chain of MICE destination.

1.2 Research Gap

As aforementioned above, opportunity in tourism market should not be limited only with leisure tourism while travelers making trips for Meeting, Incentive, Conference, and Exhibition (MICE) contribute more economic value added. This market segment has gradually grown and enhanced significant economic and social impact for the country by higher spending of the visitors, tourism seasonality reduction, destination regeneration, job employment, and knowledge sharing.

Although MICE tourism has been focal point of research studies in Thailand, empirical evidences from previous literature showed that the majority of the studies were qualitative researches studying on holistic view of MICE industry of Thailand or otherwise the designated major MICE cities such as Bangkok, Chiang Mai, Phuket, Pattaya, and Khon Kaen. There are still few studies on potential cities. Although tourism logistics and supply chain had also been interested by academic researches, MICE city development through logistics and supply chain perspective is rather new concept in Thailand and there is a dearth of study on this theme.

Moreover, studying with concentration only on supply side cannot render the city successful as MICE destination as long as demand side are left unattended. Thus, this study also anticipate needs and preferences of MICE stakeholder in order to tailor MICE tourism product to their preferences accordingly.

Furthermore, a comparison study between MICE cities are rarely found, especially those MICE cities that have different characteristics and level of MICE service competency.

1.3 Research Objectives

This study therefore aims to:

1.3.1 To examine success factors of logistics and supply chain for MICE cities

1.3.2 To investigate impacts of socio-demographic attributes on stakeholder perception of logistics and supply chain for MICE cities

1.3.3 To identify significant competitive advantage determinants of logistics and supply chain for MICE cities

1.4 Research Questions

1.4.1 In order to answer Research Objective 1, Research Question 1 was raised:

1.4.1.1 What are success factors of logistics and supply chain for MICE cities?

1.4.2 In order to answer Research Objective 2, Research Question 2 was asked:

1.4.2.1 What socio-demographic attributes do affect perception of stakeholder on logistics and supply chain of MICE cities?

1.4.2.2 How these socio-demographic attributes do affect stakeholder perception?

1.4.3 In order to achieve Research Objective 3, Research Question 3 was proposed:

1.4.3.1 What are significant competitive advantage determinants of logistics and supply chain for MICE cities?

1.5 Research Scope

This study concentrates on logistics and supply chain for MICE cities. The tourism logistics and supply chain as well as MICE site selection theories are hence applied as a ground-based theory for this research.

Through logistics perspectives, attributes on accessibility are expanded in this study to illustrate transportation role in destination competitiveness. Thus, air travel accessibility like international routes, and airport-city connectivity were added for need assessment. Other domestic connections such as inter-city and intra-city transportation were inclusive to complete intermodal transportation network. In terms of supply chain perspective, attributes of MICE tourism supply were included, for instance, stakeholder support, MICE experience, MICE venue and facilities, accommodations, MICE program, tourist attractions, city image, and city safety.

In addition to the foundation of MICE destination theory, some particular attributes on S-Curve industries (Health Care city, Agriculture city, Innovation city, Tourism city) of Thailand national strategy are added on this study to find core competency of the selected MICE cities. Furthermore, the acronym of “MICE” were expanded (Meeting city, Incentive city, Convention city, Exhibition city) as different attributes to differentiate city positioning. Based upon differences of city characteristics and resources, each city might face different challenges and constraints for MICE city development. The findings of this study would therefore be beneficial for each city to grow into their own potential by differentiating their uniqueness from their own resources and offering their MICE tourism products to appropriate market segments.

1.6 Location of Study

The locations of study were intentionally selected relating to differences in their locations and similarity in their air transport operation. These cities are Phitsanulok (PHS) in the North, Khon Kaen (KKC) in the Northeast and Krabi (KBV) in the South.

These three cities have some similarity and various differences in three main aspects in terms of location, logistics, and MICE tourism supply chain. For location aspects, three cities are located in different geography: mountainous, coastal, and plateau areas, resulting in different tourist resources. In regard to MICE city, Khon Kaen was the only city that officially nominated as one of Thailand MICE cities apart from Bangkok, Chiang Mai, Phuket, and Pattaya. Among these five official MICE cities, Khon Kaen is recruited in this study because numerous researches on Khon Kaen MICE city development revealed some problematic issues. While Phitsanulok remains potential city for being promoted as MICE city, Krabi is designated as MICE cluster city for MICE activities in Southern region. One common characteristic shared by these three cities are their airport operations. They are stated-own airports under supervision of Department of Airport (DOA), Thailand.

Figure 1.2 Locations of Study

Firstly, Phitsanulok, located in the lower part of the North of Thailand, covers an area of 10,815 square kilometres with flatlands, mountainous landscape and richness of natural tourist attractions such as waterfalls and national park. Due to the strategic location, the city is a hub of trade, and education (Naresuan University). Phitsanulok is also full of historical sites of ancient city resulting from being a capital city during Ayutthaya period. A must thing to do when visiting Phitsanulok is to worship Phra Buddha Chinnarat, the most beautiful Buddha statue of Thailand.

For logistics point of view, Phitsanulok planned to be a transportation and logistics hub of this region reachable by road, rail, and air. The city geography is advantage as a cut-point of two main trade routes between North-South Economic Corridor (NSEC) and East-West Economic Corridor (EWEC). Moreover, Phitsanulok took benefit from situating in lower-northern region because this area was a main development issue of the 11th Thai National Economic and Social Development Plan (2012-2016). "Phitsanulok Multimodal Transportation Center within 2020" project was consequently released by Thai government for logistics and supply chain development. In addition, the city is an en route station of a High Speed Rail (HSR) mega project from Bangkok to Chiang Mai (Chaylee, 2020). Regarding air transport, Phitsanulok Airport (IATA code: PHS), is situated three kilometres in the south of the city downtown. The airport covers 26,050 square metres with one runway and one passenger terminal, serving 24 flights with 8,000 passenger capacity per day (Department of Airport, 2019). Phitsanulok - Don Mueang International Airport, Bangkok is the only route provided. Thus, all operating airlines are Low Cost Carriers (LCCs). From MICE perspective, the strength of Phitsanulok is geographical advantage. The city location connects the North, central and the North-eastern part of country. This makes Phitsanulok more accessible within two hours from surrounding provinces and about 50 minutes by air from Bangkok. Furthermore, the numbers of MICE travellers are expected to be increased from both domestic and international markets according to Phitsanulok MICE industry development strategic plan (2022-2027). Along with the MICE city plan, transport infrastructure like Phitsanulok airport was lined up for feasibility study to be upgraded to international airport for better connectivity.

In regard to MICE supply chain, the city strategically planned to be MICE Hub for the Lower-Northern Region and declared clearly on Phitsanulok Master Plan 2020-2039. Promoting MICE activities is one of tools to develop and leverage competitive advantages for economic, trade, and tourism of the city. Under the "MICE industry Project", King Naresuan the Great International Convention and Exhibition Centre is under expansion for elevating capacity from 3,500 up to 5,000 participants (Office of Transport and Traffic Policy and Planning, n.d.). Besides, five star hotels like the Imperial Hotel and Convention centre also offers standard venue for MICE activities. Comparing to neighboring cities, Phitsanulok also take advantage from variety of accommodation types such as city hotels, and peaceful resorts in natural tourist sites.

Secondly, Krabi is a southern province lying on Andaman coast of Thailand offering splendid scenery of both inland and offshore. Covered with jungle and limestone cliffs, the city attracts visitors with a wide array of outstanding beauty of natural sites and leisure activities such as sea coast, caves, waterfalls, hot spring, rock climbing, jungle trekking and islets such as Poda, Phi Phi and Lanta islands. Accommodations and restaurants are on services with variety of choices.

In regard to logistics, Krabi is accessible by air, road but not rail. For air transport, Krabi International Airport (IATA code: KBV) is situated about 15 minutes far from the city centre. The airport is composed of one runway and two passenger terminals on 16,000 square metres of area with capacity of 12,000 passengers and 32 flights per day (Department of Airports, 2018b). As international airport, flights operated to Krabi are worldwide from Europe, Middle-Eat, China and Southern part of Asia. Airlines offer regular, seasonal and charter flights throughout a year. These airlines include both Full Service Carriers (FSCs) and Low Cost Carriers (LCCs). The airport is currently leveraging its capacity by constructing new passenger terminal and new runway. This expansion will enhance airport capacity up to 8 million passengers per year.

Relating to MICE industry, although Krabi is not an official MICE city, the city is also a part of TCEB strategic "D-MICE: Meeting in Thailand" campaign since 2015 aiming to enhance capabilities of MICE city in the Andaman cluster cities (Phuket, Krabi, Phang Nga, Ranong and Trang). Nevertheless, Krabi does not have official convention and exhibition centre like other two compared cities. With numerous choices of international four- and five-star hotels, the city has been hosting domestic and international MICE activities for a period of times. As a well-known destination for international travelers, the city provides luxurious accommodation and facilities, skillful service staff with language proficiency, and sea-sand-sun tourist attractions. Under the shadow of Phuket MICE city, Krabi is an alternative for visitors who looking for more peaceful and natural ambience of destination. However, among these three provinces, Krabi is the only city where none of accredited university is situated. Tourism personnel of Krabi are then fed and supported from the neighbor cities like Phuket and Songkgla where Prince of Songkhla University and campus are located.

And lastly, Khon Kaen province is situated in the Northeast of Thailand as a hub of trade and investment, politic, education and tourism. The city is very famous for its historical and archaeological sites, culture and local wisdom. The province is a home of Khon Kaen University, one of Thai accredited universities, offering Sciences and Technology, Health Sciences, and Social Sciences. Moreover, Mudmee silk, a hand delicate woven silk product, brings a lot of popularity to the city and lead the city to host the International Silk Festival for many years.

With respect to logistics point of view, the city is a part of East-West Economic Corridor (EWEC) route which is an investment, and logistic hub connecting countries in the Mekong sub-region; China, Vietnam, Laos, and Myanmar. As for Khon Kaen Airport, it is 8 kilometres far from the city with one runway and one passenger terminal. The airport is under development project for a new passenger terminal in order to maximize capacity up to 5 million passengers per year (Department of Airports, 2018a). The airport currently provides only domestic flights to major cities like Bangkok, Chiang Mai, Phuket and Utapao, Pattaya.

Concerning the Meetings industry supply chain, as officially appointed as the 5th Thailand MICE City by Thailand Convention & Exhibition Bureau (TCEB) in 2014, Khon Kaen is fully equipped with MICE facilities. The Kanchanapisek Multipurpose Convention Centre is located in Khon Kaen University. The centre provides a total usable areas of 21,160 square metres offering convention hall room, multipurpose hall, and outdoor areas for exhibition activities (Golden Jubilee Convention Hall, 2019). Moreover, MICE capability of the city has been fostered by the establishment of Khon Kaen International Exhibition and Convention Centre (KICE) in 2017. Apart from this, numerous five star hotels in Khon Kaen also play important role in hosting various business events. The city has experienced in organising national and international MICE activities in various fields such as The World Tourism Day 2016 (field trip), The 14th APEC Khon Kaen International Conference 2019, and the 11th International Asian Conference on Cancer Screening. As stated in the provincial development strategy 2018-2021 to be "a pleasant city that is becoming an ASEAN Metropolis", the city development has been intensively in the pipeline including the transportation supply chain such as double-track railway expansion and Light Rail Transit (LRT) project. However, previous researches revealed that air transportation is still insufficient in some aspects. A lack of international flight network was mentioned as well as the intra-city connectivity problem (Saenjai & Mongkolsrisawat, 2015).

As a results of differences in their characteristics of opportunities and limitations, these three cities are selected to investigate logistics and supply chain determinants for MICE city development.

1.7 Research Methodology

1.7.1 Research Tool and Design

The questionnaire was designed to address the research objectives that was to study logistics and supply chain for MICE cities. The questionnaire consisted of four sections; 1) demographic data of the respondents, 2) logistics and supply chain success factors of MICE cities 3) MICE city attribute comparison, and 4) suggestions for MICE city development.

After five judgements of the expert review, the pilot study was conducted. The 40 respondents were requested to fulfil the quality of the questionnaire. Certain amendments had been made after the pilot study for clearer instructions of the questionnaire.

1.7.2 Research Population and Sampling Method

Key players in logistics and supply chain of MICE industries were selected as population of this research. For logistics, the air transport segment included Civil Aviation Authority of Thailand (CAAT), airport and airline employees from the areas of study as well as from other cities in order to avoid local bias. Land transport is also included to complete multimodal logistics. For MICE supply chain, Thailand Convention and Exhibition Bureau (TCEB), hotels and accommodation, Destination Management Organizations (DMOs), academia, and other related service business were involved. The stakeholder from two main industries were intentionally recruited in order to attain insight perspectives. These two perspectives might reflect challenges and limitations of each other and logistics and supply chain of MICE city might eventually be developed accordingly.

Purposive sampling technique was employed to recruit MICE and logistics stakeholder. A snowball technique was also used for gaining insights information of field experts and provincial authorities.

The survey was started in November 2019 – April 2020 through in-person appointments, telephone calls, and post mail. The total of 429 participants completed the questionnaire.

1.7.3 Data Analysis

To achieve the research objectives, some techniques are utilized including descriptive statistics, Analytical Hierarchy Process (AHP) and Multinomial Logistics Regression (MLR). Frequency and percentage were used to describe demographic information of respondents. Independent sample t-test and Analysis of Variance (ANOVA) was carried out to analyze socio-demographic variables.

Analytical Hierarchy Process (one stage) helped measuring competitive advantage of three cities by pairwise comparison. The probability of each MICE destination is indirectly estimated from pairwise comparison by respondents. The independent variables are proxied with the respondent-specific correlation between the factor scores and the MICE City preference. All AHP result were carried out by the Excel software package. Finally, the determinants of each MICE city were detected and identified by multinomial logistic regression analysis.

1.8 Research Contribution

1.8.1 The research results provides new holistic perspective of logistics and supply chain for MICE cities. Firstly, the findings highlights the significant attributes of MICE destination competitiveness. Secondly, the methods applied in this study proposed new approach for MICE city competitive advantages and positioning. It

would therefore be beneficial for each city to grow into their own potential by differentiating their uniqueness from their own resources, and offering their MICE tourism products to appropriate market segments. This technique can be applied on further studies where the comparison can be conducted either between designated MICE cities for their better implementation. Or a study can be undertaken between non-MICE cities and official MICE cities to compare their potential and explore a guideline for development.

1.8.2 For managerial contribution, the implication of this study signify how the government and stakeholder can construct a strategic guideline to develop logistics and supply chain to their full potential and the city future growth as MICE city.

CHAPTER II
LITERATURE REVIEW

The chapter is classified into eight sections. Initially a background of logistics and supply chain for tourism is presented. Next section describes an overview of tourism destination. Logistics and supply chain for MICE tourism is exhibited in the third section. The forth section is review literature on factors relating MICE city. Logistics and supply chain for MICE city is illustrated in the fifth section. The sixth describes the Analytical Hierarchy Process (AHP). At the end of this chapter, Discrete Choice Model (DCM) and Multinomial Logistic Regression (MLR) are introduced.

2.1 A Background of Logistics and Supply Chain for Tourism

The modern competitive environment of the 21st century forced business enter to inter-network competition era when integration of business relationship across network became more powerful to compete than individual company. The management of relationship between cross-functional within the firm and across the business network is called Supply Chain Management (SCM).

According to Cooper, Lambert, and Pagh (1997), Supply Chain Management (SCM) was originally initiated in 1985 by Houlihan (Zhang, Song, & Huang, 2009) and applied thoroughly in the manufacturing industry. However, there was some confusion between logistics and supply chain definition in the earlier period. In 1998, the logistics was then redefined by the Council of Logistics Management (CLM) as: "part of supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from the point-of-origin to the point-of-consumption in order to meet customer requirements". On the other hand, Supply Chain Management is comprised of planning and managing all activities concerning sourcing, procurement, conversion and all logistics management. Supply chain also emphasized on coordination and collaboration between partners, business suppliers, all stakeholders, and customers. In other words, supply chain management is supply and demand management within and across related business (Council of Supply Chain Management Professionals, n.d.). In short, supply chain management was the integrated relationship of key business process from end users through original suppliers offering products, services, and information that add value for customer and other stakeholders (Lambert & Cooper, 2000).

In order to understand supply chain of tourism industry, it is important to realized fundamental characteristics of tourism product. Different from manufacturing industry, tourism products are composed of both tangible and intangible components. They are perishable. This business sector encounters high competition and demand uncertainty due to seasonality. Furthermore, to consume tourism product, tourists

have to travel to a place or destination where tourism suppliers produce services. So according to Zhang et al. (2009), a Tourism Supply Chain (TSC) was a network of tourism entities involving in various activities to provide different components of tourism products and services to the distribution and marketing of the final tourism product at a specific destination. As tourism destinations differ in many aspects such as location, natural resources, and climate, tourism products of each destination consequently varies accordingly. This differentiation is a key success driver to success in fierce competition industry like tourism. For tourism supply chain, participation of private and public sectors were also included.

Although supply chain concept is widely used, in context of tourism, numbers of literature on logistics and supply chain have grew contrarily to the rapid growth of the industry. According to tourism supply chain literature review of Zhang et al. (2009), the main study areas of previous studies were on supply side such as supply management, two-party relationship, tourism supply chain coordination, performance measurement, and information technology. Based on remarkable work of S. Page in 2003, this review analysis proposed a model of typical tourism supply chain within a destination as illustrated in figure 2.1.

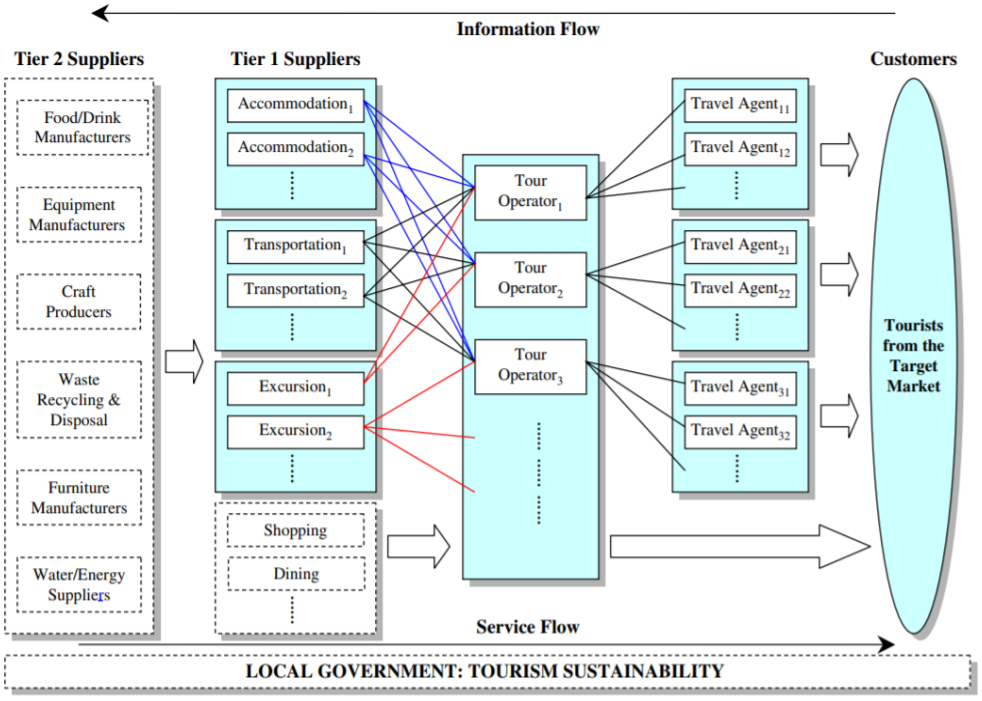


Figure 2.1 A Typical Tourism Supply Chain within Destination

According the tourism supply chain model of Zhang et al. (2009) in figure 2.1, the first tier of upstream involved direct tourism service suppliers offering direct services to intermediaries. These suppliers provided services such as accommodation, transportation, excursion, shopping, and food and beverages. The tourism intermediaries included tour operator and travel agency playing as a retail branches of tourism product. On the downstream side, the chain ended with tourists from the

target market. For a complex supply chain analysis, the second-tier suppliers might be included. These suppliers were business who provided products or services to the first tier-suppliers. Local government and business organizations were also players in tourism supply chain for policy intervention and collaboration between public and private sectors. Natural resources or scenery was also included in tourism supply chain.

2.2 Overview of Tourism Destination

In regard to tourism, “destination” has numerous terms and definitions to explain its complexity. According to United Nations World Tourism Organization (UNWTO), a tourism destination is “a physical space with or without administrative and/or analytical boundaries in which a visitor can spend overnight. It is the cluster (co-location) of products and services along the tourism value chain and a basic unit of analysis of tourism. A destination incorporates various stakeholders and can network to form larger destinations. It is also intangible with its image and identity which may influences its market competitiveness” (World Tourism Organization, 2019).

Given inclusion of tangible and intangible components, it is not easy to understand complex relationship between logistics and supply chain of destination stakeholders. In order to constructively analyse tourist destination, a “Destination Cake model” proposed by Bonetti, Petrillo and Simoni in 2006 was illustrated to decompose destination component by layers as shown in figure 2.2 (Ivanova, 2017).

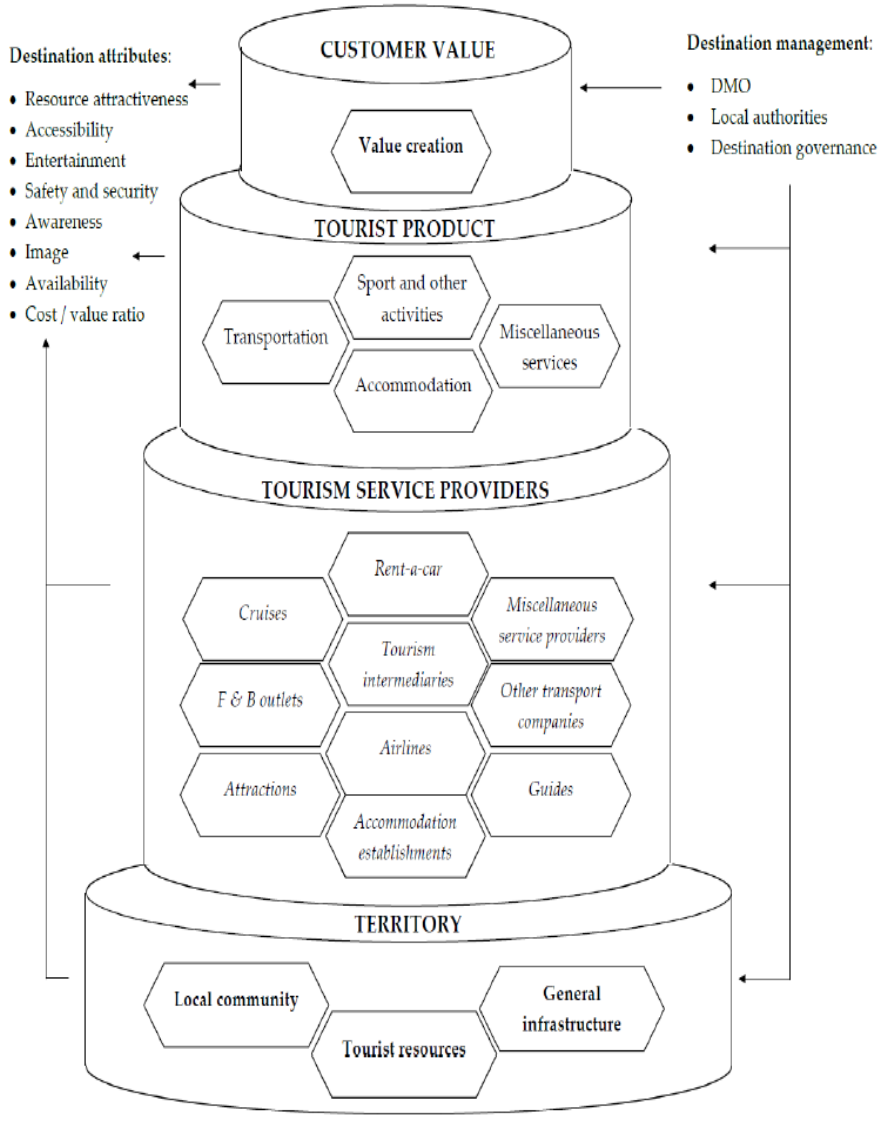


Figure 2.2 Destination Cake Model

The figure 2.2 illustrated four layers of destination component from tourism perspective. The first layer, a foundation of the model, is territory including resources, general infrastructure, and local community. Territory is a geographical boundaries of a destination. Therefore, destination can be city, region, and country. The first element of this layer is resources composing of tourist natural and man-made attractions; the main rational pulling tourists to visit and influencing destination competitiveness. The second element is general infrastructure contributing to safety, security, and comfortability of visitors. These infrastructure includes electricity and water supplies, healthcare system, bank, and transportation facilities like transport stations. Local community is the last element of this fundamental layer taking crucial role in hosting visitors and implementing destination development by supplying labour to tourist suppliers and inheriting their local culture as tourist product. In relation to logistics, it is generally known that airlines have played their vital role in

destination accessibility for long haul trips, however, after recent emergence of Low Cost Carriers (LCCs), the short haul routes are currently dominated by air transport. As well, airport is very crucial component of destination in terms of intermodal transport station. Others logistics infrastructures also included road, rail, and water transport.

