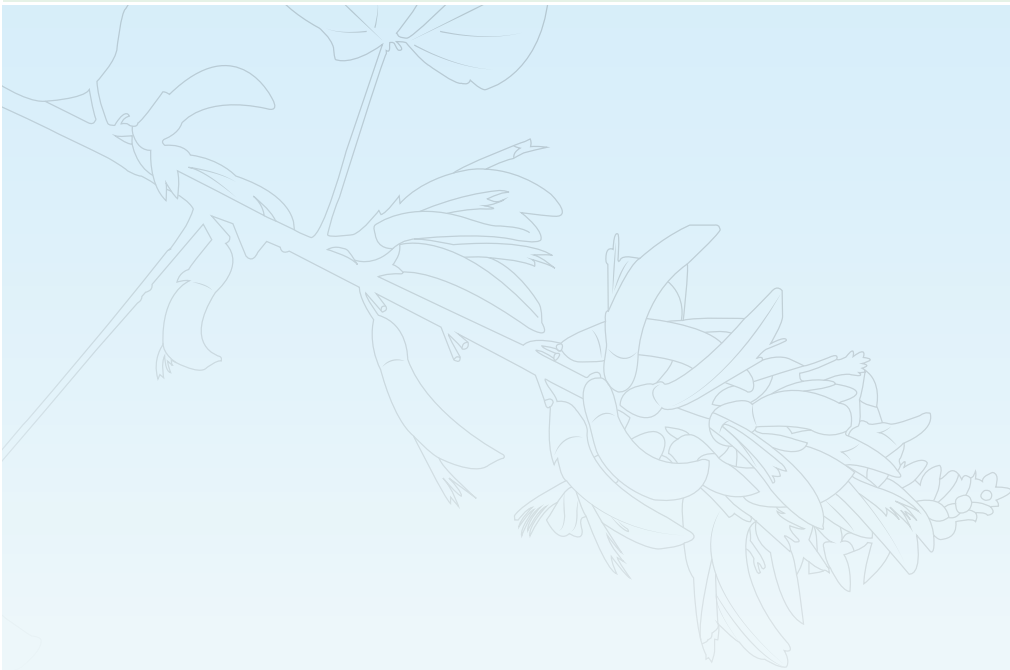


A Model for Enhancing Service Quality of U-Tapao Rayong Pattaya International Airport to Global Standards

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Abstract

This research aimed to 1) synthesize service models and standards of Thai airports and the world's best airports, 2) extract lessons learned from service experiences at world-class airports and identify service expectations according to Thai airport standards, and 3) develop a model for enhancing service quality at U-Tapao Rayong-Pattaya International Airport to world-class standards. The study employed a mixed-methods approach combining qualitative and quantitative research. Data were collected through 45 interviews and 400 questionnaires. The findings revealed that a high-performing airport should leverage technology to improve service quality and provide services in accordance with ICAO and IATA standards. The expectation regarding sufficient short-term and long-term parking spaces was rated at the highest level (Mean = 4.52). Factor analysis yielded a KMO value of 0.93 and a statistically significant Chi-Square value ($p = 0.00$). Finally, the study proposed a model consisting of five dimensions: Services & Facilities, Safety & Security, Support Services & Technology, Service & Staff Support, and Stewardship & Airport Management. This model can be applied to other airports in Thailand, particularly those under development or improvement, in order to raise standards consistently nationwide and support the development of a regional aviation hub.

Keywords: Service quality, Airport, Global standards, Model

Introduction

In the present day, economic growth goes hand in hand with increasingly intense competition in the global market, which has resulted in each country having to develop efficient economic management mechanisms, especially in the context of free trade that promotes free trade, investment, and transportation. The industrial sector has therefore become an important mechanism for creating economic advantages for the country. For Thailand, the industrial sector is a key driver in raising competitiveness both domestically and internationally is the “aviation industry”, which has a high growth rate and considered an important infrastructure that promotes sustainable economic development and plays a role in people’s lives. [1]

Thailand has a policy to develop the country to be the center of air transportation in the Asian region and aims to develop the quality of service to be ranked in the top 10 of the world’s best service quality. In order to support Thailand to be the center of air transportation in the region [2], especially airports, it is necessary to develop in all aspects to meet international standards, such as buildings, facilities, services, safety, and personnel who love to serve and consider the satisfaction of passengers and service users as important. Providing good and efficient services will lead Thai airports to gain international recognition.

