

Smart Urban Tourism: A Case of Bangkok, Thailand

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Abstract

Purpose: Smart urban tourism is important for tourists nowadays, people rely on technology and the Internet of Things (IoT) which can enhance their experience while traveling. Tourists do not select their destinations just because of the beautiful scenery, and culture; however, they want to gain excitement, interest, and memorable moments by using technology in a particular tourism city. The study aims to learn how smart tourism city provides tourists' convenience, enhance the travel experience, and improve the efficiency of tourism services for both residents and tourists. It also investigates both domestic and international tourists' perspectives of smart tourism in Bangkok of Thailand. **Research design, data and methodology:** The data were collected by utilizing a qualitative method, non-probability purposive sampling, semi-structured interviews. The constant comparison technique with labeling, open and axial coding was used to analyze the data. The result of the research showed that Tourism Authority of Thailand (TAT) launched the Ploen Thai Smart Map application which is the first smart tourism project in Bangkok to build tourists' confidence from the outbreak of Covid-19. However, most tourists never heard about this project before. Moreover, technology is important for people nowadays, people spend time mostly on their smartphones, mobile devices, or the internet and Information and Communication Technology (ICT). The need of using them, especially when traveling, communicating with friends and family, information searching, working. In Bangkok, most tourists have never had used high technology like Virtual Reality (VR) or Artificial Intelligence (AI) because there are few tourism places where have this technology. Therefore, smart urban tourism is significant for the country's development which reaches to attract more tourists to the country by creating their satisfaction from the smart technology.

Keywords: Smart urban Tourism, Bangkok, ICT, Technology

1. Introduction

The term "smart" means technological, economic, and social enhancements with revolutionary ICT based on sensors, data, new methods of connecting and exchanging information (Lee, Hunter, & Chung, 2020). Um and Chung (2021) also states that it means digital, wireless, intelligent, etc. Information and Communication Technology (ICT) is the key to thinking and developing smart tourism. ICT provides an opportunity to design smart tourist attractions. For smart tourism destinations, ICT plays a significant role to attract and facilitate tourists. Smart destinations can combine various technologies to enhance travel experiences. Tourists

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do not choose their destinations just because of the statues, good scenery, culture, or gastronomy. All these matters; however, today's tourists want to be surprised by unknown attractions and need information on what to do, and how to travel by utilizing technology (Liberato, Alen, & Liberato, 2018). The Internet of Things (IoT) is a platform that can promote smart destinations. IoT technologies have important abilities to provide travelers with real-time interactions and information. IoT can be used to create smart destinations (Gretzel, Sigala, Xiang, & Koo, 2015). The availability of many smart devices, sensors, and advanced technologies like the IoT, big data, and AI help to take action on various issues in the city's real-time (Dabeedooal, Dindoyal, Allam, & Jones, 2019). Therefore, these

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technologies are important in enhancing transportation and communication infrastructure, as well as improving people's security and safety, making it possible to link various services and to update the status of the city in improving sustainability and livability. For example, TAT has a plan to create information and operate a system of Smart Map Platform on a smartphone that users can access information conveniently to enhance tourism safety and build confidence for tourists after Covid-19 (Tourism Authority of Thailand, 2020). Smart city infrastructures have also started to impact tourism behavior due to tourists' use and advantages from the city services as well (Jin, Gubbi, Marusic, & Palaniswami, 2014). To promote tourism development, smart urban tourism needs resource databases, physical infrastructure and technology. Smart tourism cities can lead to more sustainable management in the future. Technology is the smart solution that is significant now and will be more important in future tourism.

This research would conduct to learn how smart tourism cities provide tourists' convenience, enhance the travel experience, and improve the efficiency of tourism services for both residents and tourists. Moreover, it investigates both domestic and international tourists' perspectives of smart tourism in Bangkok of Thailand.

2. Literature Review

The linkage between them is that smart tourism is an important part of smart cities (Jasrotia & Gangotia, 2018). Smart tourist destinations are smart cities that use information technology and innovation to create happiness and experiences for tourists. Smart cities involve applying sustainable solutions to deal with difficult issues, and it involves the utilization of complex and expensive technologies developed by the private sector. Although the goal of smart cities is to increase people's quality of life, it is also important to focus on tourism due to the main source of income for many cities (Jasrotia, 2018 as cited in Jasrotia & Gangotia, 2018).