The second layer of the model concerns tourist service suppliers or also known in different terms such as tourism actors or service providers. These tourism operators involve hotels and lodging, food and beverage outlets, transportation companies (bus, cruise, rail, air), and travel agencies. In relation with aviation, airlines are one of the most important key stakeholders in destination development in terms of their route selection. Intermodal ports like airport, bus terminal and railway station, as well as their service quality are also crucial for tourism experience and city growth. Airline and airport operations are thus meaningful and powerful for destination planning and management.

The tourism products are the third layer of the Cake model. This level is comprised of all tangible and intangible of tourism services and activities, for example, accommodation, food and beverage, transportation services, sightseeing, cultural activities, sport and recreational activities.

At the top of the Cake model, here is the place of customer value. These values are created from perception and satisfaction of customers through their service experience. The value can be perceived in terms of financial, emotional, functional benefit or even a whole. Customer value are important as it is one of main factors determining repurchasing and customer loyalty. As co-creators of customer value, transportation business players like road, rail, airlines, and airports therefore put extensive efforts to enhance their customer experiences.

In conclusion, the destination cake model provides illustrative understanding of general tourism destination components. Apart from the service process, the tourism service providers involved in a tourist destination are also depicted. No matter which service business they are in, they all aim to achieve the same goal to create valuable experience to their customer and anticipate to welcome revisit travellers. However, value creation of a destination is not possible to be offered by one and only business of the tourism service providers, but it rather needs co-creation of value added from all destination stakeholder or cooperation from a whole chain of supply side.

2.3 Logistics and Supply Chain for MICE Tourism

Following the theoretical framework of tourism supply chain, few studies on MICE tourism were also undertaken in various themes.

Choi, Kim, and Robb (2016) revealed that to sustainably manage MICE supply chain, cooperative marketing activities and strategic planning were the most important. With mutual trust and respect, supply chain was enhanced. On the contrary, different goals of supply chain network was considered as the barrier for MICE supply chain sustainability.

As MICE logistics and supply chain is rather new concept in Thailand, logistics studies on MICE tourism is hardly found. However, there are some recent studies relating to tourism logistics in Thailand.

For example, the tourism logistics management for cultural creative tourism in Chiang Mai was conducted by Piboonrungroj and Sangkakorn (2013). The finding identified potential success factors for logistics development of cultural creative tourism in a destination which were infrastructure (electricity, water, transports), information (opening hours, area map, activity list), intelligence (demand and supply statistic), uniqueness of place, and destination innovation.

Ransikarbum (2020) examined factors affecting tourism logistics of Ubonratchathani province and discovered that transportation was the most important factor impacting satisfaction of visitors for tourism products of the province. These transport sub-attributes included vehicles options, route, road safety, and location of multimodal transport stations (airport, bus station and railway station). The additional finding of Puchongkawarin and Ransikarbum (2020) also revealed that public transport system of this city was efficient and satisfied tourists.

Likewise, researches on MICE supply chain in Thailand is also scarce. The initial study of supply chain relating MICE business starting by Thumachai et al. (2017). They conducted an analysis on incentive travel supply chain of Thailand. The findings identified key players in incentive sector including incentive house and destination management companies. Not surprisingly, partner relationship and collaboration were identified as key success factors for incentive travel supply chain in Thailand.

The other study on MICE supply chain was conducted by Tunming, Chaigasem, and Siriwong (2019). The study involved both logistics and supply chain analysis for Khon Kaen as a MICE and Event city. The research finding showed that transport system integration, transport services, human resource development, public transport development, innovations of transport systems were recommended to be improved in order to leverage MICE tourism logistics and supply chain of Khon Kaen.

According to the above review of literature, it is noticeable that studies on logistics and supply chain for MICE industry are limited and mainly focused on logistics factor like transport.

2.4 Factors Relating MICE City

The dynamic growth of the meetings industry considerably expanded and resulted in the establishment of authorities concerned such as Convention and Visitor Bureau (CVB), Destination Management Organizations (DMOs), and specific professionals increasingly required. Not only related business and services were substantialized but also academic interests on the Meetings industry were conceptualized. Identical approach of convention modelling was firstly introduced by Var, Cesario and Mauser in 1985. At that time from the perspectives of conference attendance, accessibility was far more crucial than attractiveness (Var, Cesario, & Mauser, 1985).

Crouch and Ritchie (1997) systematically summarized an intensive review of 64 articles and other publications on the Meetings Industry during 1976-1996. This study reflected that the main focus of research scholars during this period was to identify site selection factors. The findings advocated a conceptual model of site selection attributes. The eight primary determinants were comprised of 1) Accessibility (cost of travel, time of travel, frequency, convenience, barriers for travellers such travel formality like visas and customs) 2) Local support (local assistance of association, logistical and promotional support from convention centre, subsidies) 3) Extra conference opportunity (entertainment, shopping, sightseeing, recreation and professional opportunities) 4) Accommodation facilities (capacity, cost, service, security, availability) 5) Meeting facilities (venue capacity, layout and floor plan, cost, ambience, security, availability, services) 6) Information (MICE experience, destination reputation and marketing) 7) Site environment (climate, attractiveness of the destination's surroundings, suitability and standard of local infrastructure and local hospitality) 8) Other criteria (risk, profitability, association promotion, novelty attributes). In addition, a conceptual model of the site selection process was also developed composing of three steps: 1) convention preplanning, 2) site selection analysis and recommendations, and 3) site selection decision. This study was remarkable and influential on later studies on MICE site selection.

The dynamic growth of the Meetings Industry impacted worldwide as well as the peripheral country like Australia. Five major challenges to promote Australian MICE industry were proposed; cooperation among industry stakeholders, more government support, public and private infrastructure, improvement of service standard and training, and effective marketing effort (Dwyer & Mistilis, 1999).

In Europe, Schütter (2010) studied success factors of Vienna as top international congress destination ranked by International Congress and Convention Association (ICCA). The study found that Vienna's victory considerably depended on

an effectiveness of Vienna Convention Bureau on marketing activities, a strong partnership of industry organizations, great choices of venues and excellent public transportation system, splendid image of musical, cultural, and historical city, Austrian scientists' influence on venue selection, a great role of Vienna medical sector, a strong support of government, and a home of important international organizations.

In line with the Vienna success, Falk and Hagsten (2018) studied the art of attracting international conferences to European cities by exploring attractiveness of 943 cities in Europe for the period of 2012 – 2016. They pointed out that cultural attractions (museum, world heritage site), knowledge intensity (quality of local university), attractive as allocation for international R&D and city size were important determinants for the probability of becoming a host city. On the other hand, to become a host city, they emphasized that infrastructure like airport nearby and sea border were significant factors.

In regard to trade fair, Hanover city in Germany is illustrated as this city is well known for its one of the world largest trade fair; the Hanover Messe. Situated in the Hanover Region, the city of Hanover is a capital of Lower Saxony of the north German federal state, representing as an economic and cultural centre of the region. Moreover, the region itself is also the transport node, a centricity of industries and a leading service location. Nonetheless, this place interestingly attracts not only business travellers but also many leisure and recreational travellers due to its great variety of tourist natural resources such as mountains and valley (Priebs, 2014). For Hanover, the city success is based from its strategic location and natural resources.

Differently for Las Vegas, the city has turned itself to a popular trade show city of U.S. by its own unique man-made attractions. Las Vegas has been well-known as a sin city for a long period of time, it has however gradually transformed its business model from a gaming-centric city to entertainment and business travel destination. According to Yinying (2013), this adult entertainment oriented city had been turned to more tourist destination since 1999 and it still kept its reputation for eighteen consecutive years as the best destination for trade shows in the United States. The study stated that Chinese convention participants came more and more to Vegas for shows such as the world most influential Tech event; Consumer Electronic Show (CES), ASD Trade Show, and magic shows. Different types of entertainment, great dining experience for food lovers, luxurious shopping and city architectures had changed Las Vegas more distinguishable and attracted a large number of leisure tourists.

Similarly in Asia, many cities have been impacted by the aggressive global trend of business tourism. For instance, Singapore took advantages from its geographic location and modernization of its infrastructure and management as the top convention destination in Asia since 1982. Nevertheless, high cost country and a dearth of entertainments and cultural attractions were identified as weakness for MICE city competitiveness. To leverage its market positioning from regional to

global market, Singapore attempted to develop transportation, hospitality, and human resources (Lew & Chang, 1999).

In his comparative analysis between Singapore and Macau, Tan (2007) indicated eight important attributes in determining attractiveness of these two MICE sites. Scrutinized from industry expert in-depth interview, those attributes were 1) city safety and security 2) destination accessibility notably by air 3) MICE facilities including availability of meeting venues, hotels and food and beverage 4) quality of both tangible and intangible services especially qualified manpower with professional skills and experiences 5) cost 6) supportive environments such as political stability 7) city attractions and entertainments and 8) destination branding. The findings portrayed that Macau was more attractive as a MICE destination especially representing itself as Las Vegas of Asia. On the contrary, Singapore attracted more for international MICE markets. Air accessibility of Singapore was found the biggest advantage over Macau apart from its business ecosystem, headquarter base of many multi-nationality enterprises and post-event business opportunity. However, high cost of Singapore distracted its attractiveness.

Likewise, Lam and Crossley (2014) conducted a comparison study on Las Vegas and Macao. Although these two adult-centric playground cities had many in differences, for instance, geographic location, history and culture, they both have successfully been diversified themselves to complete leisure destinations through their other offerings such as iconic architectures, entertainments, shopping, and events. However, one similar characteristic of these two cities was revealed. They offered decent transportation infrastructure; air and road. Macao was additionally reachable by ferry from Hong Kong and Zhuhai, China mainland. The study affirmed that airports had been crucial to the growth of both cities. Resulted from the increasing numbers of visitor, McCarran International Airport in Vegas had been expanded accordingly. On the other hand, the city development was also critical for the growth of airport too. Here was another example of interrelationship between air transport and city development.

Regarding Thailand, to promote more MICE city, TCEB has set criterion to evaluate level of city competency. The eight criteria were grounded on a site selection model of Crouch and Ritchie in 1997 with minor adaption into current environment. The TCEB MICE city determinants are 1) accessibility (travel cost and time, flight frequency, convenience and linkage), 2) local supports (government, local chapter and personnel efficiency), 3) MICE products and opportunity (tourist attraction, recreation, shopping and entertainment, 4) accommodation facilities (hotel variety, facility, cost, and services), 5) MICE facilities (venue variety and capacity, cost, ambiance, services and experience), 6) city branding (marketing activities), 7) city environment (climate and hospitality), and 8) city safety (risks and security).

In conclusion, destination attractiveness have been concentrated by scholars worldwide. Site criterion were drawn from many perspectives of industry concerns.

Taking all these attributes into account, logistics and supply chain seem to be one of critical components for MICE destination competitiveness.

2.5 Logistics and Supply Chain for MICE city

Extracted from the aforementioned literature review on tourism logistics, MICE logistics and supply chain, and MICE destination selection, key players, enablers, and factors for MICE city are listed and categorized into two dimensions; logistics and supply chain, with different attributes in detail as summarized in table 2.1. The supply chain members of MICE city are additionally identified in the table.

Table 2.1 Logistics and Supply Chain attributes for MICE City

Logistics Dimension		
Author (Year)	**Factors of MICE city**	**Supply chain members**
Tan (2007), Lam and Crossley (2014)	International Route	- Airlines - Airports
Lam and Crossley (2014)	Airport Connectivity	- Airports - Airport transfers - Public transport
Crouch & Ritchie (1997), Priebs (2014), Tan (2007), Lam and Crossley (2014)	Inter-city Transportation	- Airlines - Bus services - Rail
Crouch and Ritchie (1997), Schütter (2010)	Intra-city Transportation	- Public transport - Car rental companies
Supply Chain Dimension		
Author (Year)	**Factors of MICE city**	**Supply chain members**
Crouch and Ritchie (1997), Dwyer & Mistilis (1999), Schütter (2010)	Local support for MICE activities	- Local governments - Private sector
Crouch and Ritchie (1997), Schütter (2010), Lew & Chang (1999), Tan (2007),	MICE Experience and Marketing activities	- MICE personnel - MICE organizers
Crouch & Ritchie (1997), Tan (2007), Schütter (2010)	MICE Venue and facilities	- Convention & Exhibition center - Hotel and convention center - Hotels
Crouch and Ritchie (1997)	Accommodation	- Hotels and resorts
Crouch and Ritchie (1997)	MICE Program and extra opportunity	- MICE organizers - Destination Management Organizers
Crouch & Ritchie (1997), Lew & Chang (1999), Tan (2007), Schütter (2010), Yingying (2013), Priebs (2014), Falk and Hagsten (2018),	City Image	- Tourist attractions - Shopping/Entertainment center - Restaurants - Local university/associations - Local residents
Crouch & Ritchie (1997), Tan (2007)	City Safety	- Police - Healthcare centre

Based on tourism logistics and supply chain theory and previous literature review, the conceptual framework of logistics and supply chain for MICE city is illustrated in figure 2.3 below.

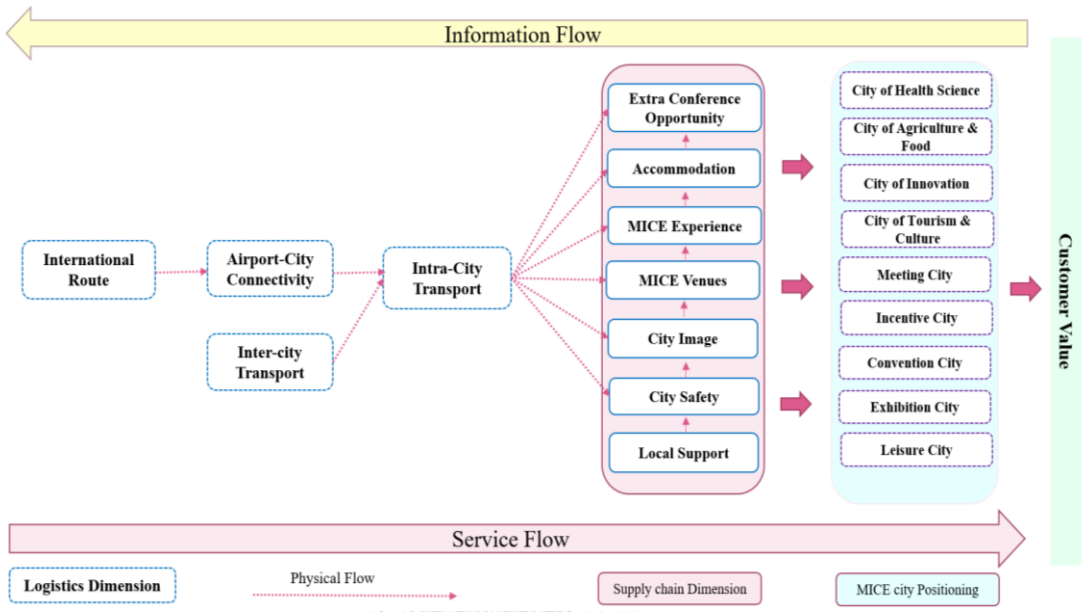


Figure 2.3 Conceptual Framework of Logistics and Supply Chain for MICE city

2.6 Analytic Hierarchy Process (AHP)

2.6.1 Overview and Application

Rational decision making is a talent that one must encourage if one want to produce more effective decisions in the real world that has both risks and opportunities. Decision making involves prioritizing ideas according to the situations encountering. (Whitaker, 2007).

Among the Discrete Multi-Criteria Decisions (DMCD) techniques, the Analytic Hierarchy Process (AHP) was one anaytical approach for solving complex problem. Review of the AHP major development conducted by Ishizaka and Labib (2011) depicted that the technique was firstly introduced by Miller in 1969 in his doctoral dissertation. The pairwise comparison with 1-9 scale was inspired by psychological technique used long time before.

In regard to the method, the study briefly illustrated the four main steps of AHP method. The first step was modeling problem in hierarchical structure of criteria. This step was crucial because if the problem was differently structured from the way it should be, this might mislead to different final solution. Hierarchical structural

model assists decision makers to concentrate on particular criteria and sub-criteria in order to achieve objective or goal. The second step was weight valuation through pairwise comparison. At this stage, decision makers need to make judgement by allocating weight in ratio scale. The next step was to convert preference verbal statements into integers from one to nine. According to Satty, ratio scale was the best. The final step was to derive priorities by "Mean of Row" or "Geometric Mean" methods. The most important part of AHP was to check the consistency of respondents. The priorities would be valid only if they were consistent. The Consistency Ratio (CR) indices proposed by Satty was applied at this important stage (Ishizaka & Labib, 2011).

For application, AHP is a widespread technique applied in various fields due to its ease of applicatility. Emrouznejad and Marra (2017) carried out an interesting longitudinal analysis of AHP development starting from 1979 to 2017. The study divided the AHP evolution into three periods. The findings revealed that during the first period (1979-1990), AHP was intensively applied in mathematics, followed by some other disciplines such as business management, economics, and health respectively but with small number of publication. The second period covered 1991-2001 when numbers of AHP papers were tremendously increased from 86 of the first period to 716 papers. As well, the areas of study were expanded to new and current issues, for instance, environmental science and technology, followed by mechanical engineering, ecology, social, and material sciences. The third period was the most popular period of AHP according to the number of publication (7,639). The dominant researches in this period contributed to mathematical techniques, computer science, and management studies. It was also noted that there were efforts to improve AHP technique in combination with other multi-criteria decision making methods such as a fuzzy-based approach, AHP and TOPSIS, AHP and DEAHP, AHP and SWOT analysis, or AHP and sensitivity analysis. Strengths and weakness of AHP were also identified in this study. One of the most advantages of AHP was its ease and flexible to use. The technique simplify complex problems into hierarchical structure and allow decision maker to precisely consider criteria, weight their importance, and finally assess the alternatives. Furthermore, this technique also enable to quantify subjective factors like attitude, preferences to be measured. However, AHP has also been criticized for its weakness on inconsistency of decision maker's pairwise judgement.

In practical world, the AHP usages had been listed in various settings. For example, the US Department of Defence used AHP to allocate their resources to their diverse activities. It was also use to relocate site for earthquake in Turkish city Adapazari in 2001 and appplied for US versus China conflict in the Intellectual Property Rights battle in 1995. Regarding business environment, AHP has been used by Ford Motor Company in 1999 to establish priority for criteria improving customer satisfaction. As well, Xerox Corporation has used AHP for their budget allocation (T. Saaty, 2008).

2.6.2 AHP Application in Transport

As investment in aviation industry is huge and concerns many stakeholders in various dimensions; economies, society, and environment. Decision making is possibly composed of sophisticate criteria like quantitative and qualitative attributes that causes difficulties to make judgement. The multi-criteria decision makeing methods therefore assist decision makers in simplifying decision process and search for pertaining alternatives. Various existing researches of aviation reflect the useful application of these approaches.

For example, Eller and Moreira (2014) employed AHP to prioritize main factors affecting strategies in reducing airlines cost in Brazilian aviation market. The researchers said that the Analytic Hierarchy Process (AHP) was attractive due to its incorporation of both quantitative and qualitative criteria. The AHP based approach is also useful in Italian airline market for aircraft supplier evaluation (Bruno, Esposito, Genovese, & Passaro, 2012). Delbari, Ng, Aziz, and Ho (2016) applied a mixed methods of Delphi and AHP investigating key indicators of competitiveness for Full Service Carriers (FSCs) in Malaysia.

In a nutshell, Dožić (2019) conducted a research on multi-criteria decision making application in the aviation industry by reviewing publications during 2000 to 2018 from academic library databases such as Sciencedirect, Ebsco, Springer-Link Journals, and Web of Science. The study revealed that among aviation sectors (airlines, airports, air traffic management, and aircraft manufacturer), airline business got most attention from scholars using MCDM in enhancing their service quality, selecting business partners and aircraft type, retaining their competitiveness, improving their financial performance, and identifying safety index (Tsaur, Chang and Yen, 2002; Liou and Tzeng, 2007; Singh, 2016). For AHP, it was employed on the specific objectives of service quality, airline competitiveness, risk assessment, route choice evaluation, and aircraft selection.

Airport sector was the next unit of analysis that MCDM were often adopted. The most specific objectives commonly discussed in this area were airport performance, followed by service quality, location, and risk and safety respectively. Regarding AHP, it was found out that the technique was mostly adopted for evaluation of airport development plan, risk, effeciency performance, and service quality. The next popular themes on airport study were site selection of new hub airports, and cargo airports.

In terms of Air Traffic Management (ATM), the problems of ATM addressed safety issues and human factors. According to the review, the analysis showed that there was a small number of papers refering to MCDM in solving ATM problems. Among all these, AHP was the most frequently used method as well.

In accordance with the findings of Emrouznejad and Marra (2017), this study illustrated that it was seldom found stand alone AHP published during this period. On the contary, combination of AHP and other techniques like regime analysis, flag

model, engineers judgement, Delphi, DEA, Fuzzy, Topsis, and simulation were often presented.

The study of Dožić concluded that AHP was the most often applied among MCDM techniques during 2000-2018 publications. Interestingly, this technique was very popular in Asia due to the fact that more than one third of papers referred to Asian case studies. The findings remarkably noted that developing countries like Asian countries might need technique like AHP to help them solve complex decision from various perspectives of stakeholders.

2.6.3 AHP and Airports

Based on the review of Dožić and previous literature, AHP method in airport studies are more precisely described bellows:

Starting from Min (1994), AHP, referred to as appropriate approach to solve complex problem, was used for location planning of airport facilities in U.S.

