# Executive Summary

Thailand is a developing country that has proudly established itself as one of the world's leading tourism destinations. Thailand was in fourth place in the world for international tourism receipts in 2019 and ranked eighth in the world when it comes to the number of international visitor arrivals (UNWTO, 2020). In 2019, Thailand received around 40 million international tourists each year, earning revenue of approximately 2.0 trillion baht (Ministry of Tourism and Sports, 2020). However, Thailand is ranked 31st in the world in terms of travel and tourism competitiveness, which includes the environmental sustainability indicators (World Economic Forum: WEF, 2019).

The tourism industry is one of Thailand's most important economic sectors. It was able to create 18 percent of GDP in value added, both directly and indirectly, in 2018, and contributes approximately 12 percent of total employment. About 4.4 million individuals were employed, which is greater than the total number of persons employed in the manufacturing industry.

The COVID-19 epidemic is wreaking havoc on the world's tourism sector, including Thailand’s. This poses important questions: How will Thailand's economic sector evolve as a result, and how can strategies and tactics be planned and prepared to support what comes next? What role may research academics play in future tourist strategy studies and recommendations?

The main objectives of this project, “Strategy for Research and Development for Tourism after COVID-19” are:

1) To study the trends of Thailand’s tourism prior to COVID-19 and assess the impact of the COVID-19 epidemic on the potential and opportunity of Thailand's tourism competitiveness.

2) To formulate possible scenarios of Thailand’s tourism during and after the COVID-19 epidemic; and

3) To suggest policies, strategies, and research roadmaps that will play a role in driving the recovery and adjustment of Thailand's tourism economy during and after the COVID-19 epidemic.

In order to generate alternative scenarios, create policy, and strategies for research and development for short, medium, and long-term tourism, this study uses strategic foresight and mixed methodologies as major conceptual frameworks and techniques. For readers to access the study results, theories, frameworks, and models used for our analysis, study methods, and statistical inference are included in appendices.

The study is divided into three parts. The first part presents Thailand's tourism situation before the COVID-19 epidemic, until 2019. This is to gain a better understanding of Thailand's tourism potential.

The second part of the study analyses Thailand's future tourism in the aftermath of COVID-19. What should our goals be?

The final part discusses a system-based tourism research and development strategy which reviews and synthesizes research information on Thailand's tourism from 2012 to 2020 using data mining and bibliometrics methods. Additionally, it includes the design of a comprehensive tourism research plan in accordance with the recommended strategy.

**Part 1: Before COVID-19 epidemic**

*1. Potential of Thailand's tourism before COVID-19 epidemic*

Over the past decade, tourism in Thailand has evolved strongly to achieve the rank of third in the world by tourism receipts and eighth in the world by tourist arrivals in 2019. However, a comparative study based on the World Economic Forum's (WEF) Travel and Tourism Competitiveness Index (TTCI) found that Thailand remained in the 31st position. The disparity of rank on demand side (measured by income) and supply side (measured by competitiveness) may lead to an overloading of tourists which could degrade tourism resources in the future.

A comparison of the evolution pattern of Thailand's tourism and world tourism using the Latent Growth Model, from 2015 to 2019, shows that there was an improvement in both global and Thailand tourism. The evolution of world tourism has been driven by *Supply Pull*, which means that developed countries that are willing to promote tourism have benefited more from the expansion of the tourism sector than underdeveloped ones. Although Thailand has an edge in terms of international visitor acceptance, information and communication, and value for money, it also has significant weaknesses in terms of security, health, and the environment. All three of these may erode any potential in the future.

According to the Latent Growth Model approach, Thailand's tourist evolution follows a different pattern from the world, relying on *Demand Push* rather than Supply Pull. Thailand's evolution has the advantage of not overspending, but public utilities may not be constructed in time to accommodate tourists.

An efficiency study on a provincial level, using Data Envelopment Analysis (DEA) method, shows that there are 15 provinces that use existing resources to generate the highest possible income and number of tourists are Phuket, Chonburi, Phetchaburi, Phang Nga, Satun, Ranong, Chiang Mai, Khon Kaen, Phetchabun, Nakhon Pathom, Kanchanaburi, Bueng Kan, Saraburi, Nong Khai and Uthai Thani, which used resources and management to the fullest potential. Furthermore, if such provinces wish to increase income even further, they must increase and upgrade the infrastructure and utility of tourist sites as well as their management.

Besides Phuket and Chonburi, there are provinces with beaches that have similar potential for revenue generation but lack adequate management and infrastructure. These include Nakhon Si Thammarat, Songkhla, Trang, Prachuap Khiri Khan, Trat and Chanthaburi. However, if they want to increase their revenue, they must take care not to cause environmental and safety issues similar to those experienced in Phuket.

