

Development Of Information System For Management Of Health Tourism To Enhance The Economic Community In Ranong Province, Thailand

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Abstract

The objectives of this study were to: 1) to study the problems and requirements related to information systems for management for health tourism in Ranong province. 2) to develop an information system for health tourism management in Ranong province, and 3) study the factors affecting the adoption of information systems for health tourism management in Ranong province.

This research is a mixed research method. The requirement was gathered 5 health tourism entrepreneurs and 25 tourists for a total

of 30 people by interview. The results from the interviews were used to develop an information system for health tourism management. After that, a study on study the factors affecting the adoption of information systems for health tourism management was conducted using a questionnaire as the research instrument to collect data from 385 tourists. The inferential statistical analysis that was the multiple regression.

The research findings reveal that the operators still lack information systems or technologies related to health tourism management. There is a need for an application to be used for promoting health tourism in Ranong province. Based on these findings, The researchers developed an information system and tested its acceptance. The results of the study of factors affecting the adoption of information systems for health tourism management found that there are 4 independent variables: The most predictable variables are Attitude Towards Use, followed by Perceived Usefulness, Behavioural Intention to use, and Perceived Ease of Use respectively. The study produced an innovative information system for managing health tourism and expanding the set of knowledge and concepts on the technology acceptance model. The findings of this study can serve as a valuable resource for devising strategic plans to enhance Health Tourism Management

Keywords—Information System, Management, Health Tourism, Enhance, Economic Community, Ranong Province.

INTRODUCTION

In recent years, there has been a significant rise in the popularity and importance of health, wellness, and medical tourism in various destinations. This type of tourism involves activities aimed at improving physical, mental, and/or spiritual health through medical treatments and wellness-focused experiences. As a rapidly growing and evolving sector, it is crucial for destinations to gain a better understanding of health tourism in order to capitalize on its opportunities and address its challenges (The World Tourism Organization (UNWTO), 2019). The country is leading in terms of health tourism are Australia 39% follow by Thailand 38% Indonesia 32% New Zealand 24% Costa Rica and India 20% USA 14% Germany and Scandinavia 11% Japan, Mexico and Vietnam - 7% (Global Wellness Institute, 2022).

From the situation of the epidemic of COVID-19, although it affects the implementation of government policies related to revenue generation from tourism but the Thai government by the Department of Health Service Support the Ministry of Public Health has not stopped the development that will lead to increasing competitiveness in health services. which is the strength of Thailand. Health tourism, which is a good income tourism with high quality and the development of a

comprehensive medical industry according to the Thailand 4.0 policy, where the country has a policy of Medical Hub under the concept of "Healthcare Capital of the World" and key messages are "Beyond Healthcare, Trust Thailand" to build confidence in returning to use medical services in Thailand, including the preparation of special online shopping packages, emphasizing on herbal and OTOP products (Department of Health Service Support, 2021).

Ranong Province, a city in Thailand, holds great potential as a tourist destination, especially in the field of health tourism. Every year, numerous tourists visit Ranong to avail themselves of health services. Additionally, Ranong has emerged as a thriving market for health tourism, capable of making significant contributions to this sector. The significance of Ranong as a tourism hub is also emphasized in relevant literature (Sannok. R., Mekhum. W., & Sittisom. W., 2020). From the study, it was found that health tourism Ranong province in Thailand lack of cooperation from stakeholders. Entrepreneurs still lack information systems or technologies related to health tourism management services. There is a need for an application to promote health tourism of Ranong Province.

From the importance, problem conditions and needs above The researcher is therefore interested in doing research on Development of Information System for Management of Health Tourism to Enhance the Economic Community in Ranong Province For benefit the management of medical tourism effectively. Tourism entrepreneur have implemented a sophisticated information system to ensure the efficient management of health tourism. Visitors can effortlessly and promptly explore the myriad attractions of health tourism in Ranong. Government agencies can utilize this information to formulate well-informed policies and strategies aimed at the effective management of Health Tourism destinations.