Lirn (2010) applied AHP to explore from major airlines in Taiwan the most important service attributes and the performance of the Taoyuan International Airport (CKS airport) in order to develop it to be a cargo hub airport in East Asia. The findings revealed that geography of airport was the most important service attribute, followed by congestion and delay, operational availability, bilateral agreement, local demand, political risk and airport user charge.

Zainuddin, Shalbia, Ghani, and Mohd Saifudin (2012) investigated if a different approach like AHP was applicable in facilitaing decision makers facing multiple criteria problem like location choice for low cost carriers operation in Malaysia. The conclusion was that by representing the strenghts and judgement numerically and agreeing on a value, the arguments of group decision making was shorten. The AHP helped rationalize decision making. It provided which criteria outweight another in short and long term planning.

Zietsman and Vanderschuren (2014) assessed a secondary airport development for a multi-airport system in the city of Cape Town where there was only Cape Town International Airport solely served the area. According to the research results, The city should remain using the single-airport system untill traffic volume reached up to 27 million per annum.

In summary, to assist decision makers, the AHP is selected to solve this multi-criteria decision making (MCDM). The AHP was popular due to its simplicity and flexbility. Besides, the AHP technique was transparent process and negotiated tool to avoid conflict of interest when group decision making were concerned (Medjoudj, Laifa, & Aissani, 2012).

2.7 Discrete Choice Model and Multinomial Logistic Regression (MLR)

In practical cases of realistic world, to find a solution of a problem by regression analysis, it is not possible to restrict solely on quantitative response. Qualitative response can either be yes/no answer or alternatives of choices. These dependent variables are known as binary or dichotomous variables, trichotomous, or even polychotomous (multiple-category) response variables. In qualitative response regression models where independent variables are qualitative in nature, the objective of the model is to find probability of something occur. This kind of regression models are also called probability model (Gujarati & Porter, 2009) or discrete choice model.

Since there are always more than two alternatives to choose in real life, discrete choice model is consequently popular in wide rank of studies in different fields. Particularly, there is a widespread usage of discrete choice model in behavioral choices, for example, residential location choice, automobile purchasing choice, election candidate choice, and travel mode choice. In case of multiple responses without order, the multinomial logistic regression is the best analytical approach to apply.

The Multinomial Logistic Regression (MLR) is one type of linear regression analysis applied when dependent variables are nominal outcomes and having more than two alternatives. It is a predictive analysis explaining relationship between a set of continuous independent variables and probability of an event to happen. The percent of possibility of different outcomes is estimated by a set of explanatory variables, in comparison to the reference category. Although biomedical studies were the early uses of categorical data analysis, the methods have been recently applied in various fields of study (El-Habil, 2012), such as social behavior (Gordon-Larsen, McMurray, & Popkin, 1999; Murata, Fujii, & Naitoh, 2015; Peng & Nichols, 2003), healthcare (Bassani, Surkan, & Olinto, 2009; Bibiano, de Lima Silva, & da Silveira Moreira, 2019; Durden & Hummer, 2006; Kwak & Clayton-Matthews, 2002), education (Brauns, Mueller, & Steinmann, 1997; Nguyen & Taylor, 2003; Toutkoushian, Stollberg, & Slaton, 2016), and transportation (Bolduc, 1999; Coughenour, Paz, de la Fuente-Mella, & Singh, 2015; Gupta, Kumar, Neelima, & Tomar, 2014; Truong & Somenahalli, 2015; Yaghini, Khoshraftar, & Seyedabadi, 2013).

2.7.1 Multinomial Logistic Regression (MLR) and Air Transport

Empirical works show growing trend in the uses of Multinomial Logistic Regression Model in both main sectors of the aviation industry; airline and airport business. Firstly, in airline business, for instance, Cipriani, Crescenzi, and Nigro (2014) applied different utility models including multinomial logit model to estimate behavioral model for Rome-London flight connections. The research results were meaningful for both airlines and airports for their short-term capacity management

and long-term investment. More recently, this technique also helped identifying determinants influencing aircraft arrival delay of U.S. airports (Konidina, 2018), forecasting city-pair passenger demand and developing an aggregate air itinerary marker share model (Busquets, Alonso, & Evans, 2018), and analyzing factors of service failures of U.S. civil aviation industry (Arora & Mathur, 2020).

In respect to airport sector, the most popular topic for multinomial logistic regression are airport choice model and airport access mode choice. One of the first leading scholars studying on airport choice was Robert E. Skinner since 1976 (Hess, 2004). The idea was furthered by Hess and Polak (2005) using Mixed Multinomial Logit Model examining passenger airport choice in San Francisco Bay area. Their findings demonstrated that airport access time, fare and service frequency were significant determinants. Interestingly, the study also supported the early findings that leisure travelers were price sensitivity in terms of fare while business travelers were time sensitivity in terms of access time. They preferred to pay more if access time could be minimized. The longer the access time take, the more likely passengers might miss the flights. Similarly, the study of ground access mode choice for Hong Kong International Airport (HKIA) supported the above results. According to Tam, Lam, and Lo (2008), business passengers weighted higher important to value of time to airport than non-business passengers and they were willing to pay more for faster and reliable transportation services to airport.

In line with the previous works, the empirical study of multi-airport regions in China metropolitan area revealed that four main significant attributes for airport choice were airfare, flight frequency, airport past experience, and access time. The study remarked that passengers from developing countries were more sensitive to airfare than those from developed countries while passengers from both types of country enjoy to revisit the airport they were familiar with (Liu, 2008).

2.7.2 Multinomial Logistic Regression (MLR) and Tourism

Early adopted since 1974, Richards and Ben-Akiva (1974) undertook a research on a destination mode choice and mode choice model for shopping trips by using multinomial logit model. Later, Thrane (2008) employed multinomial logit regression to investigate determinants of Norwegian students' destination choices for their summer vacation trips. While socio-demographic attributes such as gender, ages, and status played unimportant role, vacation motives (an escape motive, a home loving motive, a constraint motive) and trip specific motives (big city and shopping, nature experience, culture and sightseeing) were found influential for destination choice.

Another interesting literature on Norwegian tourism was a research conducted by Thrane (2015). The study examined tourist mode choice for long distance transportation and found out that travelers preferred to take air transportation for a trip exceeding 400 kilometers. Apart from the distance, length of stay, destination types,

trip purposes, and number of companions also played important role in decision making. On the contrary, socio-demographic characteristics took less effect in decision model.

Lately, Nurlaela (2018) used Multinomial Logit Model (MNL) to identify the best scenario of tourist destination choices for the Tropical North Queensland given the budget performance. Likewise, Sánchez-Rivero, Rodríguez-Rangel, and Fernández-Torres (2020) indicated factors determining probability of practicing inland water tourism in Spain through logistic regression models. The findings showed that age, trip types, and accommodation types were influential predictors for Spanish tourists but these determinants were not effect foreign market.

CHAPTER III
RESEARCH METHODOLOGY

This first section of this chapter firstly illustrates the research design. The second half of the chapter is a step-by-step description of research process breaking down into ten steps.

3.1 Research Design

With a general overview, this research aims to study on logistics and supply chain for MICE cities. In this instance, this study is classified as a non-experimental class of research using survey as the main methods of the study. The research was consecutively conducted in three phases.

The first phase was research conceptual framework concerning research question identification and literature review.

The second phase was research planning and data collection consisting of research planning and questionnaire design, expert review, pilot study, and data collection.

Data analysis and report was the final phase involving descriptive analysis, inferential analysis, AHP pairwise comparison matrix, Multinomial Logistic Regression and Marginal Effect Analysis, and conclusion.

The research process is illustrated in Figure 3.1.

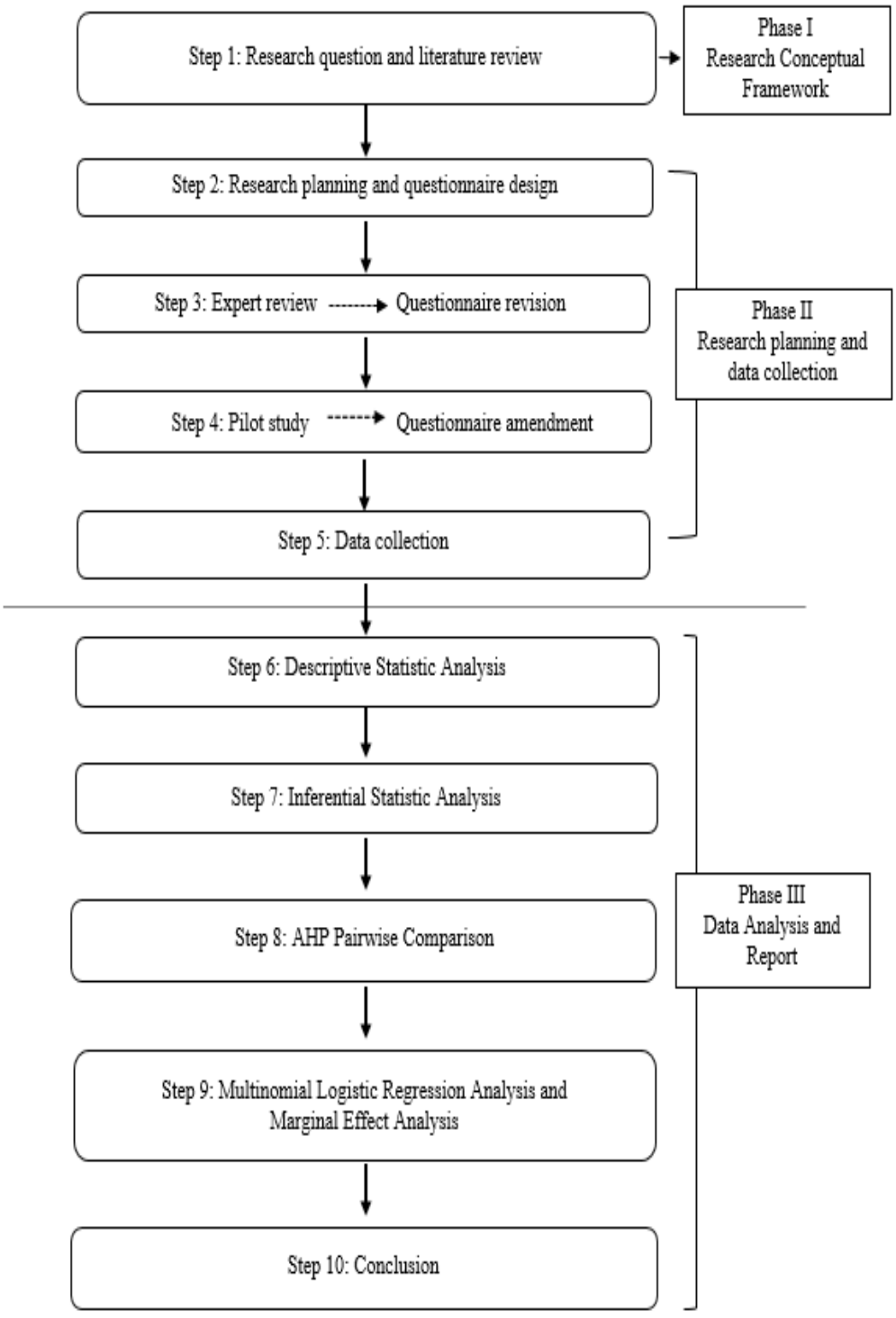


Figure 3.1 Research Process

3.2 Research Process

Phase I Research Conceptual Framework

The first phase is conceptual framework of the study. Triggered by the rapid growth of MICE tourism worldwide and in Thailand especially in many major cities like Bangkok, Chiang Mai, Phuket, and Pattaya, the idea of how to develop secondary or potential cities in others regional parts of country to be MICE city had originated. Since most major MICE cities have already been concentrated, regional minor cities became main focus areas of this study.

3.2.1 Step 1: Research Question and Literature Review

Tourism plays vital role and efficient tool in regional development of Thailand. However, tourism destinations vary from different types of leisure to different kind of trip purposes. Business trips are one kind of journey that has intensive growth and contribute significant socio-economic impact to country. As a result, past and current relevant literature on the Meetings industry particularly on MICE destination (MICE city) was conducted.

Literature review in chapter two provides overview of tourism logistics and supply chain, tourism destination, key players and dominant factors of MICE destination. Results of the review showed that logistics and supply chain of MICE city is an emerging theme for academic field in both global and national levels. Then, rationale of study was established according to gaps of previous studies.

Based on tourism logistics and supply chain, and the ground theory of Crouch and Ritchie and others leading scholars, seven variables were extracted as success factors of logistics and supply chain for MICE destination which are accessibility, local support for MICE activities, MICE experience, MICE venue, accommodation, MICE program and extra opportunity, city image, and city safety.

In addition, attributes on accessibility was consequently expanded in this study to distinguish roles of logistics for MICE city competitiveness. Thus, air travel attributes like international routes, and airport-city connectivity were added for need assessment. Other domestic forms of travel such as inter-city and intra-city transportation were also included to complete intermodal transportation network.

Moreover, in accordance to TCEB strategy to support Thailand National strategy, some particular attributes on Thailand S-Curve industries (Health Care city, Agriculture city, Innovation city, Tourism city) and “M-I-C-E” city were also applied to differentiate city positioning for MICE markets.

Based upon differences of city characteristics and resources, each city might face different challenges and constraints for MICE city development. The findings of this study would therefore be beneficial for each city to grow into their own potential by differentiating their uniqueness from their own resources, and offering their MICE tourism products to appropriate market segments. The significant attributes identified in this study might be fruitful for MICE destination development in terms of logistics and supply chain.

Phase II Research Planning and Data Collection

3.2.2 Step 2: Research Planning and Questionnaire Design

This stage involves identification of research approaches; qualitative or quantitative methodology, population and sampling, data collection method, and questionnaire design.

3.2.2.1 Population and Sampling

This study is a quantitative research as placing emphasis on numerical data collection and analysis with statistical measurement (Eyisi, 2017; Neville, 2007). The population of this research consisted of stakeholders from two main industries of the study; transportation and the Meetings industries. The sampling frame was key players from logistics segments including aviation sector; Civil Aviation Authority of Thailand (CAAT), airport, airline, local transports from the areas of study as well as from other cities in order to avoid local bias. For MICE industry, Thailand Convention and Exhibition Bureau (TCEB), hotels and accommodation, Destination Management Organizations (DMOs), academia, local authorities, and other related service business were involved.

Purposive sampling technique was employed to recruit MICE and transportation stakeholders. A snowball technique was also used for gaining insights contact information of field experts and provincial authorities.

In regards to sample size, El-Habil (2012) referred to guideline of Hosmer and Lemeshow that the minimum number of observation for each explanatory variable was 10 and a variable ratio 20 to 1 predictor was ideally recommended. Thus, the collected data set consisting of 20 independent variables with 429 valid cases met requirement and sufficient to accurately estimate parameters of this study.

3.2.2.2 Questionnaire Design and Development

The questionnaire was selected as a tool for data collection and was designed to address the research objectives. It is consisted of four parts; 1) demographic data of the respondents, 2) logistics and supply chain success factors for

MICE destination, 3) MICE city competitiveness comparison, and 4) suggestions for MICE city development. The rational of questionnaire design is described as following:

The first part of questionnaire was composed of choice questions gaining demographic profile of respondents on gender, age, organization name and types, years of working experience, level of working position, and date of response.

The second part is to identify success factors for MICE destination. To detect importance level of logistics and supply chain of MICE city determinants, Likert-scale type question was applied. With long history since 1932, this approach was first developed by Rensis Likert as part of his psychological doctoral dissertation (Willits, Theodori, & Luloff, 2016). This technique has become popular and widely used especially in social science due to its distinguished qualification in quantifying individual's subjectivity like attitude, perceptions, ability, and feelings into objectivity (Joshi, Kale, Chandel, & Pal, 2015). Nevertheless, debate on either ordinal or interval data the Likert response to be treated were severally discussed in past studies (Awang, Afthanorhan, & Mamat, 2016; Bishop & Herron, 2015; Harpe, 2015; Joshi et al., 2015). As ordinal scale, the data is evaluated by non-parametric statistics which are generally perceived less powerful than parametric statistics (Bishop & Herron, 2015). Moreover, although the original Likert-scale item had 5 possibility of response with neutral option, the number of items in a Likert scale was also generally questionable for distance between numbers and neutral category. Regarding distance between numbers, Likert had clarified in his initial article that those distances were equally set (Harpe, 2015). According to his clarification, this is classified as interval scale and can be measured by mean and standard deviation or statistically treated with Pearson Product-Moment Correlation Coefficient, Analysis of Variance (ANOVA), and Regression Analysis (Joshi et al., 2015). In regard to number of Likert item, Taherdoost (2019) suggested seven-point rating scale in his study whereas six-point scale might be more appropriate if taking side problem want to be eliminated. The reliability and validity of different numbers of response had also been compared and discussed in his study. It showed that reliability and validity are increased when the numbers of scale point are higher. In line with this argument, Willits et al. (2016) supported that extending the number of optional response from five to seven offered greater differentiation in response but more than seven caused confusion. The seven-point Likert scale was then carefully determined to use in this research in visual analogue scales; labels presented only on the extreme of two sides of numerical options. Without label on each scale, the number line format helps responses to be measurable as interval data rather than ordinal scale (Harpe, 2015). The advantage of this unlabeled ruler or visual analog response scale is recommended on various studies (Bishop & Herron, 2015; Taherdoost, 2019; Willits et al., 2016).

Next is the part of examining competitive advantages of three cities of study area; Phitsanulok, Khon Kaen, and Krabi, for the probability to be selected as MICE destination. At this stage, Analytical Hierarchy Process (one stage) was used in

measuring competitive advantage of two cities at a time by pairwise comparison. Respondents would be asked to compare competitive advantage of one city over the other for twenty categories.

Analytical Hierarchy Process (AHP), developed by Thomas L. Saaty during 1971- 1975, is a measurement widely applied in Multi-Criteria Decision Making (MCDM) for planning, conflict resolution, and resource allocation (R. W. Saaty, 1987). Based on relative measurement approach, the AHP emphasizes on proportional measurement rather than exact measurement. This method is popular because the technique advantageously permits to measure intangibility such as experience, and subjective preference in a logical structure. By structuring the decision in hierarchy, the process decreases its complexity and in the meantime presents relationships between objectives and the potential alternatives. The AHP model is developed as follows:
1) break down the decision into hierarchy of goal, criteria, and alternatives, 2) conduct a pairwise comparison matrices to derive priority weight (Mu & Pereyra-Rojas, 2017). The AHP model for MICE city is structured as a hierarchy as figure 3.2.

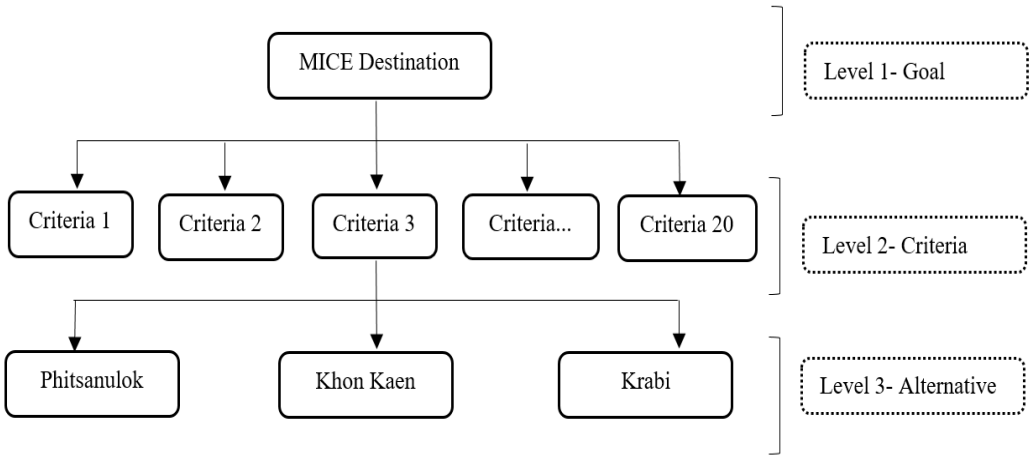


Figure 3.2 Decision Hierarchy for MICE Destination

Figure 3.2 clearly presents the hierarchy decomposition of decision making on MICE destination. The first level is a goal in searching for MICE destination. The second level are criteria (factors) through which the alternatives in the lower level would be evaluated. The third level are MICE city choices: Phitsanulok, Kohn Kaen, and Krabi.

The criteria priority weights for the second step can be derived from pairwise comparison the relative priority of each criterion with respect to each of the other. By adapting a numerical scale developed by Saaty (T. Saaty, 2008), pairwise comparison scale for MICE destination is demonstrated in table 3.1. In the questionnaire, respondents were requested to compare two cities by using this scale.

Table 3.1 MICE Destination Pairwise Comparison Scale

Intensity of Advantage	Verbal Description	Explanation
1	Equal advantage	Two city contribute equally to the objective
2	Weak or slight	
3	Moderate advantage	Judgement slightly favor one city over another
4	Moderate plus	
5	Strong	Judgement strongly favor one city over another
6	Strong plus	
7	Very strong	Judgement very strongly favor one city over another
8	Very, very strong	
9	Extreme advantage	The evidence favoring one city over another is of the highest possible order of affirmation

The final part of the questionnaire is an open-ended question requiring suggestions for MICE city development.

3.2.3 Step 3: Expert Review

After the initial questionnaire was completed, a next step to proceed was expert review. This pre-requisite step was critical in research instrumental development as not only the validity of content that was examined but also criterion (Muda et al., 2020). Also so-called as definition validity and logical validity, content validity is an ability to identify items to represent the variables of the target construct in the content domain. The research instrument can be improved through recommendations of expert panel. If the content is not valid, it is not possible to establish reliability (Zamanzadeh et al., 2015). Five to ten experts in the field are suggested by scholars (Yaghmale, 2009; Vakili & Jahangiri, 2018) for sufficient and useful judgement on relevance, clarity, simplicity, and ambiguity of the questionnaire. Thus, the experts were recruited on the basis of their expertise, current job positions, and related experiences in MICE industry. Five experts from different types of sectors were selected; two from Thailand Convention and Exhibition Bureau (TCEB), one from Exhibition organizer, one form airline company, and the last one from logistics academia.

Regarding the result, all experts agreed with the questionnaire content. One expert recommended that the survey covered all aspects of MICE city criterion, however, data collection procedure should include all stakeholders of the business. The other expert provided useful comment from his international MICE experience that marketing of the city was important. Logistics played as node and link to connect people, however, the most important was what city had in supplying MICE tourism product to visitors. Each city should realize its uniqueness, and enable to distinguish its competitive advantages from their settings such as industrial city, cultural city, and

tourist city in order to properly position and promote itself as city of Meeting, Incentive, Convention, or Exhibition.

This recommendation triggered the idea of adding five more questions in part three of the survey to evaluate city positioning of Phitsanulok, Khon Kaen, and Krabi; which city was outstanding to be selected as a city of Meeting, Incentive, Convention, Exhibition or only simply a leisure city. At this stage, the questionnaire part three was composed of 20 criteria of pairwise comparison.

3.2.4 Step 4: Pilot Study

After the expert review, a pilot study was consecutively undertaken. A pilot study is suggested as a fundamental element for a preparation of a main research. Moreover, various benefits of pilot study were provided; refining adequacy of research instrument, gaining preliminary data, identifying practical difficulties, detecting unclear or ambiguity, and assessing likelihood of research success. The pilot study was then also known as feasibility study, pre-testing, and trying-out (Van Teijlingen & Hundley, 2002).