In terms of smart cities, are sustainable, convenient, and livable cities. Smart cities take advantage of new opportunities, such as the growth of information and communication technology (ICT) innovations. Smart cities show the challenges of the future which is a city model in which technology serves people, as well as improves the economic and social quality of life (Um & Chung, 2021). Smart tourism cities are destinations built on technological infrastructure that assures sustainable tourism enhancement, reach globally, and facilitate interaction with tourists, as well as enhance the quality of the destination experience and improve the quality of life of citizens (Liberato, Alen, & Liberato, 2018). Smart tourism can not only make the most of tourism resources, but also manage

tourism cities, maintain tourist destinations, and improve the quality of life and communication between tourists and residents (Um & Chung, 2021). In terms of smart urban tourism, it can be defined as destinations where use existing technology to create value, pleasure and experiences for tourists. Smart tourist cities are defined as innovative tourist destinations where ensure sustainable development that facilitates and improves tourist interaction with the experience at the destination and ultimately improve the quality of life of residents (Lee, Hunter, & Chung, 2020). The definition of a smart destination is a place where technology and tools are available to enable supply and demand together to create value, happiness, and experience for tourists, as well as to make wealth, profits, to organizations and destinations (Lalicic & Önder, 2018).

Information and Communication Technology (ICT) on Smart Tourism

Information and communication technology (ICT) is a core of smartness. In terms of cities, this means trying to use technology in an innovative way to achieve resource optimization, efficiency, sustainability, and quality of life. Cities became complex, highly competitive, requiring coordination of ICT-based activities and services. ICT can assist cities more accessible and attractive for both residents and visitors by contributing to the development of interactive services that connect local organizations, allowing users to quickly access services and information (Liberato, Alen, & Liberato, 2018). Smart urban tourism is not only overcome city problems, but also provides residents with a better quality of life (Lee, Hunter, & Chung, 2020). Thus, this concept applies to destinations where technology influences the travel experience, increase the competitiveness of the cities and promote tourism development plans. Concerning smart tourism destinations, ICT plays an important role in attracting and accommodating tourists. Internet of Things (IoT) technologies have important capabilities to provide travelers with real-time interaction and information which can use to create a smart urban destination (Rotchanakitumnuai, 2017). Moreover, especially in the time of the global spread of the COVID-19 pandemic, with offline activities and tourism affected by home quarantine orders, thus, smart tourism has the potential to meet this challenge by creating smart travel products that leverage augmented reality (AR), virtual reality (VR) services (Lee, Hunter, & Chung, 2020). Besides, Open data is information that everyone can freely access and use, also is provided by the government. The aim of the open data initiative emphasizes co-creating digital services (applications) produced by residents or the government to improve their quality of life, but it also encourages the participation of residents in the development step to make their cities better (Lalicic & Önder, 2018).

Tourists Satisfaction on Smart Urban Tourism

Rotchanakitumnuai (2017) stated that in terms of the tourism industry, traveler behaviors are shifting from merely planning their trips to an integrated experience using journey information through websites and social media channels. A city must ensure that visitors are fully satisfied with the services offered at their destinations, and smart travel is fully equipped with the features of smart travel technology. In addition, smart tourism should provide higher service satisfaction by supporting destination services (Um & Chung, 2021). In this sense, smart tourism should directly increase the overall satisfaction of smart urban tourism on its own. According to Liberato, Alen, and Liberato (2018), the tourist destination must become the place of experiences, emotions, and smart destinations.

3. Research Methods and Materials

A qualitative method with the semi-structured interview was used for this research. The target population for this research was informants with expertise, as well as tourists who already have experience of using smart technologies or tools while traveling in Bangkok. The sample size was ten respondents, nine domestic and international tourists who travel around Bangkok city and a Deputy Governor for Policy and Planning who work at the Tourism Authority of Thailand in Bangkok. Non-probability purposive sampling was employed to choose respondents based on comprehending the topic being researched. The sampling framework was Bangkok, Thailand because Bangkok is the biggest city where have more development and transformative of smart tourism.