The Eastern region of Thailand is an important area according to the 20-year Thailand national strategy that emphasizes enhancing the competitiveness of the manufacturing and service sectors with technology and innovation, especially in 12 target industries, including the aviation and logistics industries. The Eastern economic corridor (EEC) project covers 3 main provinces: Chonburi, Rayong and Chachoengsao, with U-Tapao Rayong-Pattaya International Airport (UTP) as the main infrastructure in the area with high potential to support growth in tourism and air transportation. In order for UTP to be competitive and meet the international standard, it is necessary to develop the quality and service standards to be on par with major airports in the domestic and internationally, which will be an important factor in creating satisfaction for passengers and reflecting a good image of Thailand on the world stage.

From the current situation where airports in Thailand are still unable to rank among the world’s best airports and the country’s development direction that focuses on becoming a regional aviation hub, the research team is interested in studying the model for enhance service quality of U-Tapao Rayong-Pattaya International Airport to world-class standards. It is hoped that the results of the study will be used as a guideline for developing and upgrading the service quality of the airport, so that it has the potential to compete internationally and can effectively support the growth of the aviation industry in the future.

Objective

1. To synthesize the service models and standards of Thai airports and the world's best airports
2. To extract lessons learned from the experience of receiving services from the world's best airports and expectations for receiving services according to the standards of Thai airports
3. To develop and present a model for elevating the service quality of U-Tapao International Airport to world-class standards

Research scope

1. Population scope: Qualitative research defines 3 key informants: 1) Airport service providers 2) Academician in aviation business 3) Airport users and quantitative research, the population is Thai and foreign users of airports in Thailand and U-Tapao International Airport who can communicate in English.
2. Content scope: Qualitative research, the main questions are: Current service patterns of airports in Thailand, future service trends, good service patterns and service quality, and expectations of service users. Quantitative research, the main questions are: Service users' expectations of the services of Thai airports and U-Tapao Rayong-Pattaya International Airport.
3. Area scope: Airports in Thailand that provide domestic and international flight routes in 2024, classified by airport affiliation, 3 affiliations, 1 for each affiliation, totaling 3 airports by random sampling: Suvarnabhumi Airport, Udon Thani Airport, Samui Airport , and 1 specific airport was selected by purposive sampling: U-Tapao International Airport. Totaling 4 airports.

Literature review

Concepts and theories on creating service quality, perception and expectation

Service quality means that customers receive what they expect. The more customers receive more than expected, the better the service is. However, if customers receive less than their expectations, the service is considered substandard. Therefore, a service that customers receive equal to or more than their expectations is a quality service [3]. Similarly, service quality depends on customer perception, that is, the quality of the service in the eyes of customers is a result of comparing the service expectations and what the service recipient thinks they will receive from the service. A service will be of quality when the service recipient receives what they expect [4]. Therefore, it can be concluded that service quality means the characteristics of the service that the service provider treats the customer

equal to or exceeds the customer's expectations, and is satisfied with the service, leads to word-of-mouth, or returns to use the service again.

Quality of customers service which consists of 5 items on the following

1. *Reliability* is the ability to provide a certain level of service that is required correctly and reliably.

2. *Assurance*, the service provider has the necessary knowledge and skills to provide service, is polite and friendly to customers, is honest and can build confidence in customers, and is safe and secure.

3. *Tangible*, various facilities, environment, tools and equipment.

4. Empathy, which can be easily accessed and contacted, ability to communicate and understand customers.

5. *Responsiveness* to customers, willingness to provide immediate service and provide good assistance.