A group members for a pilot study was selected with the same criteria as planned for the main study. The 40 participants from related business; for instance, academia, destination management company, airport, and airline employees, were requested to fulfil the quality of the questionnaire. The numbers of 40 was determined in accordance to Connelly (2008) recommending that sample size of pilot study should be 10% of the sample size planned for the final study. Extant studies discussed on how many participants should be included in the pilot study. Some of them suggested that 10 to 30 N were practical for hypotheses whereas some followed the rule of thumb of a minimum of 12 per group. Opposed to Johanson, Brooks, and Measurement (2010), their findings suggested that for initial scale development, a minimum of 30 representatives of group interest was reasonable. The study also mentioned that the larger the sample size, the greater the precision of estimates. As a result, the sample size of this study was 40.

The survey was translated from English into Thai and disseminated to target participants by non-official meeting and post mail. For hand-in participants, the process started with researcher introduction and research purpose while for postal mail, this process was undertaken prior by phone calls. The pilot study lasted for two weeks. Lessons learnt from the pilot study were reflected. Regarding participant recruitment, official permission letter for data collection were requested by some public companies. In respect to survey, there was a feedback on some of items in questionnaire part two. The term “Safety and Risk” might cause some confusion due to their contradiction. Overall, survey were found no difficulty to complete for respondents. Accordingly, certain amendments had been made; the item “Safety and Risk” in questionnaire part two was simplified to “City safety”. Researcher

information has been provided on the first page of introduction in case of more inquiries.

In regard to pilot data analysis, a basic descriptive analysis like percentage, and frequency was carried out without encountering any difficulties. Pearson correlation was also tested.

3.3.5 Step 5: Data Collection

With guidance from pilot study, the initial contact were performed via telephone calls and online channels for more information on bureaucratic system and contact person identification. Official permission letter for data collection were accordingly prepared for requested companies such as airports and airlines in the study areas. The letter also referred to confidentiality of participants' information.

Researchers' personal connections were very useful to address academic sector; public and private universities providing MICE programs, airline staff, destination management companies, hotel employees, and airport officers. The data collection process was started at the end of November 2019 to April 2020 through in-person appointment, telephone calls, and post mail. On-site data collection were carried out at Phitsanulok in December 2019 and at Krabi in February 2020 in accordance to availability of local stakeholders concerned. For Khon Kaen and areas where trips were not permitted due to invasion of novel corona virus (COVID-19), a package containing a letter of permission, questionnaire, and a self-addressed stamped envelope were directly sent to a contact person of each company for survey circulation. After a month of distribution, package of questionnaire were started to return. Follow-up calls were also made. Five hundred survey were distributed and 454 returned. However, the final complete questionnaire were 429 due to some duplication data of some survey.

Phase II Data Analysis and Report

Accurate data generates accurate statistical analysis and conclusion. However, data entry might cause errors in analytical problem and findings (Kupzyk & Cohen, 2014). In avoidance of data entry errors, the process entry was carefully performed by structuring each survey with running number, coding the variable, entering data, and rechecking data entered for data validation. As previously mentioned in the literature review section on determinants of MICE city, variables of the study were denoted as follow:

Table 3.2 Variables Coding and Measurement

No.	Variables	Types	Measurement	Definition
1	lnKBV/PHS	Dependent	log-odd	Probability of Krabi as a MICE city compared to Phitsanulok
2	lnKKC/PHS	Dependent	log-odd	Probability of Khon Kaen as a MICE city compared to Phitsanulok
3	InterRoute	Independent	Correlation label/1*	International Route
4	AirportConnect	Independent	Correlation label/1*	Airport-city connectivity
5	InterCity	Independent	Correlation label/1*	Inter-city transportation by air, road, rail
6	IntraCity	Independent	Correlation label/1*	Intra-city transportation
7	LocalSupport	Independent	Correlation label/1*	Local support from public and private sectors
8	MICEExp	Independent	Correlation label/1*	Professionals MICE experience of personnel, level of event host (provincial, national, international), MICE marketing and promotion
9	MICEVenue	Independent	Correlation label/1*	MICE venue; location, cost, communication infrastructure, services, safety, environmental policy
10	Accom	Independent	Correlation label/1*	Accommodation; hotel standard, room rate, accessibility, safety, environmental policy
11	MICEProg	Independent	Correlation label/1*	MICE program and extra opportunity during visit; keynote speakers, business network, leisure trip
12	CityImage	Independent	Correlation label/1*	City Image; tourism sites (historical, natural, cultural, nightlife), local food, hospitality, green city
13	Safety	Independent	Correlation label/1*	City Safety; road safety, risk from disaster or protest, safety and security standard, medical standard
14	HealthSci	Independent	Correlation label/1*	Suitability of city as a host of health science event
15	AgroCity	Independent	Correlation label/1*	Suitability of city as a host of agriculture event
16	InnoCity	Independent	Correlation label/1*	Suitability of city as a host of innovation and technology event
17	TourismCity	Independent	Correlation label/1*	Suitability of city as a host of tourism and culture event
18	MeetingCity	Independent	Correlation label/1*	Suitability of city as a meeting city
19	IncentiveCity	Independent	Correlation label/1*	Suitability of city as an incentive city
20	ConventionCity	Independent	Correlation label/1*	Suitability of city as a convention city
21	ExhibitionCity	Independent	Correlation label/1*	Suitability of city as an exhibition city
22	LeisureCity	Independent	Correlation label/1*	Suitability of city as a leisure city

3.2.6 Step 6: Descriptive Statistic Analysis

To achieve the research objectives, some techniques were performed. Descriptive statistics like frequency and percentage were used to describe demographic information of respondents such as gender, age, working province, organization type, business type, years of working experience, position, and visiting experience.

3.2.7 Step 7: Inferential Statistic Analysis

Apart from gaining general information of respondent profile, the questionnaire part one also aims to examine the influence of socio-demographic factors on the level of importance of success factor of logistics and supply chain for MICE city given by all stakeholders.

Based on the descriptive analysis, the respondents were categorized by six socio-demographic variables; gender, age, organization type, business type, position, and working provinces. To analyze socio-demographic variables, independent sample t-test and Analysis of Variance (ANOVA) was conducted. In order to determine whether there were any statistically significant differences between gender groups of respondents regarding the perceived importance of success factors of logistics and supply chain for MICE destination, the t-test were employed.

3.2.8 Step 8: Analytical Hierarchy Process Analysis (AHP)

Analytical Hierarchy Process (one stage) helped measuring competitive advantage of three cities by pairwise comparison. Based on relative measurement approach, the AHP emphasizes on proportional measurement rather than exact measurement. In performing pairwise comparison, a comparison matrix of three cities were created to reflect relative priority in each of the compared cities. The numeric judgement ranking from equal (1) to extreme advantage (9) were transposed to the relative ratio scale in a pairwise comparison reciprocal matrix of judgements.

By normalized column method, a priority vector of each judgement was derived from firstly summing over the row and then averaging over each row. With the normalized matrix, the overall weights of each city (Y_{PHS}, $Y_{KKC,}$ and Y_{KBV}) were obtained. Then, the Consistency Ratio (CR) were verified by calculating and comparing with the Consistency Index (CI). Only consistency ratio (CR) that met requirement of 0.10 or less were employed for next analysis. By applying AHP technique, probability of each MICE destination is indirectly estimated from pairwise comparison by respondents. The independent variables are proxied with the respondent-specific correlation between the factor scores and the MICE City preference. All AHP result were carried out by the Excel software package.

Then, correlation between the overall weights of each Mice city and 20 dependent variables were computed and the output were used for Multinomial Logistic Regression Analysis.

3.2.9 Step 9: Multinomial Logistic Regression Analysis and Marginal Effect Analysis for MICE city Model

Finally, the logistics and supply chain determinants of each MICE city were detected and identified by multinomial logistic regression analysis. First, basic assumption of regression were tested including the multicollinearity. Next, the stepwise regression analytical approach is performed in order to find a set of explanatory variables influencing probability of MICE destination of three provinces. As declared by Hosmer, Lemeshow, and Sturdivant (2013), stepwise selection procedure was a fast and effective tool to minimize a large number of variables, and to fit a number of logistic regression equations simultaneously. The multinomial model is applied in this study at the final stage of data analysis.

To estimate a multinomial model with *K* categories, the K-1 linear equation is estimated. In this research, the expected outcomes have three categories, so two linear equations were estimated. The first is the probability of Krabi (KBV) to be selected as a MICE city opposed to Phitsanulok (PHS). The second is the probability of Khon Kaen (KKC) to be MICE destination compared to Phitsanulok (PHS). After running all pairwise, the negative numbers of coefficients of PHS were likely to fall in reference category. Thus, to identify the parameters, two prediction equations are formed with PHS reference as follows:

The first model for the log odds of comparing Krabi VS. Phitsanulok

$$\log\left(\frac{KBV}{PHS}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_n X_n \quad (1)$$

The second model for the log odds of comparing Khon Kaen VS. Phitsanulok

$$\log\left(\frac{KKC}{PHS}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_n X_n \quad (2)$$

Data were analyzed with 95% confidence interval.

Marginal Effect Analysis for MICE city Model

In general linear regression, the estimated coefficient was directly interpretable as the predicted change in dependent variable (Y) given a unit change in independent variable (X), holding all other variables constant. Differently, the coefficient of logistic regression indicates only whether an explanatory variable result in positive or negative way of a variable outcome guided by the coefficient signs. To

access the strength of causal relationship between explanatory variable on variable outcome in logistic regression, the marginal effect must be measured. The percentage on how much probability of an event (Y) would change when explanatory variable (X) increases or decreases by one unit will be reflected by the marginal effect values.

Leeper (2017) proposed in his study that the Average Marginal Effects (AMEs) was a unified and intuitive way to calculate marginal effect of each variable at every observed value of X and average across the resulting effect estimates.

3.2.10 Step 10: Conclusion

After all, research conclusion of Logistics and supply chain for MICE city were presented.

CHAPTER IV
RESULTS AND DISCUSSION

The content of this chapter is structured of seven main sections. The first section is results of the questionnaire. The second section provides description of respondent characteristics. The third section presents the descriptive analysis of MICE city logistics and supply chain success factors. Next is the analysis of socio-demographic impact on respondent perception toward MICE city success factors. The fifth section illustrates logistic regression analysis of competitive advantages of three MICE cities. The sixth shows the additional suggestion of MICE city by respondents. And the research findings are discussed in the final part of the chapter.

4.1 Results of the Questionnaire Survey

At the end of November 2019, the questionnaire were firstly distributed to MICE stakeholder such as Thailand Convention and Exhibition Bureau (TCEB), the destination management companies, hotels, and academia by handing in and posting mails. With introduction of rationale and objectives of this study, all respondent were requested to answer questionnaire on voluntary basis and respondent information will be kept confidential. Regarding transportation organizations like airports and airlines, official letter of permission was necessary required. Phitsanulok and Krabi were the two cities that data were collected on site in December 2019 and February 2020 respectively. Khon Kaen was the only area of study that all questionnaires were sent and collected by post mail. Some surveys were sent to other cities nearby the areas of study where official MICE cities and major cities are located such as Chiang Mai, Phuket, Chiang Rai, and Songkhla. However, the questionnaires were delayed than expectation due to the pandemic of COVID 19 at that time especially from airport authorities. The follow-ups were made by telephone calls and questionnaires were gradually obtained by the beginning of April 2020. Total of 454 questionnaire were collected, of which 25 were discarded due to bad data of duplication responses. Finally, a total of 429 questionnaire were complete for data analysis.

4.2 Respondent Demographic Profile

The results of the 429 respondents' demographic profile are illustrated in table 4.1.

Table 4.1 Respondent Demographic Profile

Category	Frequency	Percentage
Gender		
Male	196	45.7
Female	233	54.3
Total	**429**	**100**
Age		
21-30	193	45.0
31-40	146	34.0
41-50	63	14.7
51-60	25	5.8
Above 60	2	0.5
Total	**429**	**100**
Working province		
Phitsanulok	56	13.1
Krabi	59	13.8
Khon Kaen	56	13.1
Bangkok	183	42.7
Chiang Mai	4	0.9
Chiang Rai	19	4.4
Trang	12	2.8
Phuket	30	7.0
Songkhla	10	2.3
Total	**429**	**100**
Organization type		
Government/State Enterprise	184	44.3
Private organization	223	51.0
Public organization	22	4.7
Total	**429**	**100**

Table 4.1 Respondent Demographic Profile (continued)

Category	Frequency	Percentage
Business type		
Academia	26	6.1
Airports	96	22.4
Airlines	198	46.2
Other transportation	23	5.4
MICE venue	2	0.5
Travel agency	14	3.3
Hotel & accommodation	27	6.3
Related services	28	6.5
MICE participants	15	3.5
Total	**429**	**100**
Working experience		
1-5 years	231	53.85
6-10 years	92	21.45
11-15 years	34	7.93
16-20 years	31	7.23
21-25 years	23	5.36
26-30 years	12	2.80
Above 30 years	6	1.40
Total	**429**	**100**
Position		
Executive	43	10
Manager	59	13.8
Operations	327	76.2
Total	**429**	**100**
Visiting experience		
Visited	387	90.2
Never	42	9.8
Total	**429**	**100**

Table 4.1 shows that the majority of respondents were female (54.3%) at the range of age between 21-30 years old (45 %). Almost half (42.7%) of the respondents worked in Bangkok metropolitan area while the other half are from the areas of study: Phitsanulok, Krabi and Khon Kaen. Few were from southern and northern parts of Thailand. Half of them worked for private sector (51 %) in airline business (46.2 %). In accordance with their age, about half of samples had 1-5 years of working experience (53.85%) and mostly took position of operations (76.2%). Almost all of them had visited one of these three cities (90.2%).

4.3 Descriptive Analysis of Logistics and Supply Chain Success Factors for MICE City

A seven-point Likert scale ranging from 1 (not important at all) to 7 (extremely important) was employed to measure importance of success factors of logistics and supply chain for MICE city from respondents' perspectives. Table 4.2 illustrates descriptive statistic of total average mean and standard deviation. The eleven success factors of logistics and supply chain for MICE city are international route, airport connectivity, inter-city transportation, intra-city transportation, local support for MICE activities, MICE experience, MICE venue, accommodation, MICE program and extra opportunity, city image, and city safety.

Table 4.2 Total Average Mean of Logistics and Supply Chain Success Factors for MICE City

Success Factors of MICE City	Mean	Std. deviation
Logistics Dimension		
International Route	4.56	0.99
Airport Connectivity	4.83	0.98
Inter-city Transportation	4.54	0.93
Intra-city Transportation	4.76	0.98
Total	**4.67**	**0.14**
Supply Chain Dimension		
Local support for MICE activities	5.03	1.09
MICE Experience	5.06	0.97
MICE Venue	4.94	0.86
Accommodation	5.02	0.84
MICE Program and extra opportunity	4.74	0.92
City Image	4.81	0.88
City Safety	5.12	1
Total	**4.96**	**0.14**

According to table 4.2, the mean importance of success factors of logistics and supply chain for MICE city were almost on the higher end of the Likert scale. Comparing between two dimensions, the result indicated that supply chain of MICE city was perceived more important than logistics dimension with total average means of 4.96 and 4.67 respectively.

Furthermore, among eleven determinants, city safety was perceived to be the most important factor with the maximum average score of 5.12 while the minimum average score was 4.54 of Inter-city transportation. As well, MICE experience (5.06), local support (5.03), and accommodation (5.02) were considerably important respectively. However, MICE venue (4.94), airport connectivity (4.83), city image (4.81), intra-city transportation (4.76), MICE program and extra opportunity (4.74), and international route (4.56) were taken as slightly important respectively.

In regards to the sub-category of each success factor component, the findings were described in table 4.3 as follow.

Table 4.3 Average Descriptive Statistic of Success Factors of Logistics and Supply Chain for MICE City

Success Factors of MICE City	**Minimum**	**Maximum**	**Mean**	**Std. deviation**
Logistics Dimension				
International Route				
- *International nonstop flight*	*0*	*6*	*4.74*	*1.205*
- Flight frequency	0	6	4.36	1.169
- Flight availability for all seasons	0	6	4.49	1.169
- Air fare	0	6	4.66	1.222
Total average mean			**4.56**	**0.99**
Airport Connectivity				
- *Variety of airport transfer to city center (Shuttle bus, public transports, rail services, taxi, car rent)*	*1*	*6*	*5.03*	*1.138*
- Service frequency	0	6	4.74	1.158
- Travel time	1	6	4.67	1.130
- Travel cost	1	6	4.77	1.160
- Intermodal interchange stations to airport	1	6	4.94	1.122
Total average mean			**4.83**	**0.98**

Table 4.3 Average Descriptive Statistic of Success Factors of Logistics and Supply Chain for MICE City (continued)

Success Factors of MICE City	Minimum	Maximum	Mean	Std. deviation
Inter-city Transportation				
- *Flights to major cities*	*2*	*6*	*4.86*	*1.041*
- Flight frequency	1	6	4.54	1.101
- Flight availability for all seasons	0	6	4.60	1.118
- Air fare	1	6	4.79	1.069
- Rail routes to major cities	0	6	4.42	1.270
- Train timetable	0	6	4.30	1.223
- Train fare	0	6	4.31	1.289
- Train travel time	0	6	4.44	1.297
- Road network	1	6	4.82	1.120
Inter-city Transportation				
- Bus timetable	0	6	4.43	1.155
- Bus fare	0	6	4.44	1.212
- Bus travel time	0	6	4.51	1.165
Total average mean			**4.54**	**0.93**
Intra-city Transportation				
- *Public transport to landmark in the city*	*0*	*6*	*4.87*	*1.090*
- Public transport to landmark around city	0	6	4.85	1.073
- Travel time	0	6	4.66	1.163
- Travel cost	0	6	4.68	1.102
Total average mean			**4.76**	**0.98**
Supply Chain Dimension				
Local support for MICE activities				
- *Government support*	*0*	*6*	*5.07*	*1.141*
- Private support	0	6	4.99	1.120
Total average mean			**5.03**	**1.09**
MICE Experience				
- *Professionalism of MICE personnel*	*1*	*6*	*5.10*	*1.035*
- Experience as a host city (regional national international)	1	6	4.98	1.043
- Marketing and Promotion	1	6	5.09	1.050
Total average mean			**5.06**	**0.97**

Table 4.3 Average Descriptive Statistic of Success Factors of Logistics and Supply Chain for MICE City (continued)

Success factors of MICE City	Minimum	Maximum	Mean	Std. deviation
MICE Venue				
- Location and accessibility	0	6	5.07	1.095
- Capacity	0	6	4.78	1.086
- Cost	0	6	4.64	1.126
- Uniqueness (exterior and interior design)	0	6	4.67	1.130
- Infrastructure & communication network	2	6	4.95	1.006
- Facilities & ambiences (audio & visual)	2	6	5.12	1.022
- Service quality of staff	1	6	5.07	1.012
- Food & Beverage (quality & variety)	1	6	4.91	1.012
- *Venue Safety*	*1*	*6*	*5.26*	*1.021*
- Venue environmental policy	1	6	4.93	1.012
Total average mean			**4.94**	**0.86**
Accommodation				
- Hotel availability	0	6	5.00	1.028
- Hotel standard	0	6	5.05	0.992
- Room rate	0	6	4.83	1.084
- Hotel accessibility	0	6	5.01	0.965
- Service quality of hotel staff	2	6	5.06	0.985
- Quality of hotel food and surroundings	2	6	4.92	0.964
- *Hotel safety standard*	*1*	*6*	*5.25*	*1.032*
- Hotel environmental policy	2	6	5.02	0.098
Total average mean			**5.02**	**0.84**
MICE Program and extra opportunity				
- MICE keynote speakers & guests	2	6	4.72	1.025
- Extra opportunity for business (business connection and peers)	1	6	4.71	1.021
- *Extra opportunity for leisure activities*	*1*	*6*	*4.77*	*1.052*
Total average mean			**4.74**	**0.92**
City Image				
- City image and popularity	1	6	5.01	1.025
- Home city of historical and heritage sites	1	6	4.79	1.063
- Home city of natural touristic sites	1	6	4.88	1.051
- Home city of tradition and cultural sites	1	6	4.89	1.060

Table 4.3 Average Descriptive Statistic of Success Factors of Logistics and Supply Chain for MICE City (continued)

Success factors of MICE City	Minimum	Maximum	Mean	Std. deviation
City Image				
- Home city of accredited organizations (university, associations)	0	6	4.58	1.165
- Home city of night life variety	0	6	4.47	1.210
- Home city of popular shopping centers (walking street, malls)	1	6	4.59	1.138
- Local food	1	6	4.74	1.134
- Local hospitality	1	6	4.99	1.038
- *Green city*	*0*	*6*	*5.20*	*1.005*
Total average mean			**4.81**	**0.88**
City Safety				
- *Road safety*	*0*	*6*	*5.18*	*1.150*
- Risks & uncertainty (natural disaster, protest)	0	6	5.00	1.110
- City safety & security standard	1	6	5.17	1.087
- Medical standard & availability of hospitals	1	6	5.12	1.056
Total average mean			**5.12**	**1**

Table 4.3 depicts sub-category of each success factor component that were considered as the most important of each MICE success factor component.

For logistics dimension of MICE city, international accessibility with nonstop flights to MICE destination was considered as the most important factor (4.74) compared to flight frequency, flight availability and airfare. Upon airport arrival, the variety of intermodal transfer services from airport to city was evaluated the most important (5.03) for respondents compared to their service frequency, travel time, travel cost and connectivity with other intermodal stations (bus terminal and rail station). Considering the inter-city accessibility, flights to major cities was presented as the most important (4.86) among three modes of transportation (air, rail and road). Among intra-city transportation attributes, it is not surprising that public transport services to landmarks in the city was ranked the most important (4.87) compared to public transport service to landmarks around city, travel time, and travel cost.

Next is MICE tourism supply chain dimension. All respondents agreed that government support was more important (5.07) than private for local MICE activities. Professionalism of MICE personnel was considered the most crucial (5.10) in comparison with past experiences as a host city, and marketing and promotion. In

terms of venue, it is not surprising that venue safety was rated as the most vital (5.26) among location, capacity, cost, venue uniqueness, facilities and ambience, communication network, staff, Food and Beverages (F&B) and environmental policy. Relating to accommodation, all respondents agreed that safety standard was the most important (5.25) compared with hotel availability, hotel standard, room rate, hotel accessibility, staff, F&B, and environmental policy. For MICE program and extra opportunity, the respondents took extra opportunity for leisure activities as slightly important (4.77) for their consideration. In regard to city image, among all city attributes: home of historical, natural, cultural sites, top university, night life attractions, shopping centers, local food, and hospitality, green city attribute was voted as the most important (5.20). Concerning city safety, road safety was also selected as important (5.18) among risk and uncertainty (disaster or protest), city safety and security standard, and medical standard and hospital availability.

According to the above result, it is concluded that road safety, professionalism of MICE personnel, local government support for MICE activities, hotel safety standard, venue safety, variety of airport transfer to city center, green city, public transport to city landmark, extra opportunity for leisure activities, international nonstop flight, and flights to major city are all important determinants in successfully implementing logistics and supply chain for MICE destination respectively.

4.4 Socio-Demographic Influences on Respondent Perception on MICE City Success Factor

Apart from gaining general information of respondent profile, the questionnaire part one also aims to examine the influence of socio-demographic factors on the level of importance of logistics and supply chain success factor for MICE city given by all stakeholders.