LITERATURE REVIEW

1. Health Tourism

In recent years, the significance of health, wellness, and medical tourism has experienced significant growth, making it increasingly relevant in numerous destinations. Health tourism encompasses various forms of tourism where the primary motivation is to enhance physical, mental, and/or spiritual well-being through medical and wellness-focused activities. As an emerging, global, intricate, and dynamic sector, it is essential for destinations to gain a deeper understanding of health tourism in order to capitalize on opportunities and effectively tackle challenges (The World Tourism Organization: UNWTO, 2019).

In Thailand, since 2004, Thailand has established policies to position itself as a leading destination for Medical Hub and Health Hub. In line with this,

the country has devised a comprehensive strategy known as the International Health Center (2016-2025) to further enhance its healthcare sector. Additionally, in 2017, the Ministry of Tourism and Sports prioritized the development of Thailand as a tourism hub within the ASEAN region. Notably, Health Tourism plays a pivotal role in the nation's overall development plan. Health tourism is a form of tourism that emphasizes rehabilitation, prevention of illness, and the improvement of physical health. Its primary goal is to promote a higher quality of life and enhance overall well-being. (Institute of Intellectual Property of Chulalongkorn University (2017).

Based on the study of Health Tourism, it can be concluded that Health Tourism refers to traveling to natural and cultural destinations for the purpose of relaxation and learning methods to maintain physical and mental well-being. It provides enjoyment, tranquillity, and knowledge regarding health preservation and a better quality of life. The primary objective is to promote health, rehabilitation, and rejuvenation, combining both physical and mental aspects in a holistic approach.

2. Rapid Application Development Model

The Rapid Application Development Model (RAD) is a software development model that emphasizes rapid development and construction of system components. It employs methods that prioritize the importance of creating the initial version of the software and utilizes testing and continuous improvement to enhance efficiency and completeness of the system. RAD model is an agile software development approach that emphasizes prototyping and rapid feedback, with less emphasis on extensive planning. Unlike traditional development methods, RAD focuses on quickly developing and refining prototypes rather than detailed planning. This allows developers to iterate and update the software rapidly, without having to start from scratch. By adopting RAD, the development process becomes more iterative and allows for frequent improvements, resulting in a higher quality software that meets the specific requirements of the end users (Kissflow, 2023). The four key steps involved in Rapid Application Development (RAD) as follow:

2.1 Requirements Definition: In RAD, the focus is on capturing broad requirements rather than detailed specifications. Instead of gathering a comprehensive list of specifications from end users, the initial stage involves obtaining a high-level understanding of the requirements. This allows for flexibility and the ability to segment specific requirements throughout the development cycle.

2.2 Prototyping: The prototyping stage is where the actual development occurs. Developers rapidly create prototypes with various features and functions. These prototypes are then presented to clients for feedback, enabling them to identify their preferences and dislikes. Prototypes often prioritize key features and may not represent the final product. The final

product is typically developed during the finalization stage, where alignment between the client and developer is achieved.

2.3 Construction: The construction stage is critical as it involves transforming the working prototype into a fully functioning system. Engineers and developers diligently work on refining the prototype based on feedback and reviews. This stage is often lengthy, especially when clients change directions or provide extensive feedback. Bugs, issues, and alterations are addressed during this stage.

2.4 Deployment: The final stage of RAD focuses on deploying the developed system into a live production environment. It includes comprehensive scale testing, technical documentation, issue tracking, final customizations, and system simulation. Teams dedicate time to debugging the application, performing final updates and maintenance tasks, and ensuring the system is ready for launch.

The researcher reviewed the literature on Rapid Application Development Model to develop an Information System for Health Tourism Management.

3. Factors affecting the adoption of Technology

The study focuses on examining the theories, concepts, and factors that influence the Factors affecting the adoption of Teratology. This knowledge is crucial for Information System for Health Tourism developers as it enables them to comprehend user behaviours and preferences when it comes to accepting and utilizing this information system. By gaining a deep understanding of user needs, developers can effectively tailor the functionality of their Information System. To accomplish this, the researcher conducted a comprehensive literature review, analysing and synthesizing relevant documents, concepts, theories, and research findings from both domestic and international sources. The identified factors, which serve as variables in the research, can be summarized as table 1:

Table 1: Factors affecting the adoption of Technology

Factors affecting the adoption of Technology	Reference
1. Perceived Ease of Use , it refers to the ease of using technology or applications. Users do not need to exert significant effort, as the technology is not overly complex and can be used independently.	David (1989); Davis, Bangozzi, & Warshaw (1989); Venkatesh & Bala (2008); Venkatesh, Thong, & Xu (2012; Mankijjakan (2017); Alsswey et al. (2018)
2. Perceived Usefulness , it pertains to individuals' perception and belief that using technology can result in advantages	David (1989); Davis,Bangozzi, & Warshaw (1989); Venkatesh & Bala (2008); Chen & Shou

Factors affecting the adoption of Technology	Reference
and increased efficiency in their work. It helps enhance productivity, accelerates tasks, provides comprehensive information, streamlines processes, and reduces errors.	Chan (2014); Wanga & Sun (2016); Ma et al. (2016); Alsswey et al. (2018)
3. Attitude Towards Use, an individual's overall feelings towards using technology, whether in the workplace or daily life. It is an internal factor that influences decision-making based on beliefs about the outcomes of behavioural actions. A positive attitude implies acceptance and utilization of technology, whereas a negative attitude leads to resistance or reluctance to embrace and use technology.	Ajzen & Fishbein (1980); Ajzen (1991); Davis, Bagozzi, & Warshaw (1989); David (1989); Chen & Shou Chan (2014); Wanga & Sun (2016) ; Ma et al. (2016); Alsswey et al. (2018)
4. Behavioural Intention to Use, refers to the conscious decision and conviction of an individual to choose or engage in a specific behaviour over others. It is a deliberate choice driven by a firm mental direction and aligned with personal desires. The intention to exhibit certain behaviour persists until appropriate circumstances and timing arise for the individual to demonstrate the behaviour connected to the initial intention.	David (1989); Davis,Bagozzi, & Warshaw (1989); Venkatesh & Bala (2008); Venkatesh, Thong, & Xu (2012); Wanga & Sun (2016); Ma et al. (2016); Mankijjakan (2017); Alsswey et al. (2018)
5. Technology acceptance represents the behaviour and intention of individuals to adopt and recognize the significance of technology in terms of benefits, ease of use, positive attitudes, social influence, perceived efficacy, convenience, awareness, interest, evaluation, trial, and eventual acceptance for real-world applications in work or daily life.	Ajzen & Fishbein (1980); Ajzen(1991); David (1989);; Davis, Bagozzi, & Warshaw (1989); Venkatesh & Bala (2008); Venkatesh, Thong, & Xu (2012); Chen & Shou Chan (2014);

In addition, the researcher compiled the technology acceptance theory to develop a conceptual framework.

3. Rang Province, In Thailand.

Ranong province is situated along the maritime border with the Republic of the Union of Myanmar, earning it the nickname "City of 8-month rain and 4-month sun." This climatic pattern results in 8 months of rainy weather and only 4 months of summer. Consequently, Ranong boasts abundant resources, including high-quality hot mineral water sourced from its forests, as well as the diverse mangrove forests along the coast, which have been recognized as a UNESCO biosphere reserve. Additionally, the province is home to several breathtaking islands such as Muko Kam, Ko Chang, and Ko Phayam. Ranong is characterized by its multicultural population, with Chinese, Muslim, and Burmese communities coexisting peacefully for an extended period of time. (Tourism Authority of Thailand, 2020). Ranong, a province in Thailand, possesses significant potential in the tourism industry. It attracts numerous tourists annually who visit for various tourism purposes. Ranong offers diverse types of tourism, such as natural, religious, health, cultural, and historical tourism. The province is considered a key player in Thailand's tourism sector, as its tourism performance has a significant impact on the overall industry. Several studies have emphasized the importance of Ranong's tourism sector (Sannok. R., Mekhum. W., & Sittisom. W., 2020).

OBJECTIVE

1. To study the problems and requirements related to information systems for management for health tourism in Ranong province.
2. To develop an information system for management health tourism in Ranong province.
3. To examine the factors influencing the acceptance of information systems for management of health tourism in Ranong province.

HYPOTESIS

H: 1 Perceived Ease of Use affecting the adoption of information systems for Health Tourism management.