*2. Thailand's competitiveness and trends in the travel market*

A study of competitiveness using the Normalized Comparative Advantage Ratio (NCAR) and Shift Share Analysis method shows that Thailand was not interested in the ASEAN market and was in the status called "retreat". In the same way as other counrties in ASEAN, Thailand has a decreased ability to absorb ASEAN tourists, but the rate of contraction is lower than the ASEAN market in general. Also, ASEAN countries are not interested in each other's markets.

Thailand is a "rising star" in Indian and Russian tourist markets. On the other hand, China and South Korea have an expanding rate of tourism market higher than the capacity of Thailand's tourist absorption rate. Therefore, Thailand is in a situation referred to as "lagging opportunities".

While in the North American tourist market, Thailand is in a state known as "lost opportunities", the trend of this market is expanding but sadly Thailand's ability to attract this market has declined. The last two markets, Western Europe (excluding Russia) and Oceania, are leading Thailand in a reverse state. These markets have begun to shrink but Thailand’s tourist absorption ability is more likely to shrink than the contraction of the market.

According to a study conducted using the Shift Share method, Thailand should pay more attention to the ASEAN and Indian tourist markets than in the past. This could lead to an increase in the number of tourists who are not from Western or Confucian cultures, which Thailand is more accustomed to supporting. More research and development are required, to be able to solve these tourists' problems and make their journey more comfortable and consistent with their own traditions. Furthermore, a new strategy must be developed for the North American and Oceania tourist markets, as Thailand has no competitive advantage or special skills in these regions. To summarize, the four markets all require additional research and development in terms of marketing, tastes, and tourist pain points.

China, South Korea, and Russia are the remaining markets with a strong interest in Thailand. As a result, Thailand should maintain a constant focus on these markets, developing new products and services to increase their attractiveness and maintain long-term relationships.

Future marketing efforts should concentrate on nations with high tourism expenditures, such as Hong Kong and Singapore, which ranks 12th and 13th in 2015, whose outbount expenditure is larger than Japan. Japan is ranked 16th in 2019, although it has the advantage of having a huge population, making it easier to identify new markets. For Singapore and Hong Kong, on the other hand, Thailand must focus on their high-end market. Because high-income groups are not impacted by COVID-19 and have high savings rates during COVID-19, the US market is likely to be a market for high-end sectors, and the economy has a propensity to recover fast due to speedy vaccination.

*3. Chinese visitors and Thailand's tourism image*

Before the spread of COVID-19, the number of outbound Chinese visitors increased by 155 million person-trips in 2019, signaling that the direction of overseas travel patterns is moving from sightseeing to leisure tourism. Thailand has been China's top tourist destination for many years, with the exception of Macau and Hong Kong, but Vietnam, with the most direct land border with China, surpassed Thailand as the top country in 2019.

During the COVID-19 epidemic, it was discovered that Thailand is still being addressed online in terms of "Tourism in Thailand" and "Thai people," both in terms of Thai culture, customs, beliefs, food, and way of life. It also involves the possibility of returning to Thailand in the future owing to its various attractions, delectable cuisine, and welcoming people. Thailand's way of life and culture are distinct from those of China, and they are thought of as both charming and colorful. High-quality tourism, health and sanitation safety, and leisure tourism-oriented items are all on the rise as reasons for Chinese visitors to return in new ways. As part of a small group with family, the new SoLoMo independent traveler continues to use social media as a trip planning and decision-making platform, with the goal of experiencing local lifestyles.

Prior to the end of the COVID-19 epidemic, the desire for Chinese visitors to visit Thailand continues to rise due to four major factors:

1) even in the year of the COVID-19 epidemic, the China's economy continues to thrive;

2) tourism has become an integral element of the Chinese lifestyles;

3) during the COVID-19 period, Thai people had a positive and encouraging attitude toward China, including

4) Thailand's capacity to manage the COVID-19 situation, which makes "Wellness tourism" a possible star tourism offering for Chinese visitors.

According to a study of China's 14th Five-Year Plan for National Economic and Social Development, which runs from 2021 to 2025, the country places a high priority on the development of the cultural tourism industry for domestic economic development and encourages the development of new business models in the digital economy. Understanding the 14th Five-Year Travel Plan indicates the changing direction of Chinese visitors' tastes and tourism behaviors, which can be utilized to plan product development in line with their likes and behaviors as they continue to visit Thailand.

The creation of a Standard Operation Procedure (SOP) for every tourism activity chain is one of the fundamental aspects that entrepreneurs must alter in order to be ready to allow Chinese visitors again. As a result, for companies wishing to enter the Chinese market, the ability to use internet channels to establish a network of consumers in both general and tourist industries is critical.