Based on the descriptive analysis, the respondents were categorized by six socio-demographic variables; gender, age, organization type, business type, position, and working provinces. To analyze socio-demographic variables, independent sample t-test and Analysis of Variance (ANOVA) was conducted.

4.4.1 Independent Sample T-test

In order to determine whether there are any statistically significant differences between 196 male and 233 female respondents regarding the perceived importance of logistics and supply chain success factor for MICE city, the t-test are employed. The findings of gender impact is illustrated in table 4.4. Furthermore, the influences of visiting experience are also tested by independent sample t-test and table 4.5 presents mean difference results between 387 visitors and 42 non-visitors of these three provinces.

Table 4.4 Independent Sample T-test Analysis of Gender

Success Factors of MICE City	Mean		T-value	Sig. (2-tailed)
	Male (196)	Female (233)		
Logistics Dimension				
International Route	4.579	4.555	0.287	0.774
Airport Connectivity	4.759	4.892	-1.405	0.161
Inter City Transportation	4.478	4.588	-1.218	0.224
Intra City Transportation	4.720	4.799	-0.826	0.409
Supply Chain Dimension				
Local support	4.961	5.092	-1.214	0.215
MICE Experience	5.047	5.065	-0.194	0.847
MICE Venue	4.875	4.995	-1.445	0.149
Accommodation	4.974	5.053	-0.970	0.333
MICE Program	4.795	4.685	1.239	0.216
City Image	4.813	4.833	-0.226	0.821
City Safety	5.049	5.176	-1.300	0.194

Note: Mean values are based on a 7-point Likert type importance measure scale

As illustrated in table 4.4, all significant values were greater than the critical value (0.05). Thus, no statistically significant gender differences were observed. In other word, male and female have no differences in perceiving importance of eleven MICE destination success variables.

Next, to clarify if the visiting experiences have any influences on respondents' perception on importance of logistics and supply chain success factors for MICE city, the independent sample t-test is applied between visitors and non-visitors.

Table 4.5 Independent Sample T-test Analysis of Visiting Experience

Success Factors of MICE City	Mean		T-value	Sig. (2-tailed)
	Never (42)	Visited (387)		
Logistics Dimension				
International Route	4.321	4.590	-1.259	0.214
Airport Connectivity	4.619	4.854	-1.198	0.237
Inter City Transportation	4.371	4.556	-0.939	0.353
Intra City Transportation	4.708	4.769	-0.336	0.738
Supply Chain Dimension				
Local support	4.821	5.055	-1.329	0.185
MICE Experience	4.833	5.081	-1.377	0.175
MICE Venue	4.750	4.961	-1.194	0.239
Accommodation	4.767	5.044	-1.562	0.125
MICE Program	4.698	4.739	-0.216	0.830
City Image	4.738	4.833	-0.539	0.592
City Safety	4.934	5.138	-1.132	0.263

Note: Mean values are based on a 7-point Likert type importance measure scale

Table 4.5 presents the results that there were no statistically significant differences between visitor and non-visitor groups as well. It implies that respondents who have visited or never visited one of these three destinations have the same perception of MICE city success factors.

4.4.2 A One-Way ANOVA Analysis

A one-way ANOVA was carried out to compare the influences of socio-demographic factors on respondents' decision making for success factors of MICE destinations. The independent variables for analysis of variance tests were age, organization type, business type, position, and working provinces while the dependent variable was the importance scores of MICE city success factors. The results of ANOVA were presented in table 4.6.

Table 4.6 One Way ANOVA Test of Significant Attributes of MICE City

Success Factors of MICE City	Scio-Demographic				
	Age	Organization Type	Business Type	Position	Working Province
Logistics Dimension					
International Route	0.037*	0.267	0.052	0.026*	0.009*
Airport Connectivity	0.078	0.040	0.396	0.667	0.248
Inter City Transportation	0.003*	0.195	0.864	0.990	0.000*
Intra City Transportation	0.101	0.000*	0.358	0.890	0.007*
Supply Chain Dimension					
Local support	*	*	0.184	0.706	0.012*
MICE Experience	*	0.142	0.117	0.012*	0.006*
MICE Venue	0.029*	0.000*	0.236	0.335	0.007*
Accommodation	0.001	0.006*	0.189	0.215	0.088
MICE Program	*	0.271	0.117	0.135	0.003
City Image	0.043*	0.778	0.071	0.365	0.001*
City Safety	0.007*	0.767	0.124	0.466	0.050

**The mean difference is significant at the 0.05 level.*

Base on table 4.6, the findings shows that among all five categorical independent variables, there was only business type that was not statically significant. It means that people from different types of business have the same point of view of MICE destination competitive success factors. On the contrary, age, organization types, position and working province were obviously found statistically significant, implying that these four factors differently influenced decision making of respondents toward importance scores of logistics and supply chain success factors for MICE city.

To find out how differences between groups, the post hoc multiple comparison of Bonferroni and Games-Howell were carried out.

Post hoc multiple comparison analysis

4.4.2.1 Age

A One-way ANOVA analysis was tested to explore the impact of age on respondents' attitude scores toward importance of success factor of MICE destination. Respondents were divided into five groups based on their age; 21-30 years old (young adult), 31-40 years old (middle aged adult), 41-50 years old (old aged adult), 51-60 years old (younger senior), and above 60 years of age (senior). The test results indicated that there were significant differences in the mean scores on the opinion of logistics and supply chain success factors for MICE city across the five age groups. These differences were detected using the Bonneferri Post-hoc tests and the findings were illustrated in table 4.7.

Table 4.7 Post hoc Comparison of Age Effect on Perceived Importance of MICE City Success Factor

Logistics Dimension					
International Route					
Age	21-30	31-40	41-50	51-60	Above 60
21-30	-	-0.263	-0.407*	-0.591**	-0.371
31-40	-	-	-0.143	-0.327	-0.107
41-50	-	-	-	-0.184	0.035
51-60	-	-	-	-	0.220
Above 60	-	-	-	-	-
Inter-city Transportation					
Age	21-30	31-40	41-50	51-60	Above 60
21-30	-	-0.151	-0.379*	-0.290	0.625
31-40	-	-	-0.227	-0.138	-0.776
41-50	-	-	-	0.089	1.004*
51-60	-	-	-	-	0.915*
Above 60	-	-	-	-	-
Intra-city Transportation					
Age	21-30	31-40	41-50	51-60	Above 60
21-30	-	-0.266	-0.314	-0.481*	-0.026
31-40	-	-	-0.047	-0.215	0.239
41-50	-	-	-	-0.167	0.287
51-60	-	-	-	-	0.167
Above 60	-	-	-	-	-
Supply Chain Dimension					
Local support for MICE activities					
Age	21-30	31-40	41-50	51-60	Above 60
21-30	-	-0.272	-0.398	-0.572**	-0.152
31-40	-	-	-0.126	-0.300	-0.119
41-50	-	-	-	-0.173	-0.246
51-60	-	-	-	-	0.420**
Above 60	-	-	-	-	-

Table 4.7 Post hoc Comparison of Age Effect on Perceived Importance of MICE City Success Factor (Continued)

MICE experience					
Age	21-30	31-40	41-50	51-60	Above 60
21-30	-	-0.399**	-0.452**	-0.556**	-1.183**
31-40	-	-	-0.052	-0.156	-0.783**
41-50	-	-	-	-0.103	-0.730**
51-60	-	-	-	-	-0.626**
Above 60	-	-	-	-	-
MICE venue					
Age	21-30	31-40	41-50	51-60	Above 60
21-30	-	-0.238	-0.445**	-0.380*	-0.028
31-40	-	-	-0.207	-0.141	0.210
41-50	-	-	-	0.065	0.416
51-60	-	-	-	-	0.352
Above 60	-	-	-	-	-
Accommodation					
Age	21-30	31-40	41-50	51-60	Above 60
21-30	-	-0.304*	-0.521**	-0.350	-0.498*
31-40	-	-	-0.216	-0.045	-0.193
41-50	-	-	-	0.170	-0.022
51-60	-	-	-	-	-0.147
Above 60	-	-	-	-	-
MICE program and extra opportunities					
Age	21-30	31-40	41-50	51-60	Above 60
21-30	-	-0.157	-0.518**	-0.292	-0.412**
31-40	-	-	-0.361*	-0.135	-0.255**
41-50	-	-	-	0.225	0.105
51-60	-	-	-	-	-0.120
Above 60	-	-	-	-	-
City Image					
Age	21-30	31-40	41-50	51-60	Above 60
21-30	-	-0.040	-0.367*	-0.427	0.020
31-40	-	-	-0.293*	-0.354	0.093
41-50	-	-	-	-0.060	0.387
51-60	-	-	-	-	0.448
Above 60	-	-	-	-	-

Table 4.7 Post hoc Comparison of Age Effect on Perceived Importance of MICE City Success Factor (Continued)

City Safety					
Age	21-30	31-40	41-50	51-60	Above 60
21-30	-	-0.258	-0.565**	-0.363*	0.051
31-40	-	-	-0.307*	-0.105	0.309
41-50	-	-	-	0.202	0.617
51-60	-	-	-	-	0.415
Above 60	-	-	-	-	-

*The mean difference is significant at the 0.05 level.
**The mean difference is significant at the 0.01 level.

Table 4.7 apparently revealed that the mean scores of importance level perceived by young adults (21-30) was significantly different by lowering than those of middle aged adults (31-40), old aged adults (41-50), young seniors (51-60), and seniors (above 60) in all aspects.

Firstly, the young seniors (51-60) and the old aged adults (41-50) perceived that international flights were on average 0.407 and 0.591 scores more important than those of the young adult respectively. It appears that international route services played more important role on respondents with more ages than younger travelers.

Next, the old aged adults (41-50) rated inter-city transportation on average 0.379 more important than those of the young adults (21-30). Likewise, the seniors (above 60) gave more scores on average of 1 and 0.915 points more than those of the old aged adults (41-50) and the younger seniors (51-60) respectively.

Third, the seniors (51-60) think that intra-city transportation was more important at the average of 0.481 than those of the young adults (21-30).

Fourth, while the younger seniors (51-60) voted for importance of local support for MICE activity at the average of 0.572 points than those of the young adults (21-30), the senior (above 60) gave more score on average of 0.420 points than those of the younger seniors (51-60).

Fifth, most of all ages agreed that MICE experience of host city was important except the young adult. The young adult score of importance was on average 0.399, 0.452, 0.556, and 1.183 points less than those of middle aged adult (31-40), old aged adults (41-50), younger seniors (51-60), and senior (Above 60) respectively. The senior was the group that had the average score for MICE experience higher than all others group.

The sixth variable was MICE venue. It was found that the young adults' score of importance was 0.445 and 0.380 points less than the old aged adults (41-50), and younger seniors (51-60).

Accommodation is the seventh variable that the mean difference between groups was found. As previous determinants, the young adults' score of importance was 0.304, 0.521, and 0.498 points less than middle aged adults, the old aged adults (41-50), and younger seniors (51-60).

Next is the MICE program and extra opportunities, the old-aged adult (41-50) and seniors considered this attribute more important than young (21-30) and middle-aged adults (31-40) with higher average score of 0.518 and 0.361. Similarly, the seniors (Above 60) perceived that program and extra opportunities were on average 0.4012 and 0.255 scores more important than those of the young (21-30) and middle-aged adult (31-40).

As for city image, the significant differences were found between the old-aged adult and the young and middle-aged adult by higher average score of 0.367 and 0.293 points respectively.

Finally, supporting the previous attributes, safety was perceived more crucial by older respondents than young adults. The younger seniors considered safety more important than young adults (21-30) with higher average score of 0.368 points while the old aged adults rated safety more scores on average of 0.307 and 0.565 points more than those of the middle aged adults (31-40) and the young adults (21-30) respectively.

At this point, it seems that older respondents tend to value most of the logistics and supply chain attributes of MICE city more important than the younger ones.

4.4.2.2 Organization type

Three groups of organization types: government, private, and private organizations were examined.

Table 4.8 Post hoc Comparison of Organization Type Effect on Perceived Importance of MICE City Success Factor

Supply Chain Dimension: Local support for MICE activities			
Organization type	Government	Private	Public organization
Government	-	0.040	-0.416
Private	-	-	-0.468*
Public organization	-	-	-

*The mean difference is significant at the 0.05 level.

Table 4.8 depicts that there was a statistical mean difference between private and public organization in regard to local support for MICE activities. The figures shows that local support was perceived more important as success factor of MICE destination by public organization than the private sector at the average higher score of 0.0468.

4.4.2.3 Position

Three groups of different position level were tested: executive, manager, and operation and reported in table 4.9.

Table 4.9 Post hoc Comparison of Working Position Effect on Perceived Importance of MICE City Success Factor

Logistics Dimension: International routes				
Position	Executive	Manager	Operation	Others
Executive	-	0.185	0.433*	0.405
Manager	-	-	0.247	0.219
Operation	-	-	-	-0.027
Others	-	-	-	-
Supply Chain Dimension: MICE experience				
Position	Executive	Manager	Operation	Others
Executive	-	0.196	0.455*	0.504
Manager	-	-	0.258	0.307
Operation	-	-	-	0.048
Others	-	-	-	-

*The mean difference is significant at the 0.05 level.

In accordance to table 4.9, the results presents the significant mean difference between group of executives and operations with regard to international routes and MICE experience. Both attributes were considered more important by executives than operations.

4.4.2.4 Working province

The result reported in table 4.10 indicating a mean differences between groups of respondents from various provinces.

Table 4.10 Post hoc Comparison of Working Province Effect on Perceived Importance of MICE City Success Factor

Logistics Dimension									
International routes									
Province	PHS	KBV	KKC	BKK	CNX	CEI	TST	HKT	HDY
PHS	-	-0.112	-0.263	-0.020	-0.089	0.798	-0.193	-0.160	-0.439
KBV	-	-	-0.150	0.092	0.023	0.911*	-0.080	0.273	-0.326
KKC	-	-	-	0.243	0.174	1.062*	0.069	0.424	-0.175
BKK	-	-	-	-	-0.068	0.819*	-0.173	0.181	-0.418
CNX	-	-	-	-	-	0.888	-0.104	0.250	-0.350
CEI	-	-	-	-	-	-	-0.992	-0.638	-1.238*
TST	-	-	-	-	-	-	-	0.354	-0.245
HKT	-	-	-	-	-	-	-	-	-0.600
HDY	-	-	-	-	-	-	-	-	-
Inter-city transportation									
Province	PHS	KBV	KKC	BKK	CNX	CEI	TST	HKT	HDY
PHS	-	0.384	-0.188	-0.018	-0.136	0.872*	0.210	0.050	-0.549
KBV	-	-	-0.573	-0.403	-0.521	0.488	-0.174	-0.334	-0.934**
KKC	-	-	-	0.170	0.052	1.061**	0.399	0.239	-0.360
BKK	-	-	-	-	-0.118	0.891*	0.229	0.069	-0.530*
CNX	-	-	-	-	-	1.009	0.347	0.187	-0.412
CEI	-	-	-	-	-	-	-0.662	-0.822	-1.422**
TST	-	-	-	-	-	-	-	-0.159	-0.759**
HKT	-	-	-	-	-	-	-	-	-0.600
HDY	-	-	-	-	-	-	-	-	-

*The mean difference is significant at the 0.05 level.
**The mean difference is significant at the 0.01 level.

Table 4.10 Post hoc Comparison of Working Province Effect on Perceived Importance of MICE Destination Success Factor (Continued)

Intra-city transportation									
Province	PHS	KBV	KKC	BKK	CNX	CEI	TST	HKT	HDY
PHS	-	0.031	-0.540	-0.166	-0.379	0.515	-0.275	-0.054	-0.579
KBV	-	-	-0.571	-0.197	-0.411	0.483	-0.306	-0.086	-0.611
KKC	-	-	-	0.373	0.160	1.055*	0.264	0.485	-0.039
BKK	-	-	-	-	-0.213	0.681	-0.108	-0.111	-0.413
CNX	-	-	-	-	-	0.894	0.104	0.325	-0.200
CEI	-	-	-	-	-	-	-0.790	-0.569	-1.109*
TST	-	-	-	-	-	-	-	0.220	-0.304
HKT	-	-	-	-	-	-	-	-	-0.525
HDY	-	-	-	-	-	-	-	-	-
Supply Chain Dimension									
Local support									
Province	PHS	KBV	KKC	BKK	CNX	CEI	TST	HKT	HDY
PHS	-	-0.267	-0.482	-0.365	-0.633	0.504	-0.633	-0.292	-0.608
KBV	-	-	-0.214	-0.098	-0.366	0.771	-0.366	-0.024	-0.341
KKC	-	-	-	0.116	-0.151	0.986*	-0.151	0.189	-0.126
BKK	-	-	-	-	-0.268	0.869*	-0.268	0.073	-0.243
CNX	-	-	-	-	-	1.138	0.000	0.341	0.025
CEI	-	-	-	-	-	-	-1.138	-0.796	-1.111
TST	-	-	-	-	-	-	-	0.341	0.025
HKT	-	-	-	-	-	-	-	-	-0.316
HDY	-	-	-	-	-	-	-	-	-

*The mean difference is significant at the 0.05 level.
**The mean difference is significant at the 0.01 level.

Table 4.10 Post hoc Comparison of Working Province Effect on Perceived Importance of MICE Destination Success Factor (Continued)

MICE experience									
Province	PHS	KBV	KKC	BKK	CNX	CEI	TST	HKT	HDY
PHS	-	-0.224	-0.297	-0.202	-0.172	0.735	-0.422	-0.033	-0.322
KBV	-	-	-0.072	0.022	0.052	0.096*	-0.197	0.191	-0.097
KKC	-	-	-	0.095	0.125	1.032*	-0.125	0.263	-0.025
BKK	-	-	-	-	0.029	0.937*	-0.220	0.168	-0.120
CNX	-	-	-	-	-	0.907	-0.025	0.138	-0.150
CEI	-	-	-	-	-	-	1.157*	-0.769	-1.057
TST	-	-	-	-	-	-	-	0.388	0.100
HKT	-	-	-	-	-	-	-	-	-0.288
HDY	-	-	-	-	-	-	-	-	-
MICE venue									
Province	PHS	KBV	KKC	BKK	CNX	CEI	TST	HKT	HDY
PHS	-	0.017	0.212	-0.186	-0.233	0.683	-0.275	-0.062	-0.458
KBV	-	-	-0.229	-0.203	-0.251	0.665	-0.292	-0.079	-0.476
KKC	-	-	-	0.026	-0.021	0.895*	-0.063	0.150	-0.246
BKK	-	-	-	-	-0.047	0.869*	-0.089	0.123	-0.272
CNX	-	-	-	-	-	0.917	-0.041	0.171	-0.225
CEI	-	-	-	-	-	-	0.958*	-0.745	-1.142**
TST	-	-	-	-	-	-	-	0.213	-0.183
HKT	-	-	-	-	-	-	-	-	-0.396
HDY	-	-	-	-	-	-	-	-	-

*The mean difference is significant at the 0.05 level.
**The mean difference is significant at the 0.01 level.

Table 4.10 Post hoc Comparison of Working Province Effect on Perceived Importance of MICE Destination Success Factor (Continued)

MICE program and extra opportunity									
Province	PHS	KBV	KKC	BKK	CNX	CEI	TST	HKT	HDY
PHS	-	0.342	-0.053	-0.117	-0.589	0.621	-0.255	0.210	-0.489
KBV	-	-	-0.396	0.460*	-0.932	0.278	0.598*	-0.132	-0.832*
KKC	-	-	-	-0.063	-0.535	0.674	-0.202	0.264	-0.435
BKK	-	-	-	-	-0.471	0.738	-0.138	0.328	-0.371
CNX	-	-	-	-	-	1.210	0.333	0.800	0.100
CEI	-	-	-	-	-	-	-0.877	-0.410	-1.110*
TST	-	-	-	-	-	-	-	0.466	-0.233
HKT	-	-	-	-	-	-	-	-	-0.700
HDY	-	-	-	-	-	-	-	-	-
City image									
Province	PHS	KBV	KKC	BKK	CNX	CEI	TST	HKT	HDY
PHS	-	0.086	-0.321	-0.054	-0.726	0.352	-0.068	0.103	-0.496
KBV	-	-	-0.408	-0.141	-0.813	0.265	-0.155	0.016	-0.583*
KKC	-	-	-	0.266	-0.405	0.673	0.252	0.424	-0.175
BKK	-	-	-	-	-0.672	0.406	-0.013	0.157	-0.442
CNX	-	-	-	-	-	1.078*	0.658	0.830	0.230
CEI	-	-	-	-	-	-	-0.420	-0.248	-0.848
TST	-	-	-	-	-	-	-	0.171	-0.428
HKT	-	-	-	-	-	-	-	-	-0.600*
HDY	-	-	-	-	-	-	-	-	-

*The mean difference is significant at the 0.05 level.
**The mean difference is significant at the 0.01 level.

As shown in table 4.10, respondents from major MICE cities like Bangkok and especially Khon Kaen have significant difference of opinion regarding logistics and supply chain success factors of MICE city from two cities; Chiang Rai and Hatyai. Respondents from Khon Kaen, Krabi, and Bangkok agreed that logistics component such as international routes, inter-city transportation, intra-city transportation and supply chain aspects of local support, and MICE experience are more important than those from Chiang Rai. Interestingly, respondents from Krabi accepted with these two cities that international routes are important while respondents from Phitsanulok agreed only with respect to inter-city transportation. However, there is also a mean difference between Hatyai respondents and Chiang Rai, Krabi, Bangkok, and Trang for the aspects of international routes and inter-city

transportation. People from Hatyai consider that these two factors are more important than other cities.

4.5 Logistic Regression Analysis of Competitive Advantages of Three MICE Cities

The findings of stepwise regression analysis are illustrated in table 4.11 and 4.12 identifying determinants influencing Krabi and Khon Kaen MICE destinations respectively.

Table 4.11 Stepwise Regression Results of Krabi as MICE City comparing to Phitsanulok

Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	0.096	0.073		1.314	0.190		
R14 Innovation city	0.230	0.067	0.170	3.456	0.001	0.879	1.138
R2 Airport Connect	0.242	0.074	0.154	3.257	0.001	0.947	1.056
R6 MICE experience	0.217	0.084	0.128	2.582	0.010	0.861	1.161

Note: The dependent variable was probability of Krabi to be selected as MICE city comparing to Phitsanulok
R^2= 0.100, Adjusted R^2 = 0.094, F-test = 15.751, Observations = 429

The F-value of 15.751 (p-value = 0.000, less than level of significance of 0.05) was statistically significant, suggesting that there was a statistically relationship between probability of Krabi MICE city and 20 explanatory variables. The three significant factors affecting probability of Krabi MICE city were innovation city, airport linkage and MICE experience. The coefficient signs in table 4.11 indicated direction of the relationship between explanatory variables and dependent variable; positive or negative (Schober, Boer, & Schwarte, 2018). Positive coefficients implied that these three independent variables favored Krabi to be MICE destination over Phitsanulok. The adjusted R^2 value was 0.094 meaning that almost 10 % of the probability of Krabi Mice city was explained by three predictors.

The standardized values implied level of importance of each three factors. The findings revealed that the city should pay attention firstly to city innovation (Beta = 0.170), airport-city connectivity (Beta = 0.154) and MICE experience (Beta = 0.128) respectively.