The checklist questions for the interview are based on research questions and research objectives, as well as literature reviews that related to smart tourism cities or destinations. The data were collected between October 20, 2021, and October 27, 2021. The interviews were conducted in Thai and English because the respondents are Thai employees who work in the Tourism Authority of Thailand (TAT) in Bangkok and both domestic and international tourists who travel in Bangkok areas and use smart tourism technologies. Additionally, the constant comparison technique with labelling, open and axial coding was used to analyse the data.

4. Results and Discussion

TAT and tourists' knowledge about smart cities and smart tourism

About interview TAT, the benefits of smart city and smart tourism in Bangkok are the efficiencies of city services and management will increase, also it can provide citizens and tourists' better quality of life with lead to traveling with confidence when using innovative technology. Moreover, smart city and smart tourism can improve tourists' quality of life by providing clear information for living/traveling through TAT applications and platforms which is Ploen Thai platforms. This application provides important information on tourist attractions, transportation routes, what to do or what should not do to help tourists to gain more confidence and safety in traveling to many destinations in Bangkok during and after the Covid-19 pandemic. In addition, the TAT representative stated that smart tourism and the smart city can help to attract more tourists by providing or developing useful, quick, and easy applications of public services for tourists which may result in WOM because they can get memorable traveling experiences while using such applications in Thailand. Besides, the smart tourism platform of TAT that they use the most is the Ploen Thai Smart Map platform which is a Thailand smart tourism project that was a launch for creating tourists' confidence from the Covid-19 pandemic; however, there are various tourism applications that they use out of TAT platforms, such as Traveloka, Klook, Agoda, Trip Advisor, Rent Connected and Google map.

Concerning interview tourists, most of them said similarly that smart city and smart tourism benefits in Bangkok are providing convenient life, and some of them said that it can attract more tourists, enrich the travel experience, control the spread of disease by using technology because they can find travel information by themselves on their smartphone. Moreover, it can provide travel convenience, accessibility which is using travel applications on mobile devices, and network connection. It also can help for online marketing because people rely on social media platforms nowadays. Also, smart cities and smart tourism can improve tourists' quality of life and make them more convenient by technological improvements like 5G and digital transportation which refers to an advanced application, as well as advanced travel technology, travel applications are what tourists require when they travel. Besides, smart tourism and the smart city can help to attract more tourists by the development of public services which are what they desired. It is not easy to use public transportation in Thailand because they need to buy different tickets for different kinds of transportation. Tourism technology is also important for attracting tourists like travel digital platforms or touchless technology, and technological innovation can make life easier, as well as provide convenience and safety of life. Most tourists never use or heard about TAT platforms or

applications, especially international tourists, but there is one of them who has used the We Travel Together application. Thus, TAT and tourists know and understand smart cities and smart tourism. TAT created an application which is the Ploen Thai Smart Map platform to build confidence and safety for tourists while traveling in Bangkok. On the other hand, most tourists do not know about this TAT project.

Smart tourism projects of TAT that provide tourists' convenience

Concerning interview TAT, Ploen Thai Smart Map is only the smart tourism project undertaken by TAT; however, there are other various projects of TAT that they have done and are doing for tourists which may not be related to smart tourism. Moreover, an inspiration of TAT to initiate smart tourism projects in Bangkok is the Covid-19 outbreak because tourist behavior has changed, they concern more about hygiene and safety. This project displays various information like sanitary measures, details of tourist attractions, hotels, restaurants, and shops, tourist route information to build tourist confidence. TAT adopted Ploen Thai as a new smart tourism technology for tourists to support travel, build confidence in travel hygiene that leads to providing tourists' convenience while this application in Bangkok.

According to this project, there are both positive and negative impacts of utilizing the "Ploen Thai" platform. For positive impact, it can create a new image and perspective to tourism, also more confidence in traveling. Nevertheless, it also can create negative impacts if they spend too much time on this technology because Ploen Thai is an application on the smartphone that users can access information conveniently. In consequence, the negative impacts that can occur are exploiting too much information, losing the conversation, and losing the experience of the local way of life. To measure tourist experiences on providing more convenience to Ploen Thai project brought by smart tourism, TAT's project implementation created and provided a form or e-form to assess the satisfaction of tourists, to listen to their opinions to improve various projects better and to be more efficient in the future. Therefore, Ploen Thai Smart Map is only the smart tourism project of TAT to provide tourists' convenience when traveling in Bangkok during and after the outbreak of Covid-19.

Information and Communication Technology (ICT) of smart tourism enhance travel experience in Bangkok, Thailand

Regarding interview tourists, most tourists understand and know what is smart tourism, in

which smart tourism is about new or high technology, and digital tourism city to make their life easier to travel and access information on the internet and electronic devices. It is also about innovative technology, such as an audio guide at each tourist attraction like museums. This is an example that they have an experience during their trip to another country. Also, most respondents answered similarly that they use Google Maps for finding the best route to tourist destinations in real-time traffic information, as well as using Agoda, TripAdvisor, Booking.com for planning and booking a trip. Moreover, using QR codes for indoor mapping during traveling in the shopping mall. Some of them said that they use Facebook, Instagram, Twitter are what some tourists use the most and there is one tourist who does not use any applications when traveling. In addition, mostly tourists use social media and smartphones for information searching like searching for travel activities and attractions. Also, they use them for online travel booking, photo sharing, GPS, as well as for relaxing when traveling in the long-distance which they will not get bored, for instance, Netflix and Joox music. Lastly, tourists feel the need to use the Information and Communication Technology (ICT) of smart tourism because it can enhance the travel experience in Bangkok, Thailand, especially when traveling, communicating with friends and family, information searching, working. Some people need to spend time on ICT the whole time, and some are using it sometimes. As a result, it truly shows that smart tourism is an important technology for tourists which directly related to ICT.

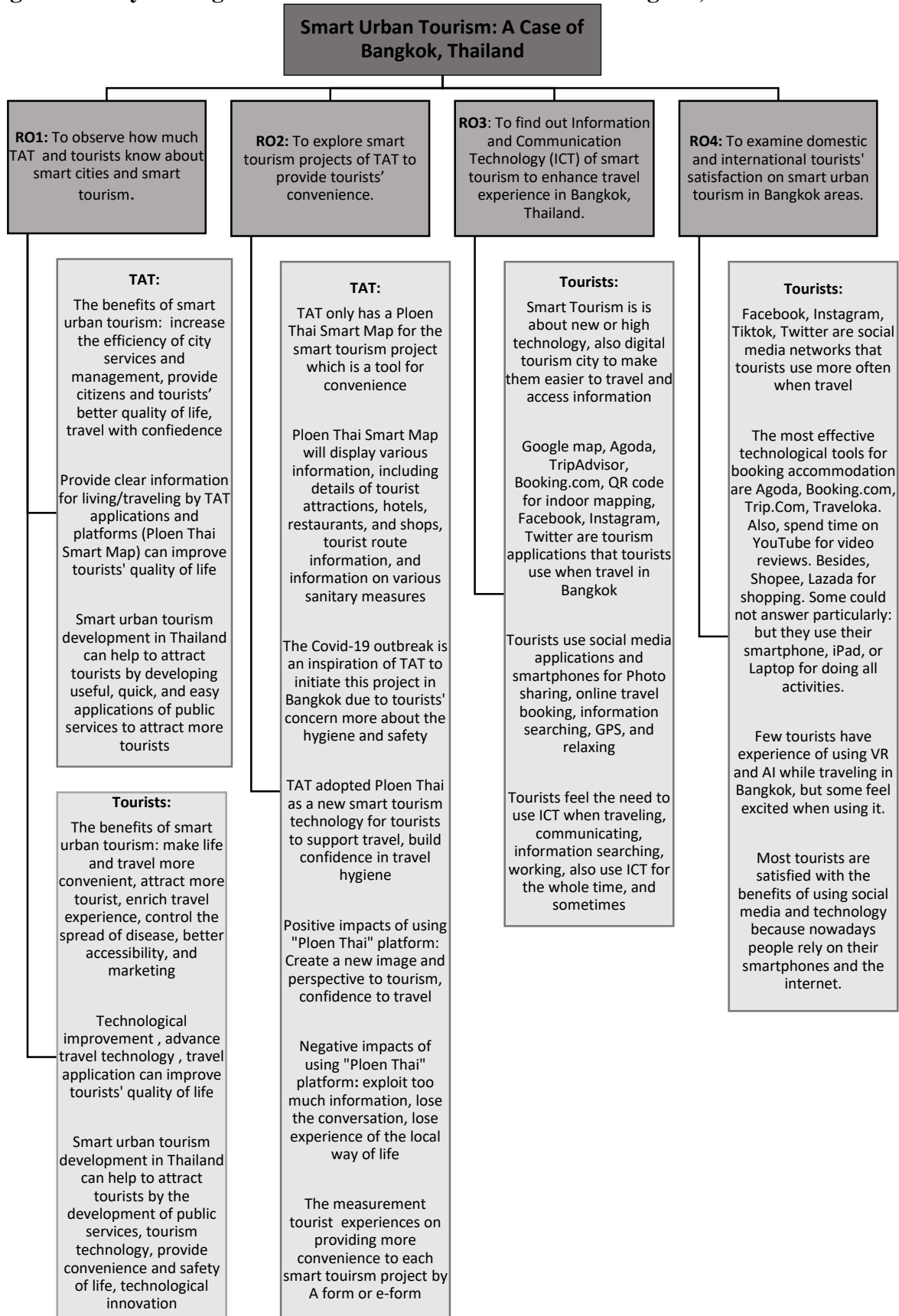
Domestic and international tourists' satisfaction with smart urban tourism in Bangkok

About interviewing tourists, most tourists spend time on Facebook, Instagram to see pictures of places to visit, to search for famous tourism pages which have various hotel and restaurant promotions. These social media networks will show that information in the hashtag and find the nearest areas, also they use both to share photos. In addition, some are spending time on Tiktok, and Twitter. Most tourists are satisfied with the benefits of using social media because they are happy with the hotels, restaurants, and tourist destination promotions that they search on each application, as well as they can post their photos or pictures, and videos post to keep their memories when they are on vacation. Besides, most tourists answer similarly that the most effective technological tools for booking accommodation are Agoda, Booking.com, Trip.Com, Traveloka. Each application is not only used for booking accommodations, but it also can use for booking everything like flights, activities, and attractions, as well as searching for reviews of restaurants, hotels,

and tourist destinations. Some travelers spend time on YouTube for video reviews, in addition, they use Shopee, Lazada for shopping. Some people could not answer particularly: however; they use their smartphone, iPad, or Laptop for doing all activities. Additionally, mostly both domestic and international tourists never and ever had the experience of using VR and AI. There is one international tourist who had the experience of using robots which electric train drive itself, not drivers in South Africa but never had in Bangkok. One tourist had played a VR game in Dreamworld Park, Bangkok. Consequently, it shows that tourists'

satisfaction occurs and increases with technology and social media because nowadays people rely on their smartphones and they are excited with new, high, innovative, and advanced technology which is the definition of smart urban tourism. On the other hand, it may not see clearly about domestic and international tourists' satisfaction with smart urban tourism in Bangkok areas because most tourists have only experience of using some social media and some technological tools, and fewer tourists have experience of high technology like Artificial Intelligence (AI) and Virtual Reality (VR).

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Figure 1.1 Key findings for smart urban tourism: a case of Bangkok, Thailand

5. Conclusion

In summary, smart urban tourism is essential for tourists in the present because people rely on technology and the Internet of Things (IoT) which can enhance their experience while traveling. Tourists do not select their destinations just because of the beautiful scenery, and culture; however, they want to gain excited, interested, and memorable moments by using technology in a particular tourism city. Smart urban tourism is not only assisting for travel experience creation through Information and Communication Technology (ICT), but it also the smart strategy to help for the enhancement of the public services, the development of country structure, and the improvement of people's safety and security which result to attract more tourists to the country, to create tourists' satisfaction and to provide the convenience of life or better quality of life for both residents and tourists. Thus, TAT launched the Ploen Thai Smart Map platform application which is the first smart tourism project in Bangkok to build tourists' confidence from the outbreak of Covid-19 to provide tourists; convenience and safety. However, most tourists never heard about this project before. Moreover, all respondent perspectives are the same that technology is important for people nowadays, people spend time mostly on their smartphones, mobile devices, or the internet and ICT (social media channels, applications, technological tools). They feel the need of using it, especially when traveling, communicating with friends and family, information searching, working. Some people need to spend time on ICT the whole time, and some are using it sometimes. In Bangkok, most tourists have never had using high technology like VR or AI because there are few tourist places where this technology have. Therefore, smart urban tourism is significant for the country's development which reaches to attract more tourists to the country by creating their satisfaction from the smart technology.

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