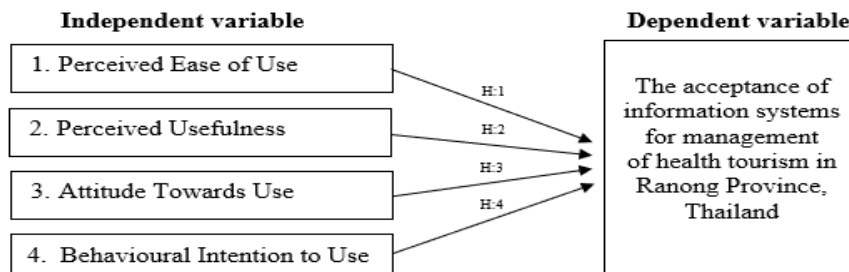
H2: Perceived Usefulness affecting the adoption of information systems for Health Tourism management.

H3: Attitude Towards Use affecting the adoption of information systems for Health Tourism management.

H4: 4 Behavioural Intention to Use affecting the adoption of information systems for Health Tourism management.

RESEARCH FRAMEWORK

Figure 1. Research framework



Soruce: Modified from David, F., Bangozzi, R. P., and Warshaw, P. R. (1989)

RESEARCH METHODOLOGY

This research is a mixed research method.

1. In the qualitative research phase, the researchers gathered data regarding the issues and requirements pertaining to Information Systems for Health Tourism in Ranong Province. This was accomplished through interviews conducted with a total of 30 individuals, including 5 tourism entrepreneurs and 25 tourists. The data obtained from these interviews was subsequently utilized to develop a comprehensive Information System Management for Health Tourism.

2. A study the factors affecting the adoption of Information Systems for Health Tourism Management was conducted using a questionnaire as the research instrument to collect data from 385 tourists (Cochran, W., 1997). The inferential statistical analysis that was the multiple regression.

RESEARCH TOOLS

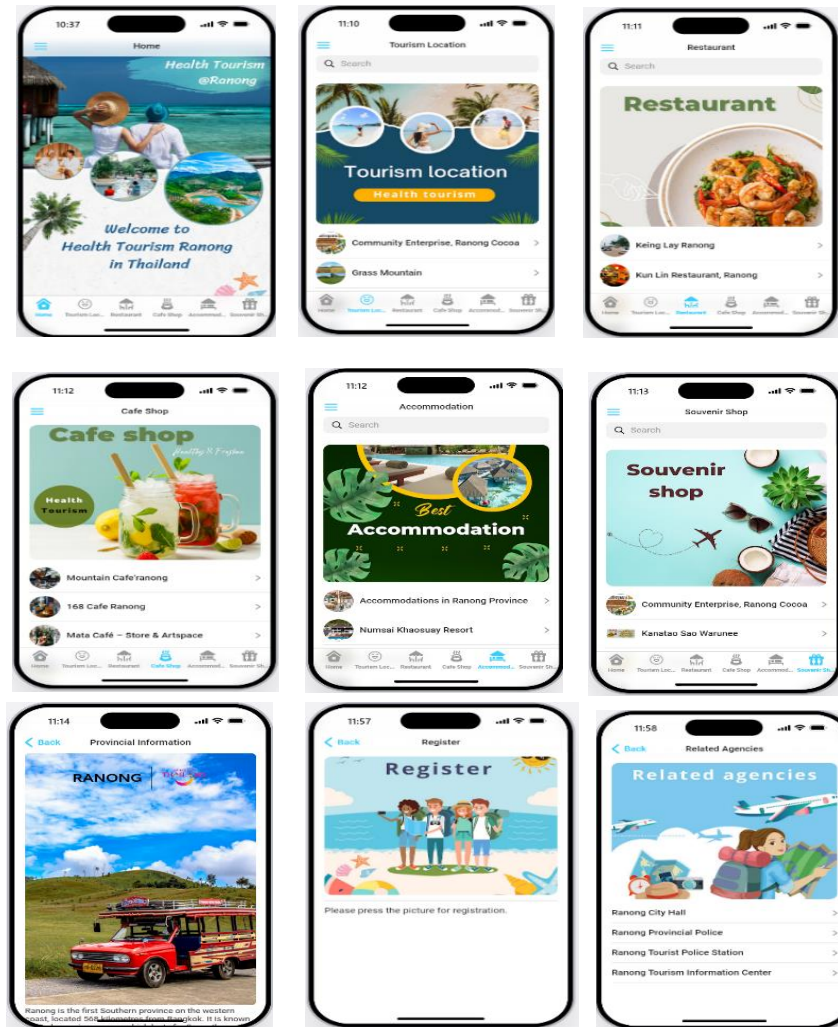
The research tool is a questionnaire. The questionnaire examination results indicated that the overall score was 0.949. When considering individual aspects, the confidence values ranged from 0.710 to 0.935, which is higher than the threshold of 0.700 (Vanichbuncha, K., 2016). Therefore, it can be concluded that the results meet the criteria.