*4. Tourist Experience (Customer Journey) VS Entrepreneur Experience*

Designing tourism services based on design thinking principles necessitates collecting and evaluating the traveler's experience, including expectations, pain points (or points of concerns), where travelers can receive and exchange experiences during various periods of tourism activities, satisfaction received, and sharing travel information and experiences with others. The goal of this section of the research is to gain a better knowledge of how consumer demand is met and how entrepreneurs and government officials respond to provide services that satisfy the demands of visitors.

In tourism marketing, tourists have traditionally been categorized based on demographic variables including age, gender, generation, and country of origin. This study covered, in addition to the aforementioned criteria, motives, tastes, time spent on tourism, and desired activities. Consideration and definition of the characteristics of tourist groups, known as customer personas, are important in order to forecast how these groups would change in the future.

This research began with the division of existing visitors into 23 groups based on their tourism activities and the presentation of Thai tourism's strengths, using three provinces as case studies: Bangkok, Chiang Mai, and Phuket, the three most popular destinations in Thailand. Satisfying the first tourist demands of up to 12 different types of visitors, based on assets or attractions, and assets on province location, the indigenous culture of Chiang Mai was discovered to be one of the area's strongest attractions. Bangkok is a cosmopolitan metropolis that can cater to the demands of a wide range of travelers. Phuket, on the other hand, offers location advantages but, despite its excellent quality, is not well-diversified.

Depending on the amount of time tourists want to spend traveling and the value of assets or attractions on site, 12 groups of identities or model visitors were established.

1) Tourists place a higher value on the worth of time than on the use of other resources.

2) Influencers are crucial in aiding consumers in resolving their current search problems. This function will be reduced in the future due to the fact that the service system is a platform that is susceptible to Big Data assessments.

3) In today's world, language, legislation, culture, and communication remain the significant hurdles to obtaining and sharing information.

4) The present state's tourism management system, particularly with regard to immigration applications, is incompatible with the experience demands of visitors who have changed from mass tourism to Free Individual Traveler (F.I.T.) with focused travel and time spent in a variety of ways.

According to the findings of our entrepreneurial study:

1) Entrepreneurs generally ignored the needs of tourists at the insight level and are more concerned in delivering conventional services that have been provided in the past.

2) Small entrepreneurs have the advantage of being able to adapt to the demands of visitors, and here is where service knowledge begins to accumulate. However, there are occasions when they are unable to satisfy the demands of specific services that need expertise, affecting customer satisfaction.

3) There are a limited number of entrepreneurs who started as service recipients or tourists who later provide services for a niche market.

4) The fact that the government hears issues directly from entrepreneurs may make it difficult to comprehend the true difficulties of visitors, even if the directions are similar but the details differ.

The study also looked at future elements that might influence the way travelers' personalities evolve following the COVID-19 epidemic. Three phases were identified: short-term (1-3 years), medium-term (3-5 years), and long-term (5-10 years ahead), which were divided into 12 groups. The Pamperer and The Outing Joiner have a significant number of tourists. The groups that continue to have a positive trend are:

1) The Thai Toucher,

2) The Time Spender and

3) The Relationship Builder.

Three groups will become less significant in the future:

1) The In-depth Escaper,

2) The Motion-based Wanderer and

3) The Volunteer Traveler. The rest of the group is one in which the number of visitors is expected to rise steadily in the future.

**Part 2: During the COVID-19 epidemic**

*1. COVID-19's impact on short- and medium-term tourist recovery*

After analyzing the impact of COVID-19 on many countries, it is expected that each country's overall economy will be able to recover to the equivalent of 2019 by 2024, with China recovering one year faster than other countries. Hotels and lodgings, as well as aviation, are two tourism and travel industries that will resurface early in 2024. However, owing to travel trends that will shift the old-style tourism to a new normal, it may take considerably longer for tour firms to recover.

The new tourism model will emphasize traveling alone or in small groups, with a focus on safety and hygiene, and will make use of technology to make things easier, such as selecting accommodations that match cleanliness requirements and booking all activities online, among other things. In addition, in order to escape crowds, traveling to new, less traveled, or unseen locations will become increasingly popular. As a result, in the early phases of tourism, pricing is not a significant consideration.

According to the findings of an online survey of 606 Thai visitors, the driving elements for tourism vary by generation, with the baby boomer group preferring to relax and acquire new experiences as a motivating factor for travel and being able to go on any day without a time restriction. Gen X and Gen Y are similar in that they can only travel on weekends or on public holidays.

Before the emergence of COVID-19, Thai people traveled domestically on average 4 times per year in the last 3 years and once per year for going overseas. The baby boomer generation, Gen X and Gen Y travel abroad on average once per year, while Gen Z on average have not traveled abroad.

The SHA mark, which indicates hygienic safety requirements to promote tourism trust, was perceived by roughly 57 percent of all respondents. More than 70% of this group stated that the SHA mark influences their purchase decisions when it comes to tourist products and services.

In terms of public knowledge and utilization of different government tourism stimulus programs, such as Rao Tiew Duay Kan (We Travel Together), Tiew Pun Suk (Trips to Share Happiness), Rao Pai Tiew Gun (Let's Travel Together), and Kum Lang Jai (Encouragement). The We Travel Together project was determined to have the highest level of awareness and registration, with around 24 percent of respondents utilizing rights, which is the highest rate compared to other programs and can encourage spending personal finances raised by nearly 13,000 baht per person.

Environmental issues such as air pollution, water pollution, noise pollution, waste in tourist towns, and overcrowding of visitors accounted for the majority of the tourism difficulties that resulted in a drop in tourism satisfaction among Thai people at the greatest level. Tourist attractions and travel safety are two important components of safety.

According to a study of attitudes on opening Thailand to international visitors, roughly 61 percent of all respondents believe that the country should not be opened, particularly among Gen Y and Gen Z, with approximately 70 percent disagreeing with opening the country. While the proportions of agreeing and disagreeing among the baby boomer and Gen X generations are similar. In terms of opening the country and enabling Thai citizens to travel overseas in 2021, the majority of respondents (more than 65 percent) said they would not travel abroad.

*2. Thailand tourism's baseline future*

The baseline future of Thailand's tourism in the short and medium term until the epidemic situation begins to alleviate was discovered by scanning the signals. The following trends are projected to resume:

1) The popularity of lifestyle and experiential travel will rise.

2) Travel formats will be more varied and flexible.

3) Tourism will place a greater emphasis on activities and outcomes that are both sustainable and beneficial to the environment.

4) The major resource and location for finding information and providing travel services is online platforms.

5) Information has evolved into a critical component in determining the competitiveness of tourist enterprises.

6) Competition for geopolitical dominance will have an impact on global tourism.

7) There will be a rise in cashless tourism and blockchain-based innovation.

8) The importance of disaster surveillance and cybersecurity is growing.

When analyzing the level of uncertainty and impact of the factors driving the major trends, it was discovered that *baseline future of Thailand's tourism, especially in major cities such as Bangkok, Chiang Mai, and Phuket, will consist of*

*1) Small group tourism and large group tourism,*

*2) The expansion of the tourist markets in China and India,*

*3) Tourism concentration and resource degradation,*

*4) Platform economy and online tourism business growth,* *5) Chinese investment in the tourism industry,*

*6) Tourism support technology,*

*7) Climate variability, and*

*8) Air quality.*

Furthermore, because of the danger of catching COVID-19, despite the fact that the vaccination population continues to grow, tourism behavior is predicted to follow the following key trends in the short and medium term:

1) Things that are more known, predictable, and reliable will be valued by travelers, such as concentrating more on domestic or regional tourism.

2) Because tourists are increasingly health conscious and concerned about hygiene and safety, visitors' decision-making is influenced by their confidence in operators.

In addition, several changes in tendencies that existed prior to the COVID-19 situation, such as the entrance of tourists from new markets and the expansion of the global aviation industry, may stall or reverse course. Regarding the trend of foreign tourism investment, there is a good chance that large investors from both inside and outside the country will purchase real estate and tourism businesses in Thailand, particularly investors from China, who can recover economically faster than other countries, have a lower risk of infection, and have the shortest travel distance between China and Thailand.

According to the baseline future, China is the most significant market for Thailand's tourist strategy revival in the near and medium term. Meanwhile, the development of data infrastructure in Thailand's tourist sector, from the data management platform to creating capability for data analytics, has major strategic implications for both government public policy and entrepreneurial enterprise.

*3. Thailand's tourism scenarios at the national and urban levels*

The analysis of an alternative long-term future was divided into two levels: 1) national tourism level scenario and 2) urban tourism level scenario. It is further subdivided at the urban level into two scenarios: Chiang Mai and Phuket tourism and Bangkok tourism.

Thailand's tourism scenarios (Figure 1) were derived from a study of the two major driving factors: 1) the tourist economy model (monotourism or diversification) and 2) the economics of tourism geographical distribution (clustered or dispersed). Future scenarios can be generated in four scenarios:

Scenario 1 The Avengers: a diverse tourism economy that excels in certain locations that is recognized worldwide,

Scenario 2 Bang Rachan: a diverse and broad-based tourist economy, Scenario 3 Khun Phan: a monolithic and broad-based tourist economy, and

Scenario 4 John Wick: a monolithic tourism economy that excels in certain locations that is recognized worldwide.

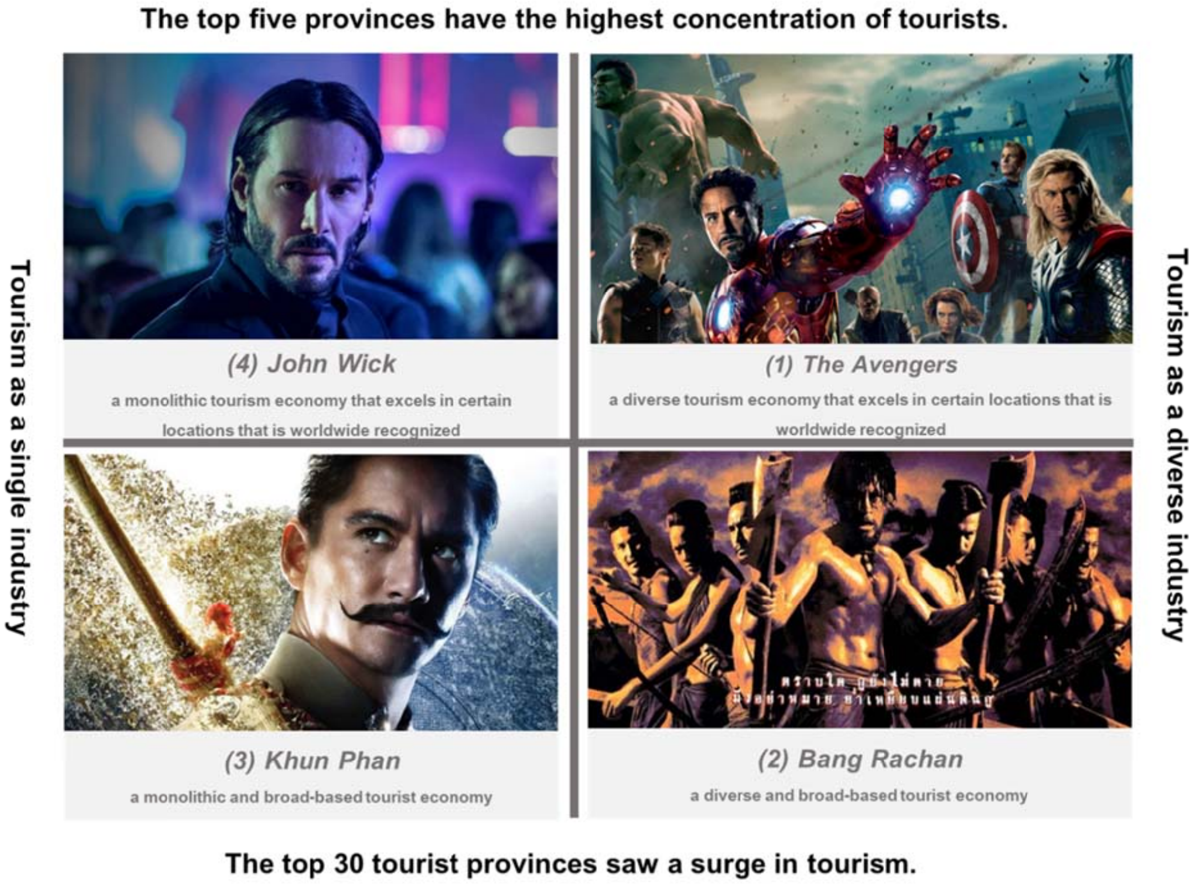


**Figure 1: Thailand's tourism scenarios**

Chiang Mai and Phuket tourism scenarios (Figure 2) were investigated by focusing on two important factors: 1) the tourism industry's structure. (Thai or foreign capital operation) and 2) tourist economy model (monotourism or diversification). There are four scenarios of future possibilities that may be produced:

Scenario 1 Hong Kong/Geneva: diversified tourism economy supported by foreign capital,

Scenario 2 Kyoto/Dubai: diversified tourism economy supported by domestic capital,

Scenario 3 Okinawa/Las Vegas: standard tourism supported by domestic capital, and

Scenario 4 Maldives/Mallorca: standard tourism supported by foreign capital.


**Figure 2: Chiang Mai and Phuket tourism scenarios**

Bangkok's tourism scenario (Figure 3) is created from an examination of key elements that split into four scenarios depending on the flood level:

Scenario 1: Bangkok without floods,

Scenario 2: Bangkok as it is currently,

Scenario 3: Bangkok as a half-submerged metropolis, and

Scenario 4: Bangkok as an underwater city.

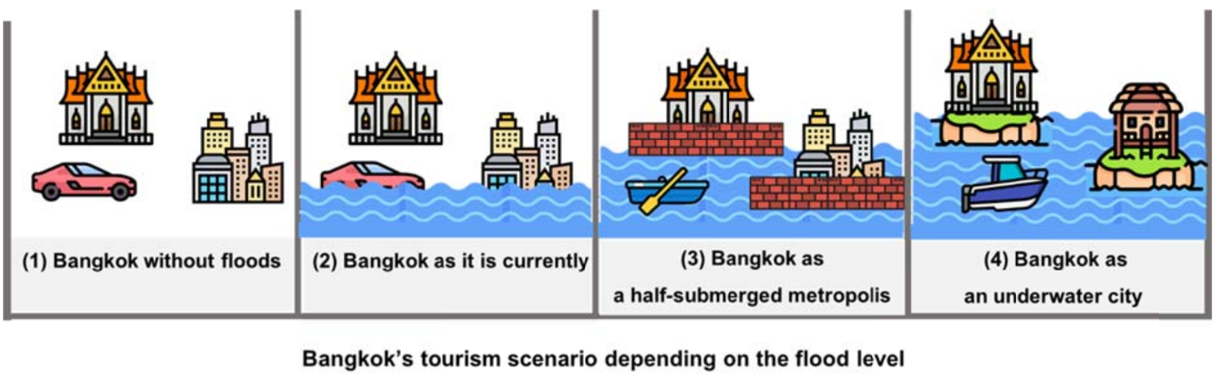


**Figure 3: Bangkok's tourism scenario**

All these future scenarios provided are options to visualizing a range of future scenarios in order to choose the preferred future or the future that will fulfill goals such as sustainability, efficiency, productivity, and equity. Each scenario, on the other hand, might lead to the attainment of each objective at various degrees and with various possibilities and obstacles.

Based on the analysis of the baseline future and scenario, as well as the findings of interviews and discussions with tourism policy agencies, it was determined that *the preferred futures of Thailand's tourism after COVID-19 in the long term should be focused on developing more sustainable and equitable tourism. Simultaneously, in the face of growing unpredictability in technology, the economy, society, the environment, and politics, Thailand's tourism strategy should now focus on lowering systemic risks while strengthening robustness and resilience.*

The main idea of Thailand's tourism strategies in the post-COVID period, according to the research team, is to promote the diversification of the country's tourism economy, both in terms of knowledge and innovations that use tourism activities, tourist characters, entrepreneur characters, and tourist areas. Tourist activities may also be utilized as a basis for sustaining and developing other businesses that are unrelated to the tourism sector. In this respect, pluralism, and cosmopolitanism in Thailand's tourist economy, both at the product level and in terms of enterprises and personnel, as well as the manufacturing process, are critical prerequisites for establishing a diverse tourism economy, as well as for growth and adding value to tourism. In these circumstances, Thailand's tourism industry strategy must be based on producing diversity within a pluralistic and cosmopolitan framework.

*4. The tourism strategy of Thailand*

Due to the COVID-19 pandemic, Thailand's tourism faces significant challenges in developing national and city-level policies, particularly in restoring public trust in tourism safety during and after the epidemic. As a result, urgent and short-term strategies to promote safe tourism and improve the image of safe tourism are needed, such as speeding up vaccine distribution, having an efficient tracking system, and so on. These factors are required conditions for the country to be able to drive the tourism economy. Simultaneously, the government must assist in the restoration of tourist companies so that the country can reopen, particularly by speeding up and assisting entrepreneurs in the tourism chain in their recovery.

In terms of a long-term plan aimed at promoting more sustainable and equitable tourism, Thailand has previously been excessively reliant on the monopolistic tourism industry in terms of long-term viability. As a result, in times of crisis, such as the COVID-19 pandemic, there is vulnerability and a systemic danger. As a result, focusing on Thailand's tourism industry is an essential approach. The goal is to diversify the tourism economy so that it is more related to other sectors and less reliant on tourism alone, which includes boosting competitiveness, improving tourism standards, and understanding the major tourist market.

In terms of fairness, it has been discovered that Thailand's tourism is concentrated in the area, and that large-capital entrepreneurs dominate Thailand's tourism. As a result, encouraging responsible and ecologically friendly tourism, fostering community engagement, and establishing a system for a fair distribution of benefits is an essential approach for spreading costs and benefits among the stakeholders involved in the tourist sector.

