

The Process of Low-Carbon Tourism Development in Main Tourism City, Ayutthaya World Heritage Site, Thailand

Thanarat Ratanapongtra

Department Of Tourism And Hotel, Faculty Of Liberal Arts, Rajamangala University Of Technology Suvarnabhumi, Thailand

Tharanee Nawatnatee

Department Of Tourism And Hotel, Faculty Of Liberal Arts, Rajamangala University Of Technology Suvarnabhumi, Thailand

ABSTRACT

This research aims to 1) study personal factors and foreign tourists' behavior travelling to Ayutthaya World Heritage Site, Thailand, 2) study foreign tourists' expectation levels towards low-carbon tourism in Ayutthaya World Heritage Site, Thailand, 3) compare foreign tourists' expectation levels regarding personal factors and tourism behavior, and 4) study the connection process relating to low-carbon tourism development in a main tourism city in Ayutthaya World Heritage Site, Thailand. Qualitative and quantitative research methodology was employed by implementing questionnaires and in-depth interviews. The result revealed that the differences of gender and age of tourists contributed to different expectations from a cultural center in terms of training skills. In addition, foreign tourists having dissimilar goals for traveling experiences and expenses have expectations towards low-carbon tourism management in Ayutthaya World Heritage Site, Thailand. Tourism promotion to organize traditional cultures for tourists' participation and the connection processes relating to low-carbon tourism development in a main target city in Ayutthaya World Heritage Site, Thailand were from the cooperation among government, academic sectors, tourism partnerships, business owners and community leaders which followed 7 procedures.

Keywords tourism, low-carbon, world heritage, Ayutthaya

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Introduction

The Tourism industry plays a crucial role in terms of propelling countries and world economics. It connects to other industries both directly and indirectly. The growth of the tourism industry is not only derived from domestic tourism since the main income is earned from international tourists. In 2019, there were more than 1,461 million tourists travelling internationally (Marketeer, 2020), thus every country has seen the importance of tourism since it helps develop economics and the life quality of populations.

Thailand is one of the countries which has paid attention to the tourism industry since the 19th century and the initiation of official commerce with westerners. The Thailand exhibition was publicized in the United States of America which

contributed to over ten thousand foreign tourists visiting Thailand. Until 1936, the proposal of a tourism industry was arising (Sangchoey, 2007; Warakulwit, 2015) and there was the origin of national flight in 1959 (Office of the Permanent Secretary, 2015). Moreover, the issue to promote tourism was recorded in the 4th National Economic and Social Development Plan 1977-1981 which triggered the development of the tourism industry in the country concretely. Since then, there have been proactive public relations to disseminate images of Thailand internationally (Office of the National Economic and Social Development Council, 2017). International tourists were inclined to increase continuously and rapidly. In 2019, over 39 million international tourists flew into Thailand, which was an increase of 4.24

percent. When compared to that of 2018, the income of Thailand was roughly 2 trillion baht, growing 3.05 percent, and Thailand was ranked 4th place for receiving income from tourism (The Standard, 2019; Permission of Tourism Business, 2020). The development of tourism and the increasing number of tourists had a positive effect regarding tourism connections with other regional tourism including Ayutthaya cultural World Heritage, the ancient capital city of Thailand which was approximately nominated in 1350 before the Thonburi and Rattanakosin periods. Ayutthaya was the capital city for 417 years, the longest capital city in the history of Thailand and it was a significant port city of the world. The capital city was influenced by Indian and Chinese civilizations so it was multiculturalism and ways of lives and became valuable resources of the country. At present, the historical places still exist and express previous prosperity moreover they attract the interest of foreign tourists to visit. According to statistic record, it was revealed that within three quarters in 2019 more than five million people traveled to Ayutthaya World Heritage Site which was ranked 8th place in the country and 1st place in the province that locates cultural World Heritage Site in Thailand (Thansettakij, 2019)