Regarding Khon Kaen, a set of determinants influencing the probability of Khon Kaen MICE destination are depicted in the table 4.12 below:

Table 4.12 Stepwise Regression Results of Khon Kaen as MICE city comparing to Phitsanulok

Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-0.078	0.083		-0.946	0.345		
R1 Inter Route	0.307	0.093	0.161	3.315	0.001	0.772	1.295
R20 Leisure city	0.281	0.068	0.188	4.128	0.000	0.881	1.135
R19 Exhibit city	0.197	0.067	0.132	2.923	0.004	0.904	1.106
R2 Airport Connect	0.263	0.081	0.155	3.227	0.001	0.792	1.263
R8 Accommodation	0.226	0.086	0.123	2.641	0.009	0.850	1.177

Note: The dependent variable was probability of Khon Kaen to be selected as MICE city comparing to Phitsanulok
R^2= 0.226, Adjusted R^2 = 0.217, F-test = 24.666, Observations = 429

The F-test value of 24.666 represented the statistically significant relationship between dependent and independent variables (p-value = 0.000, less than level of significance of 0.05). This developed model was significant (p = 0.000) and could explain Khon Kaen MICE city 22% variability in the model. Positive coefficients in the model implied that the independent variables favored Khon Kaen over Phitsanulok. Thus, five predictors; international route, leisure city, exhibition city, airport linkage, and accommodation made Khon Kaen more attractive than Phitsanulok.

The standardized values revealed level of importance of each five factors for Khon Kaen. The findings indicated that the city should pay attention firstly to leisure city (Beta = 0.188), international route (Beta = 0.161), airport-city connectivity (Beta = 0.155), exhibition city (Beta = 0.132), and accommodation (Beta = 0.123) respectively.

The Average Marginal Effects (AMEs)

In general linear regression, the estimated coefficient was directly interpretable as the predicted change in dependent variable (Y) given a unit change in independent variable (X), holding all other variables constant. Differently, the coefficient of logistic regression indicates only whether an explanatory variable result in positive or negative way of a variable outcome guided by the coefficient signs. To access the strength of causal relationship between explanatory variable on variable outcome in logistic regression, the marginal effect must be measured. The percentage on how much probability of an event (Y) would change when explanatory variable (X) increases or decreases by one unit will be reflected by the marginal effect values.

Leeper (2017) proposed in his study that the Average Marginal Effects (AMEs) was a unified and intuitive way to calculate marginal effect of each variable at every observed value of X and average across the resulting effect estimates.

Table 4.13 Logit Average Marginal Effects of Significant Attributes of Three MICE cities

No.	Significant Attributes	Logit average marginal effects		
		KBV	KKC	PHS
1	R1 International Route	-0.048	0.064	-0.015
2	R2 Airport Connectivity	0.016	0.017	-0.033
3	R6 MICE Experience	0.052	-0.034	-0.017
4	R8 Accommodation	-0.036	0.047	-0.011
5	R14 Innovation City	0.055	-0.036	-0.018
6	R19 Exhibition City	-0.031	0.041	-0.010
7	R20 Leisure City	-0.044	0.059	-0.015

Findings based upon the estimated table 4.11 and 4.12, it can be generated that seven variables were significant as illustrated in Table 4.13. They can indicate and differentiate the three selected MICE cities. They are: 1) international route, 2) airport linkage, 3) MICE experience, 4) accommodation, 5) innovation city, 6) exhibition city, and 7) leisure city.

4.6 Additional Suggestion of MICE Destination

Part four of the questionnaire is an open answer for additional suggestion of MICE destination. Hereafter are some suggestion from various perspectives.

Table 4.14 Numbers of Open-ended question response

Responses	Frequency	Percentage
Open-ended question responses	38	8.86
Non Open-ended question responses	391	91.14
Total	429	100

Table 4.14 illustrated that few respondents (8.86%) providing additional suggestion for MICE city development. By using summative content analysis, the numbers of key words were quantified, categorized, and presented in table 4.15.

Table 4.15 Additional suggestion for MICE city

Success Factors of MICE City	**Frequency**
Logistics Dimension	**19**
- Transport system/Accessibility	12
- Public transport	5
- Intermodal transport	1
- Airline quality	1

Table 4.15 Additional suggestion for MICE city (continued)

Success Factors of MICE City	Frequency
Supply Chain Dimension	**27**
City Image	9
MICE Experience	7
- Professionalism of MICE personnel	5
- Experience as a host city	1
- Marketing and Promotion	1
City Safety	4
Local support for MICE activities	3
MICE Venue	2
- Capacity	1
- Safety	1
Extra opportunity for leisure activities	2

According to table 4.15, the result illustrated that supply chain of MICE city was more concerned than logistics (27 over 19). The most frequently mentioned theme on MICE city supply chain was city image, followed by city safety, local support for MICE activities, MICE venue, and extra opportunity for leisure activities respectively.

Regarding MICE city logistics, the majority of respondents were aware most on accessibility to MICE city, followed by public transport, and intermodal transport system. Airline service quality was also suggested to be considered for MICE city development.

4.7 Discussion

4.7.1 Discussion of Logistics and Supply Chain Success Factor of MICE City

Based on mean response, the study explored the success factor of logistics and supply chain for MICE city. The research found out that among eleven variables, the first four determinants perceived important were related to MICE city supply chain dimension which were city safety, MICE experience, local support for MICE activities, and accommodation. Conversely, the findings were not in accordance with the report of an Economist Intelligence Unit. Acknowledging the current business travel trend, the unit conducted a survey, sponsored by All Nippon Airways, measuring opinions of 1,500 business travelers worldwide toward various Asia-Pacific cities with respect to their environment for business and leisure (Bleisure). The 2019 Bleisure Barometer reported that street safety and business venues quality were vital aspects, however, logistics component like ease of transportation was

garnered the top score indicator for a successful business trip, especially for Asian travelers who voted it more important than others respondents elsewhere. In contrast, European executives would rather emphasize on lodging quality and digital connectivity level (The Economist Intelligent Unit, 2019). In regard to leisure demand, older business travelers were more likely to go out for dinner than their younger counterparts. This may be perhaps a reflection of the relative cost-sensitivity of this cohort. The report also revealed that the respondents; especially women, admitted that the best cities for leisure was the best for business too. Most of them agreed that a business trip incorporated with leisure activities were more productive. Furthermore, it was interestingly to find that company senior position might enjoy "bleisure" than their junior counterparts.

The discussion on eleven categories of MICE city logistics and supply chain for success factors are described in detail below:

4.7.1.1 International accessibility

In regard to logistics dimension, international accessibility to MICE city was considered more important than flight frequency, flight availability and airfare. This findings supports the report of "A strategy for developing Jordan's MICE sector" supported by United State Agency International Development (USAID) indicating that to enhance competitiveness of Jordan as MICE destination, sufficient and inexpensive air transport were required particularly new international routes as well as an increase of national carrier capacity (USAID, n.d.). In accordance to a study of Songkhla MICE city, the study concluded that a strong potential of Songkhla in serving Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT) business tourism was the city's strategical location connecting ASEAN countries with various mode of transports (land, water and air transportation). Apart from rail route directly to Malaysia and national highways to surrounding provinces, Hat Yai International Airport (HDY) also fosters international markets from China, Singapore, Kuala Lumpur as well as domestic passengers from major cities of Thailand like Bangkok, Chiang Mai, Phuket, Rayong, and Udon Thani (Rattanapan, Bunlueng, & Phongchiewboon, 2017). Moreover, in terms of sustainability, flying nonstop like direct international routes could decrease carbon emission and greenhouse effect gas as each passenger was responsible for a carbon footprint of 285 grams per kilometer per flight (Anavin & Kovathanakul, 2018).

4.7.1.2 Airport-city connectivity

In what concerns airport-city connectivity, variety of airport transfer services (shuttle bus, public transport, rail, taxi) from airport to city was ranked the most important among service frequency, travel time, cost and airport connectivity to intermodal interchange stations. Similar findings were revealed by Pasha and Hickman (2016) on their interesting review and assessment of airport ground accessibility. According to their study, apart from private cars, taxi was also another essential mode for airport access. The others transport services such as buses, train,

limousine services, airport service bus, and rental car must be taken into account to capture all passenger segments. Based on the findings of Castillo-Manzano (2010), the review noticed that compared to passengers flying with network carriers, LCCs passengers were more likely to drive a rental car and fewer used public transport to the airport. Moreover, the study presented that comparing between large and smaller local airports, the intensive use of private cars were higher at the smaller airports than major airports where regular public transport facilities were sufficiently provided. Unfortunately, the private cars caused congestion on local road network, traffic stress and pollution from vehicles emission. In addition, drive and park cars at the airport were found releasing less carbon dioxide volume than kiss'-n-fly (drop-off/pick-up) trip. That is the reason why many world major airports prioritize public transport for airport ground access and egress. With respect to the areas of study, Phitsanulok, Khon Kaen and Krabi International airports are regional and low cost carrier-dominated airports. As a result, to decrease these economic, social and environmental impacts, policy maker and airport operators should carefully layout the ground transport plan (GTP) in order to cope with air passenger market segmentation, and passenger growth by balancing with airport constraints. Moreover, a study of Hao, Zhang, Ji, Wu, and Liu (2020) demonstrated interesting findings and suggestion that accessibility from airport to tourist destinations of the city should be prioritized as significant as development of airport itself. As time costs was very crucial for satisfaction and decision making of visitors for a choice of tourist destination as well as the willingness to revisit. Thus, in order to reach the sustainable development of tourism sector of MICE city destination, a holistic view of logistics development is needed.

4.7.1.3 Intercity accessibility

Considering the intercity accessibility, flights to major cities was presented as the most important among three modes of transportation (air, rail and road). Conversely to intrastate passengers who were more likely to travel by cars, interstate and international visitors strongly preferred air travel (Prideaux, 2000). For decades, air travel has become preferable choice for travelers for long haul trip due to its speed. However, emergence of Low Cost Carriers (LCCs) has dramatically intensified competition between legacy and low cost airlines. With cost advantage, market share of low cost carriers have continuously been increased in leisure market. As previous literatures referred, leisure passengers were more price sensitive than business passengers who had a higher value of time than non-business travelers (Dresner, 2006). Surprisingly, the typical perceived notion of differences between these market segments were faded. As indicated by Owen since 1992, business traveler has changed significantly their travel behavior; they were more cost conscious. The cost saving trends was increasingly observed. By trading down to have travel companion, self-employed person as well as middle and junior executives were likely to shift from traditional travel pattern to more budgeted such as economy class air travel and lower top star hotels (Owen, 1992). A number of studies has been conducted and proved on this change especially air passengers' travel behaviors

impact toward Full Service Carriers (FSCs) and Low Cost Carriers (LCCs). This dramatic effect also happened in European airline industry. Mason (2000) demonstrated that company size affected travelers' selection. LCCs were more likely to attract short haul business travelers working for smaller companies than larger companies. Cost advantage over network carriers draw many attention not only from leisure but also business travelers whose corporate involvement played more role in business travel decision making.

Huse and Evangelho (2007) investigated business traveler heterogeneity, findings that there were two types of business travelers including luxury-loving and no-frills. The study also noted that business travelers who had previous experience with LCCs had favorably positive reaction to LCCs products. Confirmed by a study of Neal and Kassens-Noor (2011), after the U.S. economic recession in 2007, there was a declining proportion of business travelers in passenger volume of legacy airlines. On the contrary, an increasing proportion of passengers in low cost airlines like Southwest was observed. Also in Europe, an increasing proportion of short and medium haul flights taken by business travelers was reflected in the study of Martínez-Garcia, Ferrer-Rosell, and Coenders (2012). The study demonstrated that although business and leisure travelers differed in term of characteristic of trip such as length of stay and activities undertaken, they had one similarity. They both voted price as the most valued attribute among flight characteristics; proximity of airport to final destination, length of flight, flight quality and less waiting time. As a result, Phitsanulok, Khon Kaen, and Krabi airports should be a node to facilitate passengers to return to their origins or arrive their destinations with fast, convenient, and safe journey. The airline network with major domestic cities are more attractive to passengers in this aspect. Since the airports of this study are low cost dominant airports, good cooperation with their airline key customers are crucial for route network and airport development. As demonstrated by Huderek-Glapska and Nowak (2016), regional civil airports of Poland were benefited from LCCs services like those in the rest of the world after market deregulation. The study showed that among significant determinants of airport operation and development, relationship with LCCs was identified as the factor of greatest importance. Furthermore, the findings revealed that by maintaining good cooperating with LCCs, airports directly benefit from an increase numbers of passengers that subsequently related to a growth in non-aeronautical revenues. Moderate benefices of social and political aspects were also indicated. LCCs improve regional accessibility and connectivity and satisfy both local authorities and communities. The study concluded that good relationship between airports and LCCs could be achieved through direct contact, cooperation, and mutual trust.

In line with Halpern and Graham (2016), their study based on a survey of 124 airports worldwide additionally found that collaboration with stakeholders was significant positive effect of airport performance. The term "stakeholders" also included regional economic development agencies; tourism authorities, Chamber of Commerce, and Destination Management Organizations (DMOs). Through this

integrated collaboration, route development activity and airport performance were developed for more holistic regional objectives to attract inbound tourism, inward investment and influence business location to the region. In addition, the findings revealed that larger and private airports were significantly more active than smaller and public airports. It was noted that differences in airport ownership and location were not found significant. Airport performance was proved to be directly influenced by route development activity. Moreover, two factors directly affecting airport route development performance were market growth and airport constraints. While market growth provided positive effect, legal conditions, infrastructure, limited operating conditions or capacity negatively influenced airport performance.

However, intercity connectivity can also be enhanced by others modes of transport. Interestingly, a growing body of literature on public transport development related to tourism particularly rail transport has become of interest by many scholars in various countries. Li, Yang, and Cui (2019) investigated how the High Speed Rail (HSR) affected domestic and international tourist arrivals in China. The results showed that for international tourists, the connection of HSR with core cities help diffusing travelers to the local markets in hinterlands after their arrival at the major city airports. However, the HSR diffusion effects were weak in driving domestic tourist market. For intercity synergies, the HSR may leverage passenger flow. Nonetheless, intermodal competition between air and rail transport would eventually raise some competition issues and challenges.

4.7.1.4 Intra-city transportation

In regard to intra-city transportation, public transport to landmark in the city is the most important factor for successful MICE destination compared to public transport to landmarks surrounding city, travel time, and travel cost. The findings support Le-Klähn, Roosen, Gerike, and Hall (2015) research. They examined mode choice of day-trippers in Munich, Germany and revealed that Public Transport (PT) was the dominant mode for travelers staying in the city. On the contrary, other modes or a combination of modes were used by visitors traveling beyond the city areas. In addition, education level and travel partner also influenced visitor decision making for mode choice selection. Based on example of Munich, better educated visitors and group travelers were more likely to travel by public transport. The paper also suggested that integrated works between tourism and transport planners were needed. As stated by Le-Klähn and Hall (2015), travel behavior in using public transport were different in rural and urban destinations. With more accessible and reliable, city public transport were more attractive than rural destinations. Thus, city destination are more advantage to develop sustainable mobility like PT than remote destinations. However, socio-demographic profile and trip characteristics are also important influencers of PT users. Transportation policy makers and tourism planners should consider how to improve PT services, encourage a modal shift by visitors as well as satisfy traveler needs. A good connectivity and extensive network of public transport definitely attract visitors.

As presented by Kantawateera, Naipinit, Promsaka Na Sakolnakorn, and Kroeksakul (2015), Khon Kaen encountered the problem of insufficient public transportation; unavailability of airport transfer, no rail service for city travel, long distance of bus station from downtown area, and inefficient public transport network linked to tourist attraction. The study suggested guidelines for development of tourist transportation in Khon Kaen by establishing an electrical bus line connecting all stations of transport modes (airport, railway station, bus station). Local sky train should be developed to enhance visitors exploring destinations around Khon Kaen. Taxi meters should be standardized by fare and services. For inter-city connectivity, road network should be improved as well as more railway routes connected to nearby provinces like Kalasin, Maha Sarakham, and Roi et should be developed since many tourist attractions are located in these provinces. Safety system was also recommended in the guideline requirement.

Accordingly, railway transportation system like subway and Light Rail Transit (LRT) was recognized as efficient alternative to enhance attractiveness and competitiveness of city public transport. The rationales are their lower cost compared to rapid rail, higher quality of services than conventional buses, higher capacity (Cervero, 1984), and reduction of traffic congestion (Bhattacharjee & Goetz, 2012). Sato, Takasugi, Handa, Sugita, and Isogai (2019) took Kanazawa historical tourist city in Japan as a case study to estimate change in population distribution affected by LRT. The researchers found that there was an increase in population along LRT. Confirmed by Wang (2016), the analysis of LRT development in Kaohsiung, tourist city in southern-western of Taiwan, reflected the benefits of LRT not only on population distribution change but also increasing property values and business activities along the lines and stations, pollution reduction, and city image promotion.

4.7.1.5 Local support for MICE activities

In respect to MICE city supply chain, the result of this study was in accordance to the study of Reshetnikova (2017). The research findings revealed that the main difficulties to enhance business tourism were absence of joint effort, weak partnership between the public and private, and inadequate policies. The research recommended that the Convention and Visitors Bureau was necessary for promoting cooperation between stakeholders and stimulate local, regional, and national authorities to concrete appropriate policy and formulate marketing strategy for specific geographical areas.

Lim and Zhu (2018b) found out that to achieve sustainable business tourism growth of Singapore, collaboration in urban and tourism planning were required in close relationship with the private sector. The public-private partnership (PPT) are key factor. The research findings of Buathong and Lai (2017) were in line with this findings. They indicated that sustainability if Thailand MICE industry could be attained by retaining good public relations, creation of understanding among community members, and essential support from government.

Similarly, local support from both public and private sectors were necessary for developing Pattaya as a MICE city. Government agencies took important roles in encouraging policy, staff, financial contribution as well as supporting MICE marketing activities and ensuring trust among organizers (Bunnag & Ponanake, 2018).

4.7.1.6 MICE Venue

In accordance to Whitfield, Dioko, Webber, and Zhang (2014), safety and security was secondly ranked among the three most important MICE venue attributes evaluated by exhibition delegates attending MICE event in greater China (Mainland China, Hong Kong, Macau, and Taiwan). The others two attributes were atmosphere and environment and the standard of service within the exhibition facility.

Regarding Thailand, safety and security were also mentioned in the guideline for sustainable competitive advantage of Pattaya MICE city. The research findings recommended that safety and security policy should be implemented by all stakeholders in venue areas such as risk and dangers management, and fire prevention (Bunnag & Ponanake, 2018).

4.7.1.7 MICE experience

The importance of MICE personnel was addressed since the last two decades by Bauer, Lambert, and Hutchison (2001). The study mentioned that if the MICE sector would successfully expand its business, the lack of trained MICE professionals must be solved. At that time, educational institutions in Australia and Asia were acknowledge as key players in the continuous professional development of the industry.

As well, Whitfield et al. (2014) revealed that destination reputation in hosting exhibitions was one of the five highest ratings in term of destination performance attributes apart from destination attractiveness, destination safety and security, suitability and standard of local infrastructure, and safety and security within the exhibition facility.

Others MICE destinations also have different problem in term of MICE personnel. For instance, Macao's MICE industry faced the severe problem of local skilled labor shortage especially for MICE small and medium enterprises (SMEs) so the city had to rely on international workforce and part-time employees. Moreover, there was a high turnover rate since the skilled staff can apply their competency in many hospitality industries. Interestingly, academic knowledge from educational institutes seems not enough for professionalism as they mostly offer foundation and generic knowledge skill but not the talent needed for MICE industry. On-the-job training was recommended in this study to provide staff opportunity to encounter the reality and problem solving (Sandy Sou & McCartney, 2015).

The result was also aligned with the findings of Kaewnuch (2018) showing that professionalism of tour operation staff played vital role in success of incentive travel business. The three core competencies that staff should be enhanced with academic knowledge on incentive tourism management, problem-solving skills, and having self-control characteristic. The study suggested that MICE personnel could develop their competency through basic courses on tourism, MICE management, foreign languages, and meditation.

Sattachatmongkol, Jaroenwisan, and Siriwong (2019) recommended the guideline to develop MICE personnel for operational staff by enhancing three core competency. The desirable attributes that MICE entrepreneurs expected most from staff were knowledge in MICE industry and basic knowledge of management, team working skill, and service mind.

4.7.1.8 Accommodation

Regarding the hotel safety, this research result is in line with the study of Hilliard and Baloglu (2008) on the safety and security as part of the hotel servicescape for meeting planners. The findings concluded that visible safety features and documentation and staff training positively affected meeting planners' site selection choice and willingness to pay.

Further research conducted by Enz (2009) revealed that geographic location, price segment, size, and age of hotels caused different levels of risk perceived by customers. Surprisingly, perceived risk were found higher in airport and urban areas than those in small towns or resort locations. Furthermore, the survey showed that luxury hotels received highest safety and security scores than lower price hotels. As well, it was noted that larger hotel (more than 50 rooms) and newer hotels (less than 8 years old) were reported with higher scores on the security index. These may be a reflection of how hotels significantly perceive risks and willing to invest to protect their guests and employees.

The result is also consistent with the findings of Whitfield et al. (2014) indicating that the safety and security within the accommodation was also voted equally important by Chinese exhibition attendees.

4.7.1.9 MICE Program

This findings is not consistent with the research of Kim, Lee, and Kim (2012). Although they stated that conventions offering more extra leisure opportunities such as local attraction, shopping, and recreational activities attracted more attendees and or their spouses, their findings conversely revealed that extra convention opportunity (amusing attractions, shopping, restaurants, cultural attraction) were not found to be motivation for both first-time and repeat attendees. On the contrary, their findings showed that repeated attendees were more motivated by social networking (social networking development and expansion and peer recognition) than the first-time visitors whereas professional education (informative

program, knowledge exchange, professional trend) were found positively concerned the first-time attendees than repeated group. This implies that repeated attendees who stay longer in professional field prefer social networking than knowledge and idea sharing while the first-time attendees looks for career learning than networking.

4.7.1.10 City Image

Destination image or city image was found to be crucial for destination choice selection (Yilmaz, Yılmaz, İçigen, Ekin, & Utku, 2009). They found out six significant attributes affecting image of Anlanta city in Turkey. The six factors were environmental conditions (unspoiled and undamaged environment, no traffic problem, cleanliness, sufficient infrastructure quality, safe place for shopping), destination advantages (friendly people, local cuisine, clean and beautiful beaches, reasonable prices), activities (satisfied adventurous activities, sufficient night life and entertainment, enough information office), attractiveness (historical and cultural attractiveness, natural attractiveness), facilities (enough shopping facility, round trip opportunity), and good climate. Among all these, environmental conditions, attractiveness, and climate more significantly provided positive image of Anlanta.

In case of Pattaya MICE city of Thailand, a study of Bunnag and Ponanake (2018) suggested that environment management system like ISO 20121 should necessarily be implemented in order to build new image of Pattaya MICE city as well as to minimize cost and waste management.

The result is also consistent with previous findings of Pratiwi Arcana and Wiweka (2018) who taking Nusa Dua Resort in Bali as a case study of MICE sustainable management destination. The findings showed that key informants admitted that sustainability issue sometimes partially involved in their decision making. They also appreciated host destination that aware of environmental issue and contribute to local community. This created positive image for the host destination.