The following table summarizes Thailand's immediate, medium, and long-term tourism strategies.

| Main strategies | Tactics |
|---|---|
| **Immediate and medium-term strategy** | |
| Strategy for cautiously opening the nation to tourists as soon as feasible (Restart) | 1. Vaccine Distribution and Phuket sandbox<br>2. Screening and Verification<br>3. Small-group tourism promotion<br>4. Brand refresh |
| Strategy to revitalize tourism business (Rehabilitate) | 1. Supporting entrepreneurs<br>2. Developing a system for gathering and analyzing big data for tourist industry<br>3. Creating an online space for sharing opinions<br>4. Generate a complaints channel |
| **Medium and long-term strategy** | |
| Strategies for Thailand's tourism economy restructuring (Restructure) | 1. Diversifying Thailand's tourist economy<br>2. Improving the system's efficiency and production<br>3. Broaden Thailand's tourism brands<br>4. Tourism diplomacy<br>5. Standardization Thailand aspires to be a global tourism leader<br>6. Improving competitiveness after the COVID-19 pandemic |
| Strategy for a more equitable distribution of tourist costs and benefits (Redistribute) | 1. Restoring tourism-affected ecosystems and the environment<br>2. Industry governance<br>3. Decentralization<br>4. Empowering local entrepreneurs and residents |

However, policymakers should be vigilant that there may be more risk factors, threats, or other unanticipated events in the following 20 years. As a result, strategies should be adaptive and flexible. Regular monitoring and assessment are required to be suitable to the scenario, in order to examine plans and adapt to changing conditions in a timely way.

**Part 3: System-based tourist research and development strategy**

System-based tourist research and development strategy is the study's end aim, and it entails a two-step process: 1) Analysis and synthesis of previous tourism research; and 2) Lessons learnt from the aforementioned research and development strategies for short, medium, and long-term Thai tourism.

*1. Tourism research review and synthesis*

A review of statistics and research literature databases on tourism from 2008 to 2019 was conducted to complete the design and planning of this research and development strategy for systematic tourism.

1) Analysis of tourism resource distribution structure from research databases NRIIS NRCT, NIDA E-library, Digital NRTA, TNRR, TAT Library, ThaiLIS, and ThaiJo

2) Review of tourism literature to determine knowledge gaps and research possibilities from documents published in the Thai Journal Citation Index (TCI) database between 2012 and 2019, which comprises up to 2,836 articles. 167 full-text publications were evaluated and synthesized, 243 academic articles directly linked to Thai tourism were included in the Scopus database, and 264 research projects were financed by the National Research Council of Thailand (NRCT) and the Research Fund Office (TRF) between 2012 and 2019. As a result, this study excludes research on enhancing the country's competitiveness conducted by Program Management Unit Competitiveness (PMU C).

This study was conducted to assess the country's knowledge of tourism and the potential of researchers, as measured by the number of researchers and analyses in this work, rather than the evaluation of research or organisations, which may be done using different assessment methods. Studies using Data mining and Bibliometrics discovered the following trends:

1) Graduate student theses have accounted for nearly all of the country's tourism research in the last decade (nearly 80%). Most researchers only publish once, according to this tendency. These data imply that the number of academics who select a research career path is significantly less than the number of graduates. This might be due in part to the fact that tourism is an expanding economic sector that can attract highly educated personnel from academic career.

2) Tourism research has steadily moved from being primarily focused on the researcher's attention to being more policy oriented. This is because the government's focused research funding is headed in that direction. For example, research that reacts to the basic economy's revenue production, resulting in increased community tourism, has grown into a big group study.

3) The research is primarily in the social sciences. The tendency has spread to other fields, but it is still not combining science, technology, and creative science together to produce innovation as it should.

4) Research has begun to shift from case studies or area-specific advances to include more particular "themes" in that field, which is a positive trend.

5) Many of the issued studies are mostly abstracts. Sustainability studies, for example, are more likely to be broad discussions of descriptive concepts and guideline suggestions than practical techniques or guidelines.

6) Few Thai scholars have the ability to publish in top-tier international publications. One explanation for this is that recent research funding has emphasized use rather than publishing patterns. But the trend is encouraging, there were 94 papers published in the study's final two years (2019–2020), compared to just 63 in the preceding seven years. In the final two years, a total of 21 papers was published in Q1 and Q2 journals.

Our study also discovered research gaps in a number of critical areas, including

1) In-depth studies of the tourist sector, including the employment of foreign labor in Thai tourism. A study on the productivity of the Thai tourism industry and the potential for machines to replace workers;

2) A study on the potential risks associated with the tourism industry, as Thailand has the world's highest reliance on foreign tourism revenue;

3) A lack of policy analysis; and

4) A focus on earning possibility and a lack of study of cultural and social problems;

5) A lack of knowledge management research and a lack of systematic dissemination of research findings to private and public systems at various stages.

*2. Research and development strategy of systematic tourism*

When the second COVID-19 epidemic develops at the end of 2020, Thailand will have an opportunity to get vaccinated in the middle of 2021. COVID-19 will undoubtedly continue to affect Thais until at least 2022. The contextual scenario is the baseline future, which will include two tactics and seven plans based on the aforementioned national strategy:

**Tactics 1 Restructure: Strategies for Thailand's tourism economy restructuring**

This tactic restructures the economy's development and increases the standard of Thai tourism to international standards, allowing Thailand to become the world's leading tourism destination. There are five plans in this approach.

1) Plan 1: Adding value and diversifying thailand's tourism economy

2) Plan 2: Enhancing the entire tourism system by promoting innovation, digital efficiency, and other technologies.

3) Plan 3: Improving standards and promoting lifelong learning

4) Plan 4: Conduct research to develop a body of knowledge for a systematic tourism economy in order to restructure the industry following COVID-19.

5) Plan 5: Tourism health and safety promotion plan

**Tactics 2 Redistribute: Expanding and sharing production bases and tourism benefits in a more comprehensive and equitable**

This strategy restructures production to be environmentally conscious while also distributing income fairly and evenly.

6) Plan 6: BCG in Action for Responsible and Sustainable Tourism

7) Plan 7: Public policy program, decentralization, good governance, and fiscal measures

The short- and medium-term strategic plans for tourist research and development that produce value, stability, and sustainability are summarized in the table below.

| Tactics for research and development | Plans |
|---|---|
| 1. Restructure: Strategies for Thailand's tourism economy restructuring | 1. Plan 1: Adding value and diversifying thailand's tourism economy<br>2. Plan 2: Enhancing the entire tourism system by promoting innovation, digital efficiency, and other technologies.<br>3. Plan 3: Improving standards and promoting lifelong learning<br>4. Plan 4: Conduct research to develop a body of knowledge for a systematic tourism economy in order to restructure the industry following COVID-19.<br>5. Plan 5: Tourism health and safety promotion plan |
| 2. Redistribute: Expanding and sharing production bases and tourism benefits in a more comprehensive and equitable | 6. Plan 6: BCG in Action for Responsible and Sustainable Tourism<br>7. Plan 7: Public policy program, decentralization, good governance, and fiscal measures |

Goals, indicators, knowledge, research issues, and potential application of research will all be included in each plan. To summarize, future research must be more responsive, multidisciplinary, and capable of better integrating tourist sectors, creative economy, and foundation economy through digital technology, as well as raising Thai tourism to worldwide standards or being able to set its own world standards. The following is a research route map.

The research route map is shown in Figure 4.

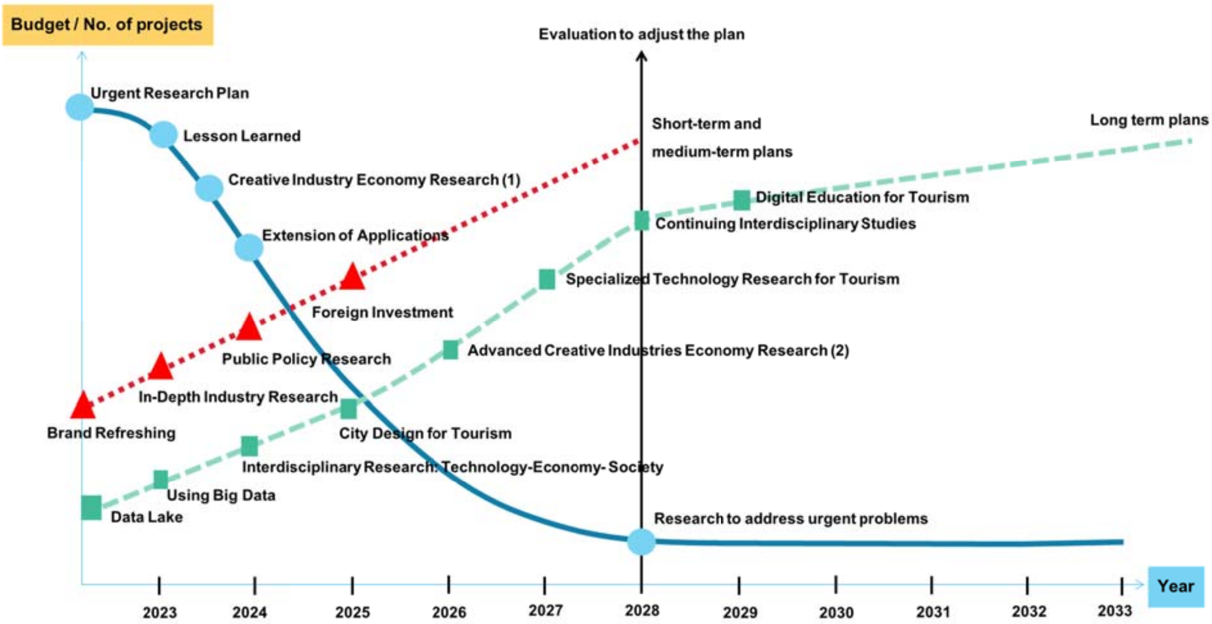


**Figure 4: Research route map**