In conclusion, service quality according to the concept consists of 5 main components or known as the SERVQUAL model, which is a framework for measuring customer perception of service quality. The SERVQUAL model is an important tool that can be applied to evaluate service quality in airports or other service businesses to be used as a guideline to improve the experience of service users in all aspects. In addition this model used in many research such as Aydin & Yildirim (2012) to determine whether there is a significant difference between the passengers' service quality expectations and service quality perceptions in different airline firms [5]. Pabedinskaite & Akstinaite (2014) to consider the problems of improvement of the quality of airport services provided to airlines taking into account the changes in consumer needs [6]. Kratudnak (2019) define strategies to achieve high-quality service that meets the passenger expectations [7]. Chaingam, et al. (2021) explores the factors influencing success of service quality for Suvarnabhumi Airport Rail Link (SARL) in Bangkok [8]. Alanazi, et al. (2024) determinants of airport service quality and their influence on passenger recommendations [9].

Customer perception and expectations of service quality

Customer perception is a process that occurs after stimulating feelings and is interpreted as meaningful by using the knowledge, experience and understanding of the individual [10]. Similarly, perception is a process of interpreting the meaning of things and people, with the process of selecting each person to give different importance, which is a result of each person's experience. The elements that affect perception include the situation, needs and responsibilities [11]. Therefore, it can be concluded that perception is a process of interpreting the meaning of the stimuli received through screening and interpretation based

on knowledge, experience, understanding, needs and the context of the situation, which causes each person to perceive and give importance to the same thing differently. this concept used in many research such as Park & Jung (2011) seeks to investigate transfer passenger's perception of airport service quality and its influence on value, satisfaction, airport image, and passenger behavior [12]. Chiappa, et al. (2019) investigate passengers' consumption behaviours pertaining to F&B services in airport [13]. Bae & Chi (2022) explores passengers' perceptions toward airport service quality through a content analysis [14]. Nor & Handani (2024) examine the factors influencing airport services and customer perceptions [15].

Customer expectation is an attitude about the desires or needs of consumers that they expect to happen in that service. Customers will evaluate based on what they expect to receive as needed [16]. Similarly, expectation is an opportunity or possibility (perceived) that is ambiguous and may or may not correspond to the actual opportunity. Expectation arises based on previous experiences in similar situations. Expectation is divided into 2 types: specific expectation and general expectation. Specific expectation reflects the experience gained from a certain situation in the past. Expectation is the sum of experiences in various similar or related situations. Therefore, it can be concluded that expectation is a concept or attitude that arises from the desires and needs of consumers, which they expect to receive from the upcoming service or experience based on past experiences and perceptions of what should be. This expectation plays an important role in customers' evaluation of the quality of the service received. Therefore, expectation has a direct effect on the perception of service quality and satisfaction of service users, which is an important element in analyzing and improving service standards in airports or other service businesses effectively. Research using this concept was from Yang, et al. (2015) aims to identify the difference between the level of expectation and satisfaction of airport users [17]. Cualhete, et al. (2017) applied the Hierarchical Model of air transportation service quality evaluation to identify customer' expectations in a Brazilian domestic airport [18]. Chonsalasin, et al. (2021) create a model for measuring airport quality by using confirmatory factor analysis to identify passengers' expectations [19].

Service quality assessment

Juthamane et al. (2017) have explained that service quality assessment is the difference between the expectations and perceptions of customers who receive the service. This service quality can be measured using the Gap Model, which consists of 5 gaps. However, service quality assessment is a process of comparing the "expectation" of customers before using the service with the "perception" after receiving the actual service. The Gap Model is used as a tool to analyze the differences or gaps that affect the quality of the

service. Therefore, the quality of the service will be considered good or bad depending on the size of the 5th gap, which will be reduced when the 1–4 gaps can be managed and reduced effectively [20]. This method was used much research such as Lee & Yu (2018) demonstrate that user-generated online contents can be used as an alternative data source for assessing airport service quality, which effectively complements and cross-validates the conventional service quality surveys [21]. Chaisurayakarn & Dunsathi (2021) assess the service quality of Suvarnabhumi Airport from the social media opinion [22]. Dunsathi (2022) assess the service quality of U-Tapao Airport [23].

Airport concepts

Airport is a place on the ground or water that is used as a place for aircraft to take off and land to receive passengers, baggage, goods and mail. In the airport, there will be buildings and equipment to provide services to aircraft, passengers, transporting baggage and mail [24]. Similarly, airport is the business of setting up an airport or a temporary place for aircraft to take off and land, setting up air navigation facilities, providing services on the aircraft parking area, providing aircraft mechanic services and providing various services related to aircraft, as well as providing services to personnel on duty for goods, parcels, passengers and employees of air navigation business operators. Therefore, it can be concluded an airport is a place established to be used as a point for taking off and landing of aircraft, playing an important role in both physical aspects and providing services, to move passengers, baggage, goods and mail, including supporting air navigation efficiently and safely.

Types of airports [25]

Airport is a designated area on the ground or water, including buildings and components, for the purpose of using all or part of the area for aircraft to take off or land on the ground. It is large and has complete flight and transportation facilities, such as fuel services, radio navigation aids for approaching the airport, customs checkpoints, immigration checkpoints, quarantine checkpoints, transportation between the airport and the city, hotels, etc.

Aerodrome is an airport that has all the characteristics of an airport but is more commonly used in air transportation. In the United States, the word airport is almost always used instead of aerodrome.

Airfield is used for aircraft to take off and land but has only the necessary services or facilities.

Airstrip is a small airport using a landscape area that is set up for aircraft to take off or land only, without navigation aids and facilities. Most are located in various regions of the country.

In conclusion, the types of airports based on service characteristics can be classified into 4 types, which differ according to the level of readiness of facilities and usage. This classification of airport types helps to clearly understand the level and role of each airport. It also allows us to know the management model of the airport and the setting of service standards appropriate to the potential and duties of each type.

Airport system

Airside means the area within the airport used for take-off, landing and movement, including the surrounding area, such as runways, taxiways, aircraft parking areas, and buildings or parts of buildings leading to such areas with controlled entry and exit.

Landside means the area and buildings within the airport or airfield that are not in the airside area, which is an area where people who do not travel by aircraft can enter and exit without control. Important elements in this area include passenger terminals, cargo buildings, and traffic systems within the airport.

Airport service

Airport services for aircraft such as Runway/taxiway services, Airport equipment services, Aviation sign, Ramp services, technical services, and air navigation aid.

Airport services for passengers providing services for departing passengers, including checking what passengers need to prepare for departing from the airport to foreign countries, such as passports, visas, ID cards, boarding passes, passenger baggage, etc. There are also various services provided by the airport, such as restaurants and beverage shops, souvenir shops, duty-free shops, etc. also providing services for arriving passengers. Can be divided into 3 types: landing passengers, transit passengers and transfer passengers. Various services provided by the airport include document services, city shuttle services, tourist service points, information points, luggage tracking, and lost property reports etc.

Airport services for cargo : Warehouse services. The airport will provide a building for storing goods and mail entering/exiting and passing through the airport. Providing services to facilitate the loading and unloading of goods using a container system by the airport.

In conclusion, airport services can be classified into 3 main types, 1) Facilities are basic services that the airport must have to support the operation of aircraft and passengers in a comprehensively. 2) Services that the airport provides without additional charges. 3) Enjoyments are additional services to enhance the passenger experience, but service users must pay for them, such as shops, restaurants, rest areas, etc. Therefore, airports have an important duty to provide services in terms of infrastructure, facilitation, and creating a good experience for passengers, aircraft, and products related to use of the services. Providing appropriate, complete, and high-quality services will reflect the potential and standards of that airport at the national and international levels.

Conceptual framework