RESULTS

The research findings reveal that in the requirement was gathered 5 health tourism entrepreneurs and 25 tourists for a total of 30 people by interview still lack information systems or technologies related to Health Tourism management. There is a need for an application to be used for

promoting Health Tourism in Ranong Province, Thailand. Based on these findings, the researchers develop an Information System for Health Tourism Management in Ranong Province as show in picture 2:

Figure 2. An Information System for Health Tourism Management in Ranong province, Thailand



From Figure 2, The research show that an information system for Health Tourism management in Ranong province, Thailand consists: Home, Tourism location, Restaurant, Café shop, Accommodation, Souvenir shop, information of Ranong, Register, and Related agencies.

The research findings indicate that the majority of tourists are females, with a total of 208 individuals, accounting for 54.03 percent. Most of them fall into the age range of 31-40 years, comprising 118 people, which is approximately 30.65 percent. Furthermore, there are 183 individuals, equivalent to 47.53 percent, who possess a bachelor's degree.

Additionally, 182 individuals, accounting for 47.27 percent, are employed by private companies or are employees. As for the monthly income, 98 people, approximately 25.45 percent, earn between 30,001 and 40,000 baht.

The results of level of opinions. The overall level of opinions indicates a high level, with an average of 4.18. When examining each aspect individually, it is evident that opinions remain consistently high across all aspects. The aspect that received the highest rating was the Perceived Ease of use, with a mean score of 4.20. This was closely followed by the Perceived Usefulness, which obtained a mean score of 4.17. On the other hand, the Attitude Towards Use and 4Behavioural Intention to Use received the lowest mean score of 4.17.

The results of the study of factors affecting the adoption of information systems for Health Tourism management Ranong province found that show in table 1:

Table 2: The results of the study of factors affecting the adoption of information systems for Health Tourism management Ranong province

Factors	Unstandardized Coefficients		Standardized Coefficients	t	p-value
	B	Std. Error	Beta		
(Constant)	0.335	0.211		1.585	.114
X1: Perceived Ease of Use	0.308	0.093	0.277	3.318	.001*
X2: Perceived Usefulness	0.441	0.08	0.350	5.488	.000*
X3: Attitude Towards Use	0.418	0.075	0.405	5.541	.000*
X4: Behavioral Intention to Use	0.359	0.072	0.294	4.958	.000*
R = .703 R ² = 0.495 Adjusted R ² = 0.489 SE= 0.300					

From table 2: The results of the study of factors affecting the adoption of information systems for Health Tourism management Ranong province found that the affect between the dependent variable and every independent variable, it was found that the value Adjusted R²=0.489, There are 4 independent variables are Perceived Ease of Use, Perceived Usefulness, Attitude Towards Use, and 4Behavioural Intention to Use affecting the adoption of information systems for Health Tourism management Ranong province can explain 48.9 %

The results show that there are 4 independent variables: The most predictable variables are Attitude Towards Use (Beta = 0.405, p-value = .000), followed by Perceived Usefulness (Beta = 0.350, p-value = .000), 4Behavioural Intention to Use (Beta = 0.294, p-value = .001), and Perceived Ease of Use (Beta = 0.277, p-value = .000), respectively, can be written as the equation Regression can be as follows.