As well in Jordan, positive attributes that influenced Aqaba city to be a MICE destination perceived by MICE tourism stakeholders were a good sewage system, good traffic management, and clean tourist attractions (Jawabreh, Al-Badarneh, & Al-Mkhadmeh, 2019).

4.7.1.11 City safety

The safety and security within the destination was also presented as one of important attributes attracting convention and exhibition attendance (Whitfield et al., 2014). Regarding road safety, this appears to be in line with a study of Choocharukul and Sriroongvikrai (2017) investigating tourist's perception and awareness for road safety in Thailand. They found out that perception and awareness of foreign tourists differed from regions (North America, Europe, Africa, Asia, and Australia). Moreover, the findings illustrated that tourists perceived that public transportation was safe. However, they felt unsafe for road using as a pedestrian or driver. Regarding the traffic signs, tourists were comprehensive at some point.

Interestingly, the study found that Asian visitors were the top segment who miscomprehended local road signs.

Iamtrakul and Chayphong (2019) studied impact of road safety of foreign tourists using motorcycle in Chiang Mai. The research stated that road safety issue of Thailand was reflected as a main obstacle for national tourism. The findings revealed that lack of safety awareness, driver license, knowledge of law and safety regulation were main causes of severe accidents for foreign tourists. In order to improve travel safety, cooperation among stakeholders were required. In accordance to the study of Khongthong and Meesawatdikul (2019), they suggested that tourism safety management of Hua-Hin, Prachuap Khiri Khan should be implemented through strong collaboration among all stakeholders from public and private sectors, local and tourists through law enforcement, law and regulation compliance, safety awareness, and risk monitoring and prevention.

4.7.2 Discussion of Socio-Demographic Effect on Perceived Importance of MICE Success Factors

ANOVA indicated that there are differences in term of respondent age, organization type, position, and working province. However, gender, and business type were not statistically significant.

4.7.2.1 Age

From the findings of this research, it is clear that older adult and senior considered many attributes more important than younger adults.

With respect to logistics aspects (international route, inter-city transportation, intra-city transportation), there are many studies on travel behavior of age differences. With age differences, travel interests, preferences, and individual choices also differs (Lee & Bowes, 2016). Boschmann and Brady (2013) exhibited that travelers made fewer and shorter trips when ages increased. International route are thus not perceived important for older senior (above 60). On the contrary, 41-50 and 51-60 consider international travel more vital than younger; this may be interpreted that due to their professional status and advancement of their career, these two age groups are time sensitive travelers. Moreover, international route may encourage them to save not only time spent but also prevent them from wasting energy for transit. Anderson and Langmeyer (1982) demonstrated interesting result that plane trips were popular in the passengers over 50 year old group. Similarly, inter and intra city, the findings also reported that although both younger senior (under 50) and older (over 50) were likely to take pleasure trip and relaxation, the older (over 50) preferred to visit historical sites. So the intra-city transportation was perceived more important for them.

For MICE supply chain aspects (local support for MICE activities, MICE experience, MICE venue, accommodation, MICE program), this could be interpreted that seniors have higher level of expectation in all aspects due to accumulation of lifetime experiences than youngers.

Concerning city image, this result is consistent with a study of Beales and Tulloch (2013) indicating that travelers between 50 and 85 preferred to visit familiar destinations but less adventure while unretired travelers enjoyed novel destinations. According to Baloglu (2001), familiarity is positively related to city image; the more people are attached to a place, the positive image they have for a place. It can therefore be interpreted that image and popularity of destination were perceived more crucial for senior than younger travelers.

In term of city safety, the findings of this study support the research of Esichaikul (2012). The total of 430 European seniors visiting Thailand perceived that safety of destination was the most crucial determinant for their travel requirements as well as their satisfaction, followed by accommodation location and natural attractions. However, the in-depth interview uncovered that safety standard for transportation was mentioned among major problems of services for senior tourists. Some scholars stated that the older the tourists grow, the more important the safety is perceived (Norman, Daniels, McGuire, & Norman, 2001). Similarly, Jang and Wu (2006) indicated that cleanliness and safety were the most important pull factors motivating Taiwanese seniors to travel. It should be noted that some researches included safety as one of city image dimensions (Merrilees, Miller, & Herington, 2009).

This study suggests that future service for older travelers must recognize this fast growing trend and reorient their effort to improve travel experience for this segment. The findings shed the light for MICE segment of senior participants in order to pay attention to their travel needs and preferences.

4.7.2.2 Organization Type

Cooperation between private sector and government was identified as barrier of MICE industry of Thailand for decades (Bauer et al., 2001). Likewise in other countries, a study of Reshetnikova (2017) pointed out that lack of adequate policies, a joint effort, and particularly partnership between local government and private sectors were the main obstacles in developing MICE business. In line with Singapore case, in order to host international meetings with world class MICE facilities, public-private collaboration was vitally required (Lim & Zhu, 2018a). The study on strategy formation for Thailand MICE business pointed out that unclear cooperation policy between government and private sector was threat of MICE business of Thailand (Boonpienpon & Wongwiwattana, 2019). The result of this study show that public organization are perceived local support for MICE activities more important than private sector. One possible explanation for this observed effect is that respondents of public organization in this research were Thailand Convention

and Exhibition Bureau (TCEB) employees who have overview of MICE industry of the country and currently encounter these difficulties and challenges.

4.7.2.3 Working Position

The results shows that international route and MICE experience play important roles on executives than operation employees. The findings obtained are consistent with the fact that MICE participants are mostly middle to upper class of managerial level. The companies support their delegates to attend MICE activities (Bauer et al., 2001). Moreover, Radojevic, Stanisic, Stanic, and Davidson (2018) explained that business travelers with high professional status were more health aware. Comparing between costs incurred and productivities and outcomes in participating MICE activities, it is not surprising that travel time and energy saving by international routes and professional experience in MICE business of the host city are thus more crucial for executives than operational staff.

4.7.2.4 Working Provinces

In regard to working province variable, the results depicted mean differences for eight attributes: international routes, inter-city transportation, intra-city transportation, local support, MICE experience, MICE venue, MICE program and extra opportunity, and city image.

First, it is noticeable that logistics component factors are perceived more important for major and MICE cities like Krabi, Bangkok, and especially Khon Kaen. Among all routes, international route is considered the most important for Khon Kaen. This can be explained that among all significant cities (Krabi, Bangkok, Chiang Mai), Khon Kaen is the only province without international traffic and the respondents may realize that it is essential for MICE destination. Next, regarding inter-city transportation, Phitsanulok, Khon Kaen, and Bangkok realize their importance because they are center of trade, education, and all facilities. Due to their strong advantage of location, they are reachable within 1-2 hours from neighboring provinces. Inter-city transportations are thus vital for these provinces. And finally, it is not surprising that MICE cities like Khon Kaen and Bangkok perceived MICE attributes more important than Chiang Rai due to their longer experiences in this industry.

4.7.3 Discussion of Logistic Regression Analysis on Competitive Advantages of Three MICE Destination: Phitsanulok, Krabi, and Khon Kaen

Based upon findings in table 4.13, it can be generated that seven variables were significant which were 1) international route, 2) airport linkage, 3) MICE experience, 4) accommodation, 5) innovation city, 6) exhibition city, and 7) leisure city.

Firstly, regarding international route, the marginal effects of three cities shows that Khon Kaen is the city to where international routes should essentially be operated compared to Krabi and Phitsanulok. The marginal effect of 0.064 indicates that if there is an increase in international route by one unit, Khon Kaen will be more likely to be selected as MICE destination at 6.4 %. This research findings were consistent and in agreement with the study of Saenjai and Mongkolsrisawat (2015). From perspectives of key informants of Khon Kaen local MICE industry stakeholders, the study showed that although the city was the centre of the Northeast region and offered many multimodal transportations, the air travel was still limited with few domestic flights. Khon Kaen had hosted important international events. The city was also set as "MICE Destination of Asia". The international routes at least from neighbouring countries were considerably crucial to achieve the city goal. Łódź city in Poland was taken as example for better illustration. As a trade fair city with long history since 1925, MICE tourism development in Łódź was limited by low international flight availability. To improve competitiveness of Lodz on European MICE market, the urgent contribution was to establish and robust international flight connection (Sylla, Chruściński, Drużyńska, Płóciennik, & Osak, 2015). Contradiction to Krabi and Phitsanulok, the marginal effects of both cities are in negative signs, guiding that any increase in international route will decrease probability of both cities as MICE city. These may be resulting from the fact that Krabi airport is currently international airport welcoming flights from many major cities worldwide as well as domestic flights. The airport offers participants more choices of direct flights while traveling to Khon Kaen needs a transit at Bangkok first. Regarding Phitsanulok, the city was positioned as regional MICE city supporting domestic market, so international connections might not be proper alternative at this time.

Secondly, as for airport linkage, the two cities that should improve their airport-city connectivity were Khon Kaen and Krabi. The marginal effect of Khon Kaen was 0.017, suggesting that the probability that Khon Kaen will be more likely to be MICE city will increase 1.7% if there is an increase in airport linkage an unit. As well as Krabi, the city will be more attractive and be selected as MICE site with 1.6% of probability if the airport-city connection is increased one unit. For Khon Kaen, this research findings was in accordance to the study of Tunming et al. (2019) pointing out that intermodal connectivity between Khon Kaen airport and bus station was ineffective. As for Krabi, the distance between Krabi International Airport (KBV) and the city centre is approximately 15 kilometres. In addition, most of tourist sites, hotel and accommodations are not located in town but mostly lie along coastline further far from the airport like Ao Nang (40 kilometres from airport) or sometimes on islands such as Phi Phi and Lanta. Distance seems to be main obstacle for visitors. Besides, the city landscape with mountainous geography inevitably causes some difficulty for travellers who drive. The insufficient and ineffective airport connectivity then resulted in not only time cost but also budget and accidents. As mentioned by Organization for Economic Co-operation and Development (OECD, 2016) proper accessibility was elemental for overall competitiveness of destinations. Suitable infrastructure and

adequate means of transportation and efficient operation were fundamentally required to facilitate tourist mobility with convenience, capacity, reliability, and connectivity. Seamless transport could enhance the quality of visitor satisfaction and experience.

The third significant attribute is MICE experience. The marginal effect indicates that among these three cities, Krabi should develop the city MICE experience in order to be MICE site because a unit increase in MICE experience development will increase 5.2% of probability of the city to be selected. Human resource capability had been identified as one of barriers of Thailand MICE industry. The problem of Thailand was insufficient number of professional and skilled staff at the management level. They further explained that the different level of MICE products and services between Bangkok and local service providers were identified as major problem. Bangkok staff were more capable with better understanding of MICE business, job responsibility, service delivery standards as well as language proficiency (Sangpikul & Kim, 2009). The empirical evidence can also be found from the study of Boonchom and Pattanapairoj (2018) who demonstrated that the most crucial determinants affecting the readiness of Khon Kaen in preparation to be MICE City was professionalism of MICE personnel.

Mongkhonvanit and Chattiwong (2017) proposed a guideline for human resource development for Thailand MICE industry. The findings revealed that extra and specific training courses should have been provided to hotel personnel in order to enhance their competency and skill. The training modules should emphasize on language proficiency, MICE business trend, and service mind. Krabi can take Khon Kaen as example for this aspect.

The next significant factor is accommodation. The 0.047 marginal effect of Khon Kaen on accommodation criteria implicates that if accommodation of Khon Kaen is augmented in one unit, Khon Kaen is more likely to be MICE city at 4.7% of probability. Accommodation was also listed as key category of site selection by Crouch and Ritchie since 1998 as well as severally confirmed by many scholars (Smagina, 2017; Sylla et al., 2015). In particular, the availability of on-site and off-site accommodation was reported by Crouch and Louviere (2004) as one of the most critical factors for the convention site selection in Australian domestic convention industry. Khon Kaen has various choices of hotel and accommodation including five star on-site accommodation such as Avani Khon Kaen Hotel & Convention Centre and Centara Khon Kaen Hotel & Convention Centre. The hotel business should extensively be boosted with intensive marketing effort on promoting city accommodation.

With regard to Innovation city, there is only a marginal effect of Krabi that is positive, implicating that this attribute would favour Krabi to be more attractive for site selection. With 0.055 marginal effect value, Krabi will increase probability to be selected at 5.5% if the innovative image of city is raised in one unit. In fact, Krabi has hosted top international conferences on innovation and technology for a period of time, for example, the International Conference on Innovation, Management and

Industrial Engineering in 2015 welcoming up to 100 delegates, the International Conference on Advanced Technology Innovation (ICATI) in 2018 and the 2019 International Conference on Science, Innovation and Management (ICSIM). Tracing back to 2010, the innovation platform of ASEAN had took placed here in form of "Krabi Initiative". This initiative was formally served as ASEAN blueprint for Science, Technology and Innovation endorsed by 10 member countries. The initiative emphasized on eight thematic areas: 1) ASEAN innovation for global market 2) Digital economy 3) Green technology 4) Food security 5) Energy security 6) Water resource management 7) Biodiversity for health and wealth (Irawan, 2017b). As a result, it is not surprising why Krabi was selected as host of innovation and technology events. Hence, if the city would like to differentiate itself from other MICE cities, Krabi should foster this market segment and position the city as the Innovation city destination of Thailand.

The sixth one is exhibition city attribute. The positive sign of the marginal effect reflects a positive influence of this variable on Khon Kaen while the signs of the other two cities are oppositely presented. It means that among these three, Khon Kaen is more likely to be designated as exhibition city with the probability of 4.1% if there is one unit growth of this attribute. Considering MICE city profile of Khon Kaen, it is found out that Khon Kaen is not far from its way to achieve this goal. The Khon Kaen International Convention and Exhibition Centre (KICE), established in December 2017, is a new versatile MICE venue with mega structure enabling 7,510 square metres for indoor and 4,680 square metres for outdoor. The main exhibition hall are designed for hosting all types of events ranging from heavy industrial exhibition to live music performance. In accordance with the national and provincial strategies, this research findings reaffirmed that Khon Kaen came on the right track and should continuously enhance its potential and competitive advantage for being "World Class of Convention and Exhibition" destination.

The final significance for regional MICE city development is leisure city attribute. The marginal effect sign demonstrates that the city that will take the most advantages of this attribute is Khon Kaen. With marginal effect of 0.059, this implies that Khon Kaen will be more likely to be determined as MICE destination with the probability of 5.9% if the city can improve one unit increase of this attribute. As for leisure aspect, previous studies on Khon Kaen MICE city had similarly reflected that the city was not successful in terms of tourism. Siribowonphitak, Pathumporn, and Esichaikul (2018) indicated that despite of variety of tourism resources, Khon Kaen attracted small number of tourists. In accordance to Chuaysook and Kovathanakul (2015), tourist sites of Khon Kaen were unattractive, far and with limit of accessibility. Worsen by city traffic density, travel time, inconvenience and expensiveness of public transport, it was difficult for MICE participants to arrange their visits before and after (pre and post) MICE programs. As Crouch and Ritchie stated since 1998, accessibility and transportation facilities including air and local transportation were key factors for destination competitiveness. From the customers' perspective, the deficient management of leisure and recreational facilities were found

negative influences for destination selection (Ortigueira & Gomez-Selemeneva, 2011). For Khon Kaen, the MICE city image was increasingly admitted in both national and international market considering from the past prosperous events the city had hosted. The city may take this opportunity to convert involuntary first time visitors or non-vacation visitors who came for business purposed or as "MICE participants" to return to the city as voluntary visitors for vacation purposes. Kerr, Lazarevski, and Dolnicar (2009) agreed with a number of scholars that business and leisure travellers were actually the same person who spend extra time in business destination for relax or recreation. The new term "Bleisure" has commonly used to define this kind of travellers and it is noted that the bleisure trend was expanding (Lichy & McLeay, 2017). Another point is the fact that the rebranding image of Khon Kaen as "Leisure city" would eventually benefit the city to capture attention of new market, a group of "I" (incentive). Resulting from that, Khon Kaen would enable to fully serve as regional MICE city by covering all segment of MICE industry.

In respect to Phitsanulok, all negative coefficient sign of marginal effects of Phitsanulok implied that the city is less advantage than the others two cities in terms of international route, airport-city connectivity, MICE experience, accommodation, innovation city, Exhibition city, and leisure city. Nonetheless, Phitsanulok can take lessons learnt from Khon Kaen MICE city and Krabi MICE cluster city to improve city logistics and supply chain.

For logistics dimension, air services at Phitsanulok are currently provided only Bangkok – Phitsanulok route. Although the city is advantage for its location connecting North, Northeast and central part of Thailand, travel behavior of today travelers prefers air services than others modes of transports due to its speed and affordable price of air ticket. Thus, facilities concern air accessibility such as international route, and airport-city connectivity are crucial for Phitsanuloke to take into account for logistics development as a MICE city. Fortunately, there are ongoing efforts in upgrading Phitsanulok airport to international airport according to Phitsanulok MICE city Plan (2018-2021). This is in line with the study of Vongmanee and Rattanawong (2005) indicated that Phitsanulok airport was planned to be international airport for logistics hub of lower northern part of country. In spite of government supports according to the national logistics development policy, Phitsanulok has also encountered some limitation on railway system and intermodal transport due to their inefficiency operation and connection. Fortunately, Phitsanulok Mass Transit System project has already been assigned to Mass Rapid Transit Authority of Thailand (MRTA) to implement according to strategic development of transport infrastructure of Thailand 2015-2022. The first phase (Phitsanulok University to Central Plaza) would link major city landmarks such as shopping center, historical sites, and city bus station (Mass Rapid Transit Authority of Thailand, 2018).

In regard to MICE supply chain, innovation city, MICE experience, Leisure city, accommodation, and exhibition city are all attributes suggesting Phitsanulok to improve in order to increase possibility to be MICE city. Based on the city resources,

Phitsanulok has potential to further grow in MICE tourism market. According to Tinakhat et al. (2020), top five motivation that pulled travelers to revisit Phitsanulok were Phra Buddha Chinnrat (the most beautiful Buddha image), variety of natural attractions, spa services, food quality, and reasonable price of tourism products. Regarding accommodation, the finding of Tinakhat (2015) presented that five factors that satisfied foreign visitors most were hotel room rate, location, facilities, services, and image respectively. For innovation city attribute, as a home of Naresuan University as well as Pibusongkram Rajabhat University, the city might take benefit in hosting academic MICE activities on innovation and technology. As well, these universities are main entities to enhance more MICE experience of the city by provide MICE professional staff through university programs and short courses.

In conclusion, the probability of each city to be designated as MICE city are measured by the marginal effect value while the positive and negative signs were represented as indicators implying which variable was benefit or obstacle in developing MICE city attractiveness.

CHAPTER V
CONCLUSION

This chapter is constituted of three sections. The first section is the conclusion of this research followed by the recommendation as the second section. The last section contains the content of limitation and future research.

5.1 Conclusion

This study aims firstly to explore success factors of logistics and supply chain of MICE city in Thailand. Secondly, this research was to examine socio-demographic attributes influencing decision making of importance of MICE city success factors. And the last objective is to develop measurement tool to investigate competitive advantage determinants of MICE city in Thailand.

The questionnaire survey was designed as a data collection tool and constructed with four main parts in order to answer each objective of this research. The first part of the questionnaire was demographic profile of respondents. The second part of questionnaire was to examine success factors of logistics and supply chain of MICE city. Based on literature review of major scholars on logistics, supply chain, MICE tourism and related filed, eleven attributes were identified and classified into two groups of logistics and supply chain dimensions. Attributes concerning multimodal transportation were expanded for more clarification and understanding. Those eleven categories were international route, airport connectivity, inter-city transportation, intra-city transportation, local support for MICE activities, MICE experience, MICE venue and facilities, accommodation, MICE program and extra opportunity, city image, and city safety. The seven point Likert scale was conducted to measure level of importance of success factors of MICE city logistics and supply chain. Then, competitive advantage of three cities of study areas were compared by Analytical Hierarchy Process (AHP) technique in the third part of the questionnaire to answer the third objective. Eventually, the final part was the open-ended question for additional suggestions of MICE destination. After consulting five industry experts and academics and received some recommendation, a pilot study of forty was conducted. Eventually, the final version of survey were distributed both on-site and postal mail to the aviation and the Meetings industry stakeholder, and a total of 429 complete questionnaires were accumulated.

The data were analyzed by a range of methods including descriptive statistics (frequency, percentage, mean, and standard deviation), inferential statistics (independent sample T-test and One-Way Analysis of Variance), Analytical Hierarchy Process (AHP), and multivariate analysis (Logistic Regression Analysis).

The first research objective on logistics and supply chain success factors for MICE city was declared. The findings revealed that in order to successfully implement a city to be MICE destination, city safety was the most concern. In further detail, it was found out that road safety was the most dangerous perceived risk of all kind (city safety and security, medical standard and availability of hospitality, and natural risk and uncertainty). In terms of the meetings industry, MICE experience of the host city was the most important among all MICE variables (local support for MICE activities, MICE venue, and MICE program). With respect to logistics aspects, airport-city connectivity was ranked as the most important determinant among all transport attributes, followed by intra-city transportation, international route, and inter-city transportation.

For the second research objective, the findings revealed that there were socio-demographic attributes affecting stakeholders perception toward importance of MICE city success factors. Those significant variables were age, organization types, working position, and working province. The senior travelers perceived most of MICE attributes more important than the younger travelers. Among all eleven MICE destination attributes, there is only one determinant (airport-city connectivity) that there was no mean different between groups. As well, public organization think that local support for MICE activity was more necessary for the success of MICE destination than private sectors. Differences in working position also affect opinion of people toward international route and MICE experience; executive officers considered these two variables more crucial than operational officers. Likewise, people from different provinces have different perspectives regarding MICE city attributes. Interestingly, people from major MICE cities such as Bangkok and Khon Kaen and tourist city like Krabi considered most of variables more vital than small city like Chiang Rai. It is interesting to note that Hat Yai (Songkhla province) seems to have higher awareness of MICE destination. It is not surprising as this city has potential and is preparing to be promoted as MICE city.

Finally, the findings of the last objective in measuring competitiveness of Phitsanulok, Krabi, and Khon Kaen disclosed that 1) international route 2) airport connectivity 3) MICE experience 4) accommodation 5) innovation city 6) exhibition city 7) leisure city were statistically significant determinants. However, each attribute differently provides effect to each province.

5.2 Recommendations

The findings obtained in this study are significant for advancing the existing theoretical approaches and provide some managerial guideline for development of MICE city logistics and supply chain.

In terms of successfully develop MICE city, safety plays a major role especially road safety. The road safety is currently critical issue of Thailand not only in tourism environment but also in everyday life. Road Traffic Accidents (RTAs)

increasingly causes injuries and fatality each year. Collaboration among all key agencies are necessarily required such as transportation, tourism, and government sectors. Besides, MICE city should have experiences in hosting MICE activities. Experience in this sense means professionalism of staff in MICE industry and international language proficiency. In this regard, MICE Capabilities Development Department of Thailand Convention & Exhibition Bureau (TCEB) is a national key player in broadening MICE knowledge, supporting domestic and international trade alliance, raising capabilities through knowledge, content sharing networking promotion and marketing activities, and strengthening service and operational quality to international standards. However, local support from government entities are needed as well as other city component such as accommodation, MICE venue, airport connectivity, city image, intra-city transportation, MICE program, international route, and inter-city transportation.

In regard to socio-demographic characteristics, ages, organization types, working position, and provinces are influencers for importance perception of participants. Destination management organizers and related stakeholders should pay attention to specific requirements and preferences of each market segments.

With respect to logistics and supply chain for MICE city development, there is no universal strategy applicable for all cities. Each city has its own core competency and facing different limitation. Taking Phitsanulok as baseline, Krabi should improve airport-city connectivity in terms of public transports services to passenger final destinations, enhance MICE experiences as a host city by strengthening professionalism of local staff, and promote the city position as “Innovation city” in MICE market in order to be selected as a MICE destination.

Contrarily, Khon Kaen has to improve effective airport-city connectivity with intermodal stations like bus and rail. In addition, international route is definitely required for the city to fulfill some market gaps and achieve the city goal as “MICE destination of Asia”. Moreover, the city need to make their properties more competitive by rebranding itself more to city of leisure, strengthening and promoting hotel industry, and leveraging the city as a leader of exhibition market.

For Phitsanulok, the city should take a lesson learnt from both Khon Kaen and Krabi in developing logistics and supply chain for MICE city.

Regarding logistics and supply chain development for MICE city, air transport is considered as a crucial factor for logistics aspect. This implies that in this era, air transport plays significant role in mobilizing people. Among all mode of inter-city transport, traveling by air is more popular than road and rail. Domestic flights to major cities are necessary as well as nonstop flights to international landmarks for some cities. As a node connecting people, airport should provide variety of transfers; shuttle bus, public transports, rail service, taxi, and car rent to city centres. Moreover, there should also be a feeder to link airport to others intermodal stations like bus terminal, light rail transit, and central rail station. All transport services should be

offered with reasonable price, regular frequencies, and appropriate travel time. For supply chain development, a destination that needs to be MICE city has to be well supplied with MICE experience and accommodation.

City Positioning as Innovation city, Exhibition city, and Leisure city might enhance the city to differentiate themselves in MICE tourism market.

5.3 Limitation and Further Study

Regarding research limitation, responses from some group such as MICE venue organization and destination management organizations are not sufficient due to Corona Virus Disease (COVID19) pandemic. At lease twenty respondents of each group is recommended.

In respect to further study, firstly, since logistics and supply chain for MICE city is rather state of the art in Thailand. This study is presented as preliminary research for identifying supply chain members and structuring supply chain network for MICE city. Many themes on logistics and supply chain on MICE city have still been left for future researches particularly relationship and collaboration that have been frequently referred to as vital element of supply chain management.

Secondly, the majority of previous and current researches provide general analysis of socio-demographic of individual participants in terms of gender, age, education, income and nationality. Interestingly, studies focusing on MICE tourism behavior of organization types' need and preferences are rarely presented.

Lastly, the measurement tool of logistics and supply chain for MICE city can be usefully applied to conduct comparison study between designated MICE city and potential city or between potential cities for further MICE city development. Some additional attributes like health safety might be included for new normal era.

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APPENDIX A
QUESTIONNAIRE

แบบสอบถามเรื่องปัจจัยความสำเร็จต่อการเป็นเมืองไมซ์และการเปรียบเทียบศักยภาพเมือง

แบบสอบถามชุดนี้เป็นส่วนหนึ่งของการศึกษาในหัวข้อ “แนวทางการพัฒนาท่าอากาศยานภูมิภาคอย่างยั่งยืนในประเทศไทย” หลักสูตรวิทยาศาสตรดุษฎีบัณฑิต (การจัดการด้านโลจิสติกส์) จุฬาลงกรณ์มหาวิทยาลัย มีวัตถุประสงค์เพื่อศึกษาปัจจัยที่มีผลต่อความสำเร็จของการเป็นเมืองไมซ์ (MICE City) อันหมายถึงเมืองเพื่อการจัดประชุมองค์กร (Meeting) การท่องเที่ยวเพื่อเป็นรางวัล (Incentive) งานประชุมวิชาการ (Conference) และงานแสดงสินค้าหรือนิทรรศการ (Exhibition) ทั้งนี้ ผู้วิจัยได้ทบทวนแนวคิดทฤษฎีและวรรณกรรมที่เกี่ยวข้อง เช่น เกณฑ์การประเมินเมืองเพื่อจัดงานไมซ์ มาตรฐานสถานที่จัดงานประเทศไทย (Thailand MICE Venue Standard : AMVS) และอาเซียน (ASEAN MICE Venue Standard : AMVS) โดยแบบสอบถามประกอบไปด้วย 4 ส่วน คือ

ส่วนที่ 1 ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม

ส่วนที่ 2 ปัจจัยความสำเร็จของการเป็นเมืองไมซ์ ประกอบไปด้วยปัจจัย 11 ด้าน ได้แก่ เส้นทางบินระหว่างประเทศ การเดินทางเข้าออกสนามบินและสิ่งอำนวยความสะดวก การเดินทางเชื่อมต่อระหว่างจังหวัด การเดินทางภายในเมือง การสนับสนุนจากองค์กรท้องถิ่นเกี่ยวกับกิจกรรมไมซ์ ประสบการณ์การเป็นเมืองเจ้าภาพ สถานที่จัดงานและสิ่งอำนวยความสะดวก ที่พักและสิ่งอำนวยความสะดวก โปรแกรมงานและโอกาสพิเศษที่ได้รับ ภาพลักษณ์ของเมือง และความปลอดภัยของเมือง

ส่วนที่ 3 การเปรียบเทียบศักยภาพเมืองไมซ์

ส่วนที่ 4 ข้อเสนอแนะเพิ่มเติมในการเป็นเมืองไมซ์

หากท่านมีข้อสอบถามหรือต้องการข้อมูลเพิ่มเติม กรุณาติดต่อ:
น.ส. จันทร์เมธา ศรีรักษา
เบอร์โทรศัพท์มือถือ: 081-373 2698 Email: chanmatha.ku@gmail.com
ที่อยู่: คณะศิลปศาสตร์และวิทยาศาสตร์ (อบน.) มหาวิทยาลัยเกษตรศาสตร์ วิทยาเขตกำแพงแสน อ.กำแพงแสน จ. นครปฐม 73140

ส่วนที่ 1 ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม

คำชี้แจง: กรุณาทำเครื่องหมาย ✓ลงใน ( ) หรือตอบคำถามลงในช่องว่างที่จัดให้ตามความเป็นจริง

1. เพศ: ( ) ชาย ( ) หญิง

2. อายุ ( ) 21 – 30 ปี ( ) 31 – 40 ปี ( ) 41 – 50 ปี
( ) 51 –60 ปี ( ) 60 ปีขึ้นไป

3. โปรดระบุชื่อหน่วยงานของท่าน .....

4. ประเภทองค์กร:
( ) ราชการ/รัฐวิสาหกิจ
( ) เอกชน
( ) องค์การมหาชน

5. ประเภทธุรกิจและความเกี่ยวข้อง:
( ) สถาบันการศึกษา
( ) ธุรกิจขนส่ง
( ) ธุรกิจให้บริการสถานที่จัดประชุมและแสดงสินค้า
( ) ธุรกิจผู้จัดงานแสดงสินค้าหรือนิทรรศการ
( ) ธุรกิจให้บริการท่องเที่ยว (รับจัดงานประชุมองค์กรและท่องเที่ยวเพื่อเป็นรางวัล)
( ) ธุรกิจโรงแรมและที่พัก
( ) ธุรกิจบริการเกี่ยวข้องอื่น ๆ (โปรดระบุ) .....
( ) ผู้เข้าร่วมกิจกรรมไมซ์ (การประชุมองค์กร การท่องเที่ยวเพื่อเป็นรางวัล งานประชุมวิชาการ งานแสดงสินค้าหรือนิทรรศการ)

6. ประสบการณ์การทำงาน: ..... ปี

7. ระดับตำแหน่งงาน: ( ) ระดับผู้บริหาร
( ) ระดับผู้จัดการ
( ) ระดับผู้ปฏิบัติการ
( ) อื่นๆ (โปรดระบุ) .....

หมายเหตุ: สำหรับอาจารย์และนักวิชาการ หากท่านเป็นอาจารย์ กรุณาเลือก “ระดับผู้ปฏิบัติการ”
หากท่านเป็นอาจารย์ที่ดำรงตำแหน่งทางวิชาการ กรุณาเลือก “ระดับผู้จัดการ”
หากท่านเป็นอาจารย์ที่ดำรงตำแหน่งบริหาร กรุณาเลือก “ระดับผู้บริหาร”

8. ท่านเคยเดินทางไปจังหวัดใดจังหวัดหนึ่งใน 3 จังหวัดต่อไปนี้หรือไม่ (พิษณุโลก ขอนแก่น กระบี่)
( ) เคย ( ) ไม่เคย

9. วันที่ตอบแบบสอบถาม (วัน/เดือน/ปี) .....

ส่วนที่ 2 ปัจจัยความสำเร็จของการเป็นเมืองไมซ์

คำชี้แจง: กรุณาทำเครื่องหมาย ✓ ลงในช่องว่างตามความคิดเห็นของท่านที่มีต่อความสำคัญของปัจจัยความสำเร็จแต่ละข้อของการเป็นเมืองไมซ์ โดยระดับความสำคัญของปัจจัยมีความหมายดังนี้

ไม่มีความสำคัญเลย	0	1	2	3	4	5	6	มีความสำคัญมากที่สุด

ปัจจัยความสำเร็จของการเป็นเมืองไมซ์	ระดับความสำคัญ						
	0	1	2	3	4	5	6
1. เส้นทางบินระหว่างประเทศ (หากมีเส้นทางระหว่างประเทศให้บริการ ท่านคิดว่าปัจจัยต่อไปนี้มีความสำคัญในระดับใด)							
1.1 เส้นทางบินตรงระหว่างประเทศจากเมืองใหญ่สู่เมืองไมซ์							
1.2 ความถี่ของเที่ยวบิน							
1.3 ความสม่ำเสมอของเที่ยวบินตลอดทั้งปี (ในช่วงฤดูท่องเที่ยวและนอกฤดู)							
1.4 อัตราค่าโดยสารสายการบิน							
2. การเดินทางเข้าออกสนามบินและสิ่งอำนวยความสะดวก							
2.1 ความหลากหลายของระบบขนส่งในการเดินทางจากท่าอากาศยานเข้าเมือง (รถเวียนท่าอากาศยาน รถสาธารณะ ระบบราง แท็กซี่ รถเช่า)							
2.2 ความถี่ในการให้บริการของระบบขนส่ง							
2.3 ระยะเวลาในการเดินทาง							
2.4 ค่าใช้จ่ายในการเดินทาง							
2.5 การเชื่อมต่อระหว่างท่าอากาศยานและสถานีขนส่งอื่นๆ							
3. การเดินทางเชื่อมต่อระหว่างจังหวัด (ทางอากาศ รถไฟ รถยนต์)							
3.1 เส้นทางบินเชื่อมต่อจังหวัดสำคัญของประเทศ							
3.2 ความถี่ของเที่ยวบิน							
3.3 ความสม่ำเสมอของเที่ยวบินตลอดทั้งปี (ในช่วงฤดูท่องเที่ยวและนอกฤดู)							
3.4 อัตราค่าโดยสารสายการบิน							
3.5 เส้นทางรถไฟเชื่อมต่อจังหวัดสำคัญของประเทศ							
3.6 ความถี่ของตารางเวลาเดินรถไฟ							
3.7 อัตราค่าโดยสารรถไฟ							
3.8 ระยะเวลาในการเดินทางด้วยรถไฟ							
3.9 เส้นทางเข้าสู่เมืองไมซ์ (ความหลากหลายของเส้นทางและสภาพถนน)							
3.10 ความถี่ของตารางเวลาเดินรถทัวร์							
3.11 อัตราค่าโดยสารรถทัวร์							
3.12 ระยะเวลาในการเดินทางด้วยรถทัวร์							

ปัจจัยความสำเร็จของการเป็นเมืองไมซ์	ระดับความสำคัญ						
	0	1	2	3	4	5	6
4. การเดินทางภายในเมือง							
4.1 บริการขนส่งสาธารณะไปยังสถานที่สำคัญในเมือง							
4.2 บริการขนส่งสาธารณะไปยังสถานที่ท่องเที่ยวสำคัญรอบเมือง							
4.3 อัตราค่าโดยสาร							
4.4 ระยะเวลาในการเดินทาง							
5. การสนับสนุนจากองค์กรท้องถิ่นเกี่ยวกับกิจกรรมไมซ์							
5.1 การสนับสนุนจากองค์กรภาครัฐ							
5.2 การสนับสนุนจากองค์กรเอกชน							
6. ประสบการณ์การเป็นเมืองเจ้าภาพ							
6.1 ความเป็นมืออาชีพของบุคลากรที่จัดงาน (การติดต่อประสานงาน/ทักษะภาษา)							
6.2 ประสบการณ์การจัดงานของเมือง (ระดับท้องถิ่น ประเทศ และนานาชาติ)							
6.3 การส่งเสริมการตลาดและประชาสัมพันธ์							
7. สถานที่จัดงานและสิ่งอำนวยความสะดวก							
7.1 ที่ตั้งของสถานที่จัดงานและความสะดวกในการเดินทาง							
7.2 ขนาดของพื้นที่จัดงาน							
7.3 ค่าใช้จ่ายด้านสถานที่							
7.4 เอกลักษณ์ของสถานที่จัดงาน (การตกแต่งภายนอกและภายใน)							
7.5 สาธารณูปโภคและโครงข่ายสื่อสาร							
7.6 สิ่งอำนวยความสะดวกและบรรยากาศ (ระบบแสงเสียง ห้องน้ำ ที่จอดรถ)							
7.7 คุณภาพและการบริการของพนักงาน							
7.8 อาหารและเครื่องดื่ม (คุณภาพและความหลากหลาย)							
7.9 ความปลอดภัยของสถานที่จัดงาน							
7.10 นโยบายด้านสิ่งแวดล้อมของสถานที่จัดงาน							
8. ที่พักและสิ่งอำนวยความสะดวก							
8.1 จำนวนที่พักที่มีให้บริการ							
8.2 มาตรฐานของที่พัก							
8.3 อัตราค่าห้องพัก							
8.4 ความสะดวกในการเดินทางเข้าออกที่พัก							
8.5 คุณภาพการบริการของพนักงาน							
8.6 คุณภาพของอาหาร ณ ที่พักและบริเวณใกล้เคียง							

ปัจจัยความสำเร็จของการเป็นเมืองไมซ์	ระดับความสำคัญ						
	0	1	2	3	4	5	6
8. ที่พักและสิ่งอำนวยความสะดวก							
8.7 มาตรฐานการรักษาความปลอดภัยของที่พัก							
8.8 นโยบายด้านการรักษาสิ่งแวดล้อมของที่พัก							
9. โปรแกรมงานและโอกาสพิเศษที่ได้รับ							
9.1 บุคคลสำคัญของงาน (องค์ปาฐก วิทยากรรับเชิญ)							
9.2 โอกาสทางธุรกิจพิเศษอื่นๆ (การขยายเครือข่ายธุรกิจ การพบผู้คนในวงการ)							
9.3 โอกาสในการได้พักผ่อน (การท่องเที่ยว)							
10. ภาพลักษณ์ของเมือง							
10.1 ภาพลักษณ์และความมีชื่อเสียงของเมือง							
10.2 การเป็นเมืองที่มีแหล่งประวัติศาสตร์และมรดกวัฒนธรรม							
10.3 การเป็นเมืองที่มีแหล่งท่องเที่ยวทางธรรมชาติ							
10.4 การเป็นเมืองที่มีความโดดเด่นทางวัฒนธรรมประเพณี							
10.5 การเป็นเมืองที่ตั้งขององค์กรที่มีชื่อเสียง (มหาวิทยาลัย สมาคม)							
10.6 การเป็นเมืองที่มีความหลากหลายของสถานที่ท่องเที่ยวยามค่ำคืน							
10.7 การเป็นเมืองที่มีแหล่งช้อปปิ้งที่มีชื่อเสียง (ถนนคนเดิน ห้างสรรพสินค้า)							
10.8 อาหารท้องถิ่น							
10.9 ความเป็นมิตรและอัธยาศัยไมตรีของคนท้องถิ่น							
10.10 การเป็นเมืองน่าอยู่ สะอาด สวยงาม (Green City)							
11. ความปลอดภัยของเมือง							
11.1 ความปลอดภัยบนท้องถนน							
11.2 ความเสี่ยงและความไม่แน่นอนในพื้นที่ (ภัยทางธรรมชาติ/การประท้วง)							
11.3 มาตรฐานการรักษาความสงบและความปลอดภัยในพื้นที่							
11.4 มาตรฐานด้านการแพทย์และจำนวนโรงพยาบาลในพื้นที่							

ส่วนที่ 3 การเปรียบเทียบศักยภาพเมืองไมซ์

แบบสอบถามส่วนที่ 3 มีวัตถุประสงค์เพื่อสำรวจความคิดเห็นของท่านต่อศักยภาพของจังหวัดพิษณุโลก ขอนแก่น และกระบี่ในการเป็นเมืองไมซ์ โดยให้ท่านพิจารณาเปรียบเทียบจากปัจจัยแห่งความสำเร็จในการเป็นเมืองไมซ์ทั้ง 20 ด้านด้วยวิธีกระบวนการลำดับชั้นเชิงวิเคราะห์ (Analytical Hierarchy Process: AHP) โดยมีระดับศักยภาพ 9 ระดับแสดงด้วยค่าตัวเลขตั้งแต่ 1-9 ดังรายละเอียดต่อไปนี้

ระดับศักยภาพ	ความหมาย	คำอธิบาย
9	มีศักยภาพมากที่สุด	เมืองหนึ่งมีศักยภาพเหนือเมืองคู่เปรียบอย่างมากที่สุด
7	มีศักยภาพมากกว่ามาก	เมืองหนึ่งมีศักยภาพเหนือเมืองคู่เปรียบอย่างเห็นได้ชัด
5	มีศักยภาพมากกว่าค่อนข้างมาก	เมืองหนึ่งมีศักยภาพเหนือเมืองคู่เปรียบมาก
3	มีศักยภาพมากกว่าเล็กน้อย	เมืองหนึ่งมีศักยภาพเหนือเมืองคู่เปรียบเล็กน้อย
1	มีศักยภาพเท่ากัน	เมืองทั้งสองเมืองมีศักยภาพเท่ากัน
2, 4, 6, 8	ค่ากลาง	ผลการพิจารณาก้ำกึ่งและไม่สามารถอธิบายด้วยคำพูดที่เหมาะสมได้

วิธีตอบแบบสอบถาม

แบบสอบถามในแต่ละแถวเป็นการเปรียบเทียบศักยภาพจังหวัด 2 จังหวัด (ช่องซ้ายสุดและขวาสุด) ในการเป็นเมืองไมซ์ตามปัจจัยประเมินในแต่ละด้าน ให้ท่านพิจารณาว่าระหว่างจังหวัด 2 จังหวัดคู่เปรียบนั้น จังหวัดใดมีศักยภาพในด้านต่างๆ มากกว่ากัน โดยให้ท่านวงกลมตัวเลขระดับศักยภาพตามดุลยพินิจของท่าน

เส้นทางบินระหว่างประเทศ																			
1	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น

<u>ตัวอย่างที่ 1</u> ให้ท่านพิจารณาว่าระหว่าง “พิษณุโลก” และ “ขอนแก่น” จังหวัดใดมีศักยภาพด้านเส้นทางบินระหว่างประเทศมากกว่ากัน โดยให้วงกลมตัวเลขระดับศักยภาพตามดุลยพินิจของท่าน

เส้นทางบินระหว่างประเทศ																			
1	พิษณุโลก	9	8	7	6	5	4	3	2	(1)	2	3	4	5	6	7	8	9	ขอนแก่น

หากท่านวงกลมหมายเลข 1 หมายความว่า ท่านพิจารณาว่า “พิษณุโลก” และ “ขอนแก่น” มีศักยภาพด้านเส้นทางบินระหว่างประเทศเท่ากัน

ตัวอย่างที่ 2

เส้นทางบินระหว่างประเทศ																			
1	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น

หากท่านวงกลมหมายเลข 9 (ด้านขอนแก่น) หมายความว่า ท่านพิจารณาว่า “ขอนแก่น” มีศักยภาพด้านเส้นทางบินระหว่างประเทศมากกว่า “พิษณุโลก” อย่างมากที่สุด

ตัวอย่างที่ 3

เส้นทางบินระหว่างประเทศ																			
1	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น

หากท่านวงกลมหมายเลข 3 (ด้านพิษณุโลก) หมายความว่า ท่านพิจารณาว่า “พิษณุโลก” มีศักยภาพด้านเส้นทางบินระหว่างประเทศมากกว่า “ขอนแก่น” เล็กน้อย เป็นต้น

คำชี้แจง: ให้ท่านวงกลมตัวเลขระดับศักยภาพของจังหวัดคู่เปรียบแต่ละคู่ในด้านต่างๆ ตามดุลยพินิจของท่าน

เส้นทางบินระหว่างประเทศ																			
1	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
2	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
3	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
การเดินทางเข้าออกสนามบินและสิ่งอำนวยความสะดวก																			
4	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
5	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
6	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
การเดินทางเชื่อมต่อระหว่างจังหวัด (ทางอากาศ รถไฟ รถยนต์)																			
7	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
8	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
9	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
การเดินทางภายในเมือง																			
10	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
11	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
12	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่

การสนับสนุนจากองค์กรท้องถิ่น																		
13	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
14	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
15	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
ประสบการณ์การเป็นเมืองเจ้าภาพ																		
16	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
17	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
18	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
สถานที่จัดงานและสิ่งอำนวยความสะดวก																		
19	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
20	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
21	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
ที่พักและสิ่งอำนวยความสะดวก																		
22	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
23	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
24	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
โปรแกรมงานและโอกาสพิเศษที่ได้รับ																		
25	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
26	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
27	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
ภาพลักษณ์ของเมือง																		
28	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
29	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
30	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
ความปลอดภัยของเมือง																		
31	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
32	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
33	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่

ความเหมาะสมในการจัดงานด้านการแพทย์ สาธารณสุข และสุขภาพ																			
34	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
35	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
36	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
ความเหมาะสมในการจัดงานด้านการเกษตร อาหาร																			
37	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
38	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
39	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
ความเหมาะสมในการจัดงานด้านวิศวกรรม เทคโนโลยี คอมพิวเตอร์ และนวัตกรรม																			
40	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
41	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
42	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
ความเหมาะสมในการจัดงานด้านท่องเที่ยว ศิลปวัฒนธรรม																			
43	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
44	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
45	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
ความเหมาะสมต่อการเป็นเมืองจัดประชุมองค์กร (Meeting)																			
46	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
47	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
48	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
ความเหมาะสมต่อการเป็นเมืองจัดกิจกรรมการท่องเที่ยวเพื่อเป็นรางวัล (Incentive)																			
49	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
50	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
51	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
ความเหมาะสมต่อการเป็นเมืองจัดงานประชุมวิชาการ (Conference)																			
52	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
53	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
54	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
ความเหมาะสมต่อการเป็นเมืองจัดงานแสดงสินค้าหรือนิทรรศการ (Exhibition)																			
55	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
56	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
57	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่

ความเหมาะสมต่อการเป็นเมืองท่องเที่ยวพักผ่อน (Leisure)																			
58	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ขอนแก่น
59	พิษณุโลก	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่
60	ขอนแก่น	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	กระบี่

ส่วนที่ 4 ข้อเสนอแนะเพิ่มเติมในการเป็นเมืองไมซ์

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ผู้วิจัยขอขอบคุณที่กรุณาตอบแบบสอบถาม

VITA

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