The consistent interest from tourists contributed to a massive visit into the city. Referring to the geographical circumstance, it disclosed that Ayutthaya cultural World Heritage situates in the middle of the community, which located later on. Therefore the historical sites were among a number of locals, these caused the deterioration of tourism resources, especially a highly increasing pollution which affects the historical sites. Thailand Institute of Nuclear Technology (Public Organization) employed nuclear technology and radiation to investigate the cause of air pollution which brought about the deterioration of historical sites. The results showed that the historical sites contained a large amount of Sulfur dioxide or high Sulfur. Furthermore, sulfur was found in the bricks of the historical sites. Sulfur dioxide was detected in the atmosphere, accumulating from fuel burning

of transportation, industries, houses, and nature. The quantity of PM 2.5 also exceeded standards during October to January (Khaoayutthaya, 2019). Thus, a study should be conducted to solve the problems in terms of pollution. It is certain that tourism can lessen the mentioned effects. If these problems were not solved, it would deflect determination and lead to a decreasing number of tourists travelling to Ayutthaya World Heritage Site (Weaver, 2011; Gillespie, 2013).

Ratanapongtra & Khamkerd (2020) studied the management of decreasing the effect of carbon pollution caused by tourism activities in world heritage sites, case study: Ayutthaya World Heritage, Thailand. The study discovered the effect of carbon pollution in Ayutthaya World Heritage Site found that Sulphur dioxide from crowded traffic vehicles affected the historical deterioration. The guidelines to diminish the effect of carbon dioxide was divided into three aspects; five guidelines for tourism activity, 5 guidelines for basic structural improvement, and 3 guidelines for administration. To contribute the participation of stakeholders, this study aims to figure out the results in solving carbon pollution in Ayutthaya World Heritage Site. The effective tourism management should be accordant with the tourists' behavior and expectations. Especially foreign tourists, they may have diverse behavior and aspects so it would be a challenging to solve the mentioned problems and accord with the behavior and expectations. The finding of this study would be beneficial for the stakeholders to enhance tourism in Ayutthaya World Heritage site by reducing the effect of carbon in the area.

This research is conducted to study personal factors and foreign tourists' behavior towards the tourism management connection in order to reduce carbon and maintain the status of main target attraction. Effective tourism management should be relevant to behavior and expectations of tourists, especially foreign tourists who probably have different aspects and behavior leading to the challenge of tourism management. The results from this research are for the stakeholders to enhance tourism effectively and concretely and to

contribute to tourism development by reducing carbon in Ayutthaya World Heritage Site. The objectives of the research are to study personal factors and foreign tourists' behavior, expectation levels, to compare the expectation levels of foreign tourists towards low-carbon tourism in Ayutthaya World Heritage Site, Thailand, and to study the connection process relating to low-carbon tourism development in the main target city in Ayutthaya World Heritage Site, Thailand. The hypotheses are different personal factors and behavior of tourists lead to different expectation levels on low-carbon tourism in Ayutthaya World Heritage site, Thailand. What's more, connection processes of low-carbon tourism management in main target attractions should be cooperated among related parties.

LITERATURE REVIEW

LOW-CARBON TOURISM DEVELOPMENT

Everyone in the world plays a major part in causing global warming. Many organizations pay attention on the change of temperature by adjusting their way of life and use methods including economic development through various channels so as to reduce carbon dioxide emissions. Particularly, the tourism industry is a crucial factor to propel and develop countries. The economic expansion triggers climate change. One of the things that the tourism industry can help reduce carbon dioxide emission is by adjusting behavior and changing ways of life that lead to global warning.

Low-carbon tourism is extended from sustainable tourism and ecotourism which have special features. Low-carbon tourism is friendly to environments by decreasing negative effects to them. This brings about a more abundant environment. It can be mentioned that low-carbon tourism emphasizes on lowering fuel usage and carbon dioxide emission as well as other deteriorating effects. However, tourism activities still can be conducted and create satisfaction in tourists sustainably. To organize this type of tourism, cooperation from all stakeholders is needed to drive the tourism (Min, 2011;

Aksornpradit & Unaromlert, 2017; Zhang & Zhang, 2019).

CULTURAL HERITAGE

World heritage can be best described according to the Thai version issued by United Nations Educational, Scientific and Cultural Organization (2009). As it was defined in Convention for the Protection of Word Cultural and National Heritage "...any interesting and outstanding cultural and natural heritage places are significant to be reserved in order to be one of the world heritage sites for humankind" In addition to Operational Guidelines for the Implementation of the World Heritage Convention, world heritage was described as ...amidst priceless and irreplaceable treasures, which are not valuable only in a specific country but humankind. The loss from deterioration and disappearance triggers to the loss of world heritage. Each element of world heritage, which is internationally precious, should be preserved from being greatly threatened and realized the value of these cultural heritage in influencing social and economic development (Cultural and Natural Environment Management Bureau, 2013; Timothy, 2014)

TOURIST BEHAVIOR

Parasakul (2012) claimed that travelling happened from three causes; for pleasure, for business including meeting, conference, rewards and exhibitions, and for other purposes regardless of those that have been mentioned earlier. Tourist behavior includes all actions of tourists no matter that behavior has been done consciously or unconsciously in order to respond to a particular need in a particular situation. Tourist's overt behavior can be noticed by using senses while tourists' covert behavior is the function of internal organs including thoughts and emotions which normally are linked to one another. Moreover covert behavior mostly controls overt behavior. The characteristics of tourism products relate to tourist behavior; thus this leads to building images and influences the change relating to tourism services (Sophonsiri, 2011; Baloglu, Henthorne & Sahin, 2014; Kocka, Josiassena & Assaf, 2018).

TOURISM CITY MAINTENANCE

Ratanapongtra & Techakana (2019) disclosed that to maintain Ayutthaya as main target tourism city consists of 10 elements; 1) develop the museum as a world heritage learning center, 2) establish a cultural activity practices center, 3) encourage community participation, 4) provide opportunity for community resources management, 5) enhance values and the quality of local products, 6) control and recover architecture and conserve the traditions of ancient Ayutthaya, 7) develop the personnel of the tourism industry, 8) develop circumstance and public utility systems, promote traditional culture organization, 8) encourage participation of historical activity arrangements, 9) utilize historical events to organize memorable fairs or festivals, and 10) promote marketing campaigns through integrated marketing. In addition, Ratanapongtra & Khamkerd (2020) discovered that the effects of carbon pollution in Ayutthaya World Heritage Site, Thailand which has traffic congestion contributing to sulfur dioxide combustion directly causing historical site destruction. The research suggested guidelines to decrease the effect of carbon pollution in Ayutthaya historical site. The guidelines were divided into 3 aspects; 1) the guideline of tourism activities which were composed of 5 guidelines; incense smoke decrease in holy places, water tourism activity, cycling activity along historical routes, canoeing activity for sightseeing, tri-cycling activity. 2) The guideline for basic infrastructure development consisted of 5 guidelines; high-speed train development, transportation development in the city, cycling route development or a shuttle bus for sightseeing, green zone development, and ancient canal development. 3) The guidelines for administration

CONCEPTUAL FRAMEWORK

were divided into 3 aspects; appointing integration committee to solve tourism problems, issuing provincial policy to encourage participation in building a quality city, and cooperating with business sectors in Ayutthaya province. The research result from content analysis also revealed that any adjustment or development in a main tourism city needs to consider the factors of tourism city maintenance.

TOURIST EXPECTATION

Expectation is the attitude and need of tourists that expect services to respond to a specific need and have exact attitudes towards the evaluation of services and products. The need is underneath consciousness resulting from individual conditions. According to tourism, there are 3 interesting issues concerning expectations; 1) expectations of tourists and services would be altered depending on different situations, 2) expectations of tourists towards services from each facilitator would be various, and 3) expectations of tourists would be changed based on different populations. In addition, the expectations of tourists towards services from different businesses would not be identical. The expectations of tourists towards tourist places are influenced by experiences from various business facilitators. For similar industries, tourists tend to compare their experiences to those received formerly. Then business owners have to maintain competitiveness to build images depending on tourist expectation. Nevertheless, tourist expectation would be high towards services received from tourism and be sensitive to the effectiveness of services from the tourism industry (Akin, Ebru & Rüya, 2010; Buhalis & Amaranggana, 2014).

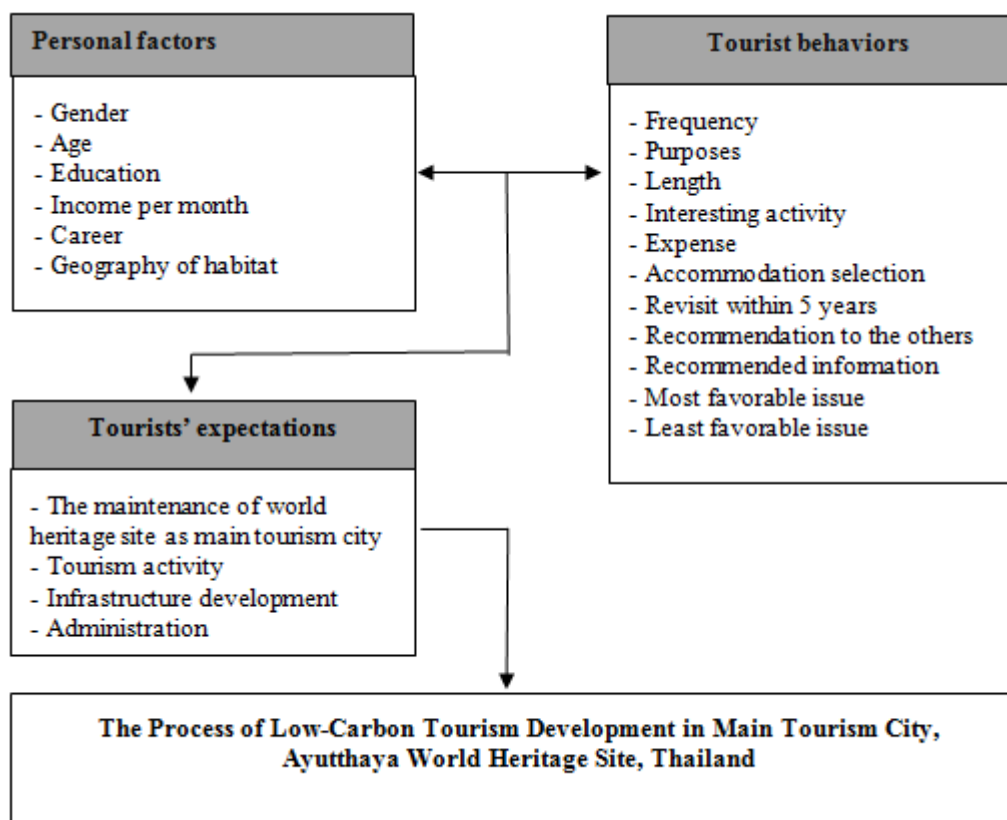


Figure 1: Conceptual framework

RESEARCH METHODOLOGY

This research employed content analysis, survey research, and qualitative research in 1,200 acres of Ayutthaya world heritage site by using following research procedures.

1. POPULATION AND SAMPLE

1.1 The population of the research was tourists speaking English and visiting Ayutthaya World Heritage Site, Thailand. There were 369,547 tourists and 2,046,992 visitors. According to the tourism department statistics, the total number of tourists was 2,416,539 (Permission of Tourism Business, 2018). The sample of the research was 400 tourists who were obtained by employing sampling size calculation (Khazanie, 1996).

1.2 INFORMANTS

The informants were purposively selected, who were relevant to Ayutthaya World Heritage Site. The informants were divided into 3 sections; 1) 10 representatives from government and private sectors which consisted of the department of Ayutthaya Tourism and Sports, Fine Arts Department 3 Ayutthaya province, Ayutthaya

Historical Park, Ayutthaya Provincial Office for Natural Resources and Environment, Department of Cultural Promotion, scholars, tourism reporters, 2) 5 representatives from tourism agencies, hospitality and local product sellers, and 3) 5 representatives from communities relevant to Ayutthaya World Heritage Site management.

2. INSTRUMENTS

2.1 Documentary research was utilized to study related research in order to outline the range of qualitative and quantitative research.

2.2 Quantitative research was conducted through questionnaires which were separated into 4 parts; 1) checklist of personal information with only one answer, 2) tourist's behavior with only one checklist answer, 3) expectation level towards low-carbon tourism management in Ayutthaya World Heritage Site with 5 rating scale divided into 4 parts; main tourism city maintenance, tourism activity, infrastructure development, and management, and 4) other recommendations with open-ended questions.

2.3 Qualitative research was operated by semi-structured interview. The questions were scoped concerning the connection process of low-carbon tourism development as a main tourism city in Ayutthaya World Heritage Site, Thailand together with low-carbon tourism development in the aspects of tourism activity, infrastructure development and administration.

3. INSTRUMENT CONSTRUCTION

The procedure of constructing and examining research instruments was as follows. 1) Review related studies to specify variables. 2) Construct questionnaire relevant to definition of variables and research objectives. 3) Submit the questionnaire to 3 professionals to check content validity. The researchers selected questions with IOC more than or equal to 0.7 in order to construct the questionnaire. 4) Try out the questionnaire with 30 foreign tourists who were not a sample group. 5) Check content validity of each question and measure internal consistency by making use of Coefficient Alpha (Cronbach, 1990). The reliability level of the whole questionnaire was 0.85.

4. DATA COLLECTION AND ANALYSIS

The data collection was primary data by implementing 400 questionnaires with accidental sampling in Ayutthaya World Heritage Site. The statistics used in the research were descriptive analysis; percentage, average, and standard deviation. Moreover, inferential statistics consisting of t-test and f-test was utilized to examine the hypothesis of the difference of the population at significant level 0.05. The data were gathered from the informants in terms of content analysis and coding analysis. The data then were categorized into different aspects and were checked by triangulation. In addition, secondary data were compiled from previous research, research articles, books, and internet resources.

RESULTS

PERSONAL FACTORS AND TOURISTS' BEHAVIORS

Referring to analyzed data, the ages of foreign tourists were between 31-45 years old and 20-30 years old respectively. Their educations were bachelor's degree followed by master's degree.

Their occupations were private officers and government officers respectively. The average incomes were 1,001 – 2,000 USD per month 2,001 – 3,000 USD per month. The tourists were most from Asia and seconded by Europe. According to the tourists' behavior travelling to Ayutthaya World Heritage Site, it discovered that most of the tourists visited Ayutthaya for their first time and two – three time visits respectively. The purposes of the visits were first for pleasure and second for business. The length of the visit was back and forth and one overnight stay respectively. Social media advertisements were very influential with regards to decision making for the visit. Secondly the tourists information for travelling to Ayutthaya was by acquaintances. The most interesting activity was visiting historical places and learning the ways of life of local people. The travelling was with friends, boyfriend or girlfriend and with family respectively. The expense spent on the travel at Ayutthaya historical site was approximately 1,001 – 3,000 baht and not over 1,000 baht. In case of accommodation, guesthouse was likely to be the first choice and 3-star hotel together with necessary facilities. Within 3-5 years, there was no confirmation of revisiting Ayutthaya world heritage site and there would be a revisit to Ayutthaya world heritage respectively. When they went back to their countries, they would firstly introduce Ayutthaya World Heritage Site to their acquaintance and secondly introduce foods. The biggest impression of the visit was Ayutthaya World Heritage Site followed by the friendliness of Thai people. The least favorable parts of the visit were various tourism activities and transportation to places.

TOURISTS' EXPECTATION LEVEL

The study of foreign tourists' expectation towards low-carbon tourism in Ayutthaya World Heritage Site, Thailand showed that the aspect of a main tourism city maintenance in Ayutthaya World Heritage Site was high level (4.17). When it was considered into particular details, it was found that the 3 highest scores were the promotion of traditional activities of the communities so that the tourists could admire and attend those activities.

The mentioned topic was at the highest level (4.32). According to controlling and recovering architecture and conserve traditions of ancient Ayutthaya, this topic was at the highest point (4.28). The establishment of a cultural activity practices center was also at the highest level (4.26). With regards to tourism activities to develop sustainable low-carbon tourism, the overall average was at the highest level (4.22). 3 issues that have the highest places were cycling activity along historical routes (4.41), water tourism activity (4.35), and incense smoke decrease in holy places (4.27). According to infrastructure development to develop sustainable low-carbon tourism, the overall image was at the highest level (4.29). The highest scores for the top three questions were the development of a high-speed train (4.46), transportation development in the city (4.34), a cycling route, development of a sightseeing shuttle bus (4.31). For the aspect of the management for sustainable low-carbon development, the overall image was at high level (4.22). When each question was deeply considered, the 3 highest levels were; 3) cooperating with business sections in Ayutthaya province, appointing an integration committee to solve tourism problems, issuing the provincial policy to encourage participation in building a quality city (4.16). According to other comments from opened-ended questions, the highest scores were as follows. Arrangement of a tourism bus was at 23.18 percent. More activities for tourism more than visiting historical places was at 18.30. Moreover, some trees should be planted along the way to historical sites in order to lower hot temperatures.

COMPARE TOURISTS' EXPECTATION LEVEL

The comparison of the foreign tourists' expectation regarding personal factors towards low-carbon tourism in Ayutthaya World Heritage Site, Thailand revealed that tourists with different personal factors like education, career, income, and inhabitants have identical expectations towards low-carbon tourism in Ayutthaya World Heritage Site, Thailand. Nevertheless. The tourists

by gender and age have the expectation that the establishment of cultural activity practices center should be operated with the significant level (0.05).

With reference to the level of foreign tourists' expectation regarding the tourists' behavior towards low-carbon tourism management in Ayutthaya World Heritage Site, Thailand, the results were as follows. The tourists who have differences of travelling such as frequency, planning, the influence to make decisions, companions, most interesting activity, most favorite thing, least favorite thing, accommodation selection, chance of revisiting within 1-5 years and recommendation to the others have similar expectation towards low-carbon tourism management in Ayutthaya World Heritage Site, Thailand. Furthermore, the tourists having the difference of travelling purposes, experiences of travelling to Ayutthaya, and expenses during their stay in Ayutthaya World Heritage Site, Thailand have the expectation towards organizing traditional activities of the locals for the tourists to take part in and admire with the statistical significance 0.005.

THE CONNECTION PROCESS ON LOW-CARBON TOURISM DEVELOPMENT IN MAIN TOURISM CITY

Regarding the study, it indicated that Ayutthaya World Heritage site is a main tourism city, so any changes or developments need to be operated with the underlying target of a main tourism city. This research studied behavior and tourists' expectation towards the connection process on low-carbon tourism development and maintains the statues of a main tourism city. From the analyzed data which were received from the informants, the data revealed that the cooperation among government and private sectors, scholars, business networks, business owners, and community leaders contributed to concrete success which can be summarized into 7 procedures as follows.

PROCEDURE1 ISSUING POLICY BY GOVERNMENT SECTION

The Government section of Ayutthaya province should issue policies which were mutually set by

network parties. Since each section or department has dissimilar responsibilities, the issues of a development plan for a main tourism city and guidelines to reduce carbon dioxide should be integrated as a tourism development plan. The authority to propel the plan should be yielded to The Tourism and Sports department of Ayutthaya province. The development plan consisted of infrastructure development, enhanced tourism resources and local products, promote participation of business networks, community participation, and meaningful communication of tourists

PROCEDURE 2 ENHANCING KNOWLEDGE

The role of scholars needs to be set in order to develop tourism as a knowledge instructor to local people in the community, business owners of local products as well as tourism business owners who are crucially promoting the knowledge regarding tourists' needs on the products and services. The tourism policy needs to be clarified towards its practices by the communication from the government section.

PROCEDURE 3 DEVELOPING TOURISM RESOURCES

After issuing policy and contributing knowledge to all stakeholders into practices, it revealed that any changes or developments need to be operated by the underlying target of main a tourism city. This research was conducted to study behavior and expectations of tourists towards the connection procedure of low-carbon tourism management and a main tourism city. Thus departments concerning tourism are required to contribute to the plan and put into practice, especially tourism resources development which is a key factor in operation to reduce carbon dioxide from tourism.

PROCEDURE 4 INDEPENDENT BUSINESS OWNERS AND BUSINESS PARTY NETWORKS

Sustainable tourism requires cooperation from the workplace. Regarding to the analyzed data from the key informants, it revealed that there have been many association, clubs, business party networks and tourism business owners in Ayutthaya

province. Thus both government and private sectors have to take a role as a leader to establish collaboration among these stakeholders. Moreover, the result also disclosed that private sectors lack motivation to cooperate with government sections due to ambiguous benefits.

PROCEDURE 5 ENHANCING COMMUNITY TOURISM

The adjustment of tourism in order to reduce carbon dioxide needs to establish cooperation with the community because tourism activities and services will be more complicated and changed from the previous features. If the communities have not been developed, it will affect tourism resources development and tourism experience. The issue that should be emphasized are designing community activities to reduce the effects of carbon dioxide, the development of eco-friendly products, reducing the usage of useless resources, recycling and decreasing the use of personal cars in community tourism areas.

PROCEDURE 6 CREATING THE RECOGNITION OF TOURISTS

Tourists are the key element of tourism. When there has been procedures of tourism development and styles for tourism, tourists have been affected directly. Referring to tourism development in Ayutthaya, it discovered that tourists lack understanding of tourism adjustment, for example, the adjustment of tourism routes and the closing of cycling routes. So the government section, private sectors and community cooperate, the creation of an instrument to communicate with foreign and local tourists is needed including building tourism activities which reduce carbon dioxide in Ayutthaya World heritage Site.

PROCEDURE 7 BUILDING SUSTAINABLE BALANCE

Having operated 6 procedures, each section has to set meetings and summarize the outcome of operating all policy as well as evaluating the effectiveness of reducing carbon dioxide tourism. The consideration can be conducted through the level of carbon dioxide in the world heritage site, tourists' satisfaction, the effects to business party networks, business owners in terms of economy,

culture, society, and environment. After analyzing all elements that have been mentioned earlier, the results have to be employed and improved in the step of the provincial plan.

CONCLUSION AND DISCUSSION

With comparison to the expectation of foreign tourists regarding personal factors towards low-carbon tourism management in Ayutthaya World Heritage Site, Thailand, it disclosed that the differences of tourists with personal factors; careers, income and geography of living have similar expectations towards low-carbon tourism in Ayutthaya World Heritage Site. However, it revealed that the tourists with age factor have different expectations towards the establishment of a cultural activity practices center. In addition to the education factor, the tourists have significant statistics at 0.005 towards the expectation of tourism activities to develop sustainable low-carbon tourism. The result is accordant with Shiffman & Kanuk (2007); Popichit, Serirat, Anuwichanon & Meechinda (2012) who revealed that male and female were likely to have different attitudes and behaviors and that education was a factor that contributed to those differences. Whereas Ayutthaya world heritage emphasized on historical presentation, the study on gender behaviors made the understanding of tourists' needs towards tourism activities. Moreover, generations, periods of age, environment, and cultures also affected tourism. Furthermore, Wutisilp & Phasunon (2015) discovered that age and education factors triggered different expectations and satisfactions. All mentioned above are in accord with this study that age and gender have effects in different expectations towards the establishment of a cultural activity practices center.

The comparison on the level of foreign tourists' expectation regarding the tourists' behaviors towards low-carbon tourism management in Ayutthaya World Heritage Site, Thailand revealed that the tourists with the differences on planning, the influence to making decision, companions, , most interesting activity, most favorite thing, least favorite thing, accommodation selection, chance of

revisit within 1-5 years, recommendation to the others have similar expectation towards low-carbon tourism management in Ayutthaya World Heritage Site, Thailand. Furthermore, the tourists with the differences of travelling purposes, experiences of travelling to Ayutthaya, and expenses during their stays in Ayutthaya World Heritage site, Thailand have the expectation towards organizing traditional activities of the locals for the tourists to take part in and admire with the statistical significance 0.005. According to the results, the purposes of travelling were various and the different experience factors also caused the comparison of their travelling experiences. Besides, expense influenced the tourists' travelling. According to the result, it could be included that there were tourists, with various nationalities and needs, who visited Ayutthaya World Heritage site. The result agreed with the study of Kanchanarat (2017) which uttered that tourists received dissimilar cultural experiences, but they had different expectations. Referring to Solomon (2007), expectation was very crucial since the expectation was used to measure the level of satisfaction towards tourist places. If the results from tourism were over the expectation level, it would make tourists more satisfied or impressed. What's more, Blackwell, Miniard & Engel (2006) mentioned that if tourists perceived satisfaction beyond their expectation level, there would be chances of revisiting for products and services. Therefore, if there has been preparation in Ayutthaya World Heritage Site in terms of low-carbon tourism development which is in accord with behavior and expectations of tourists, it will be a significant factor leading to tourists' impressions and revisiting in the future as well as recommending Ayutthaya to other people.

Besides, the connection process of low-carbon tourism development as a main tourism city in Ayutthaya World Heritage Site, Thailand would be successful by cooperation from 5 sections; government sections, private sectors, scholars, business networks, business owners, and community leaders. This can be operated effectively by conducting 7 processes; issuing

policy by government section, enhancing knowledge, developing tourism resources, independent business owners and business party networks, enhancing community tourism, creating the recognition of tourists, and building sustainable balance. The result is in accord with Nawatnatee, Kongdit, Promsilp, Chuapung, Chaiphithak, Sakulrat & Polamuangdee, (2017); Ratanapongtra,

Khamkerd, Kongdit & Nawatnatee (2020) that effective tourism had to integrate among government sections, private sectors, community leaders, and tourists under the consideration of mutual tourism development which contributed to the strength of community economy, environmental preservation, cultural recovery and participation. This can be summarized as follows.

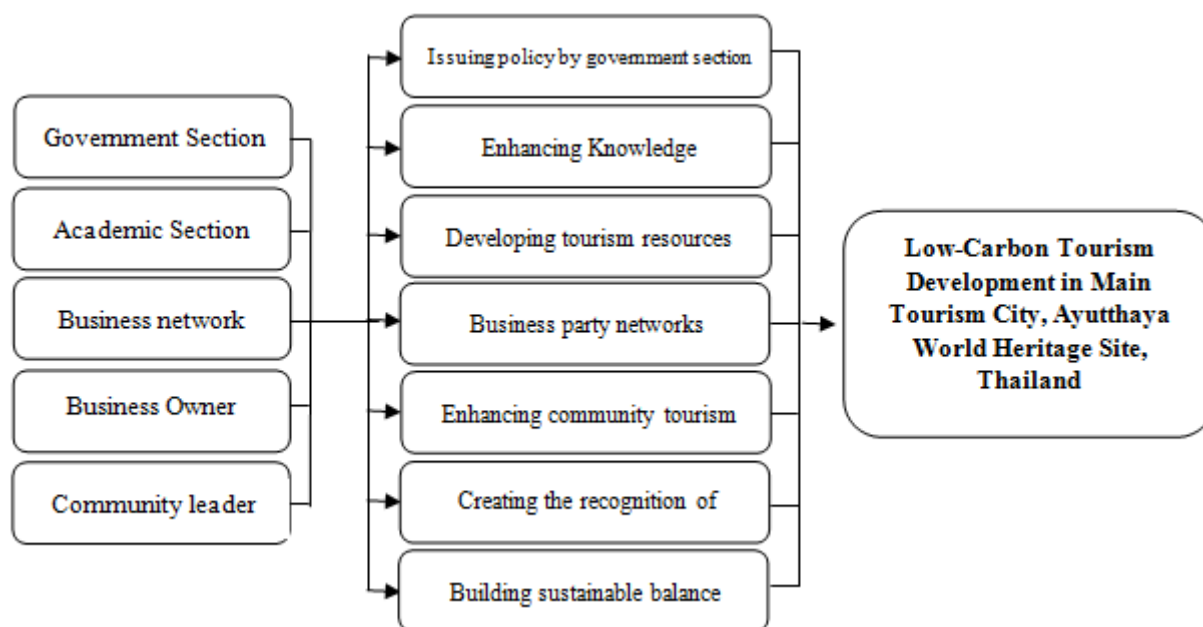


Figure 2: The propelling from stakeholders to the connection of low-carbon tourism development

This research is extended from The Management of Decreasing the Effect of Carbon Pollution Caused by Tourism Activities in World Heritage Sites, Case Study: Ayutthaya World Heritage, Thailand which obtained most interest from the departments of Ayutthaya World Heritage Site. The 3rd Regional Office of Fine Arts Department, Ayutthaya employed the research results as a database to issue policy in order to reserve and utilize historical places through sustainable tourism. This research can answer effectively how to manage low-carbon tourism that accords tourists' needs. The results discover that each aspect of expectation is different. The overall image is at high to the highest level which indicates that the guidelines are set to match the needs and expectations of the tourists. This is changing for related departments to effectively

implement the research results into concrete operation.

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