$$= 0.277(X1) + 0.350(X2) + 0.405(X3) + 0.294(X4)$$

DISCUSSION

The results show that an information system for Health Tourism management in Ranong province to enhance the Economic Community in Ranong Province, Thailand. The hypothesis test show that there are 4 independent variables: The most predictable variables are Attitude Towards Use, followed by Perceived Usefulness, Behavioural Intention to Use, and Perceived Ease of Use. The researchers discussed the results as follows:

1. Attitude Towards Use that affecting the adoption of information systems for Health Tourism management in Ranong province because the attitude is the feeling of tourists towards the use of information systems through applications. The positive attitude is a factor that will lead to behavioural changes in using the application. Conversely, if there is a negative attitude, such a change will not occur (Vicente, P., & Lopes, I., 2016); Koul, S., & Eydgah, A., 2017).
2. Perceived Usefulness that affecting the adoption of information systems for Health Tourism management in Ranong province because the increasing accessibility of various technologies, most travellers can now access and utilize them independently. They realize the benefits of using mobile phones, portable computers, and applications for travel purposes (Tanhan, P., 2016). Therefore, when they become aware of or have the opportunity to experiment with travel applications and witness the benefits they offer, such as solving problems or meeting specific needs, facilitating communication, and providing convenience in searching for tourist destinations, restaurants, accommodations, souvenir shops, and others. As travellers recognize these advantages, they are more likely to accept and use travel applications.
3. Behavioural Intention to Use that affecting the adoption of information systems for Health Tourism management in Ranong province because this the influence stems from an individual's attitude towards using the technology. If tourists have the intention and make efforts to use the system, and are able to bring about behavioural actions, it is when individuals carefully consider the outcomes that may occur. This results in continuous acceptance and usage, demonstrating the tourist's commitment and persistent efforts to utilize the technology or innovation.
4. Perceived Ease of Use that affecting the adoption of information systems for Health Tourism management in Ranong province because travellers have realized that using technology is easy and does not require much effort. They have a need for user-friendly applications that are easy to understand and learn how to use independently. The functions of these

applications are categorized and designed to be appropriate, allowing them to be accessed through electronic devices such as smartphones or tablets, in line with Davis's (1989) concept, it is consistent with the idea that when travellers use applications, it leads to an awareness of the benefits. Upon realizing the ease of use and the advantages of using the application, it creates a positive attitude towards that particular technology. This, in turn, influences their intentions and behavioural tendencies in using the technology and affects their acceptance and actual usage of the technology or innovation, aligning with research finding Ruengsawat, S. & Rakbumrung. W. (2020). The topic research is Factors Influencing the Acceptance of the Innovative Prototype for the Health Tourism Management the result found that the attitude towards use, behavioural intention, perceived ease of use and perceived usefulness could influence the participating tourists to accept the innovative prototype for the Health Tourism management, significantly at a statistical level of .05.

RECOMMENDATION

1. Recommendations from the research findings

1.1 It is essential to further develop the system in a commercialized manner through user-friendly applications that are functional and cover all areas in Ranong province or other areas with Health Tourism management. This system should serve as a model for developing information systems for various forms of tourism. However, when applying the model, consideration should be given to the context of each tourist destination.

1.2 Interested parties can utilize research findings to adapt strategies for managing Health Tourism or apply them to other forms of tourism. The focus should be on management using modern technology to provide services that demonstrate ease of use and benefits to tourists, leading to behavioural changes, positive attitudes, and encouraging repeat visits and effective word-of-mouth promotion to other travellers.

2. Recommendations for Further Research

2.1 In this research, the researchers collected data only from tourists who have previously engaged in Health Tourism in Ranong province. To expand the scope of this study in the future, it is recommended to extend the research or data collection to other areas, targeting a wider audience.

2.2 It is important to study other factors related to independent variables that are expected to influence the acceptance of information systems, including collecting high-quality data from the target group to obtain in-depth and more specific information. This will serve as a guideline to stimulate demand and generate interest among tourists in using the Health Tourism management system.

2.3 If the information system is implemented, it is advisable to provide user manuals to tourists, allowing them to learn and understand the system on their own. Tourists who are able to use the system will develop a positive attitude, recognizing the benefits and ease of use, leading to the acceptance of the proposed model.

2.4 It is recommended to create short videos or motion graphics to showcase the beauty and attractiveness of Health Tourism destinations as part of the information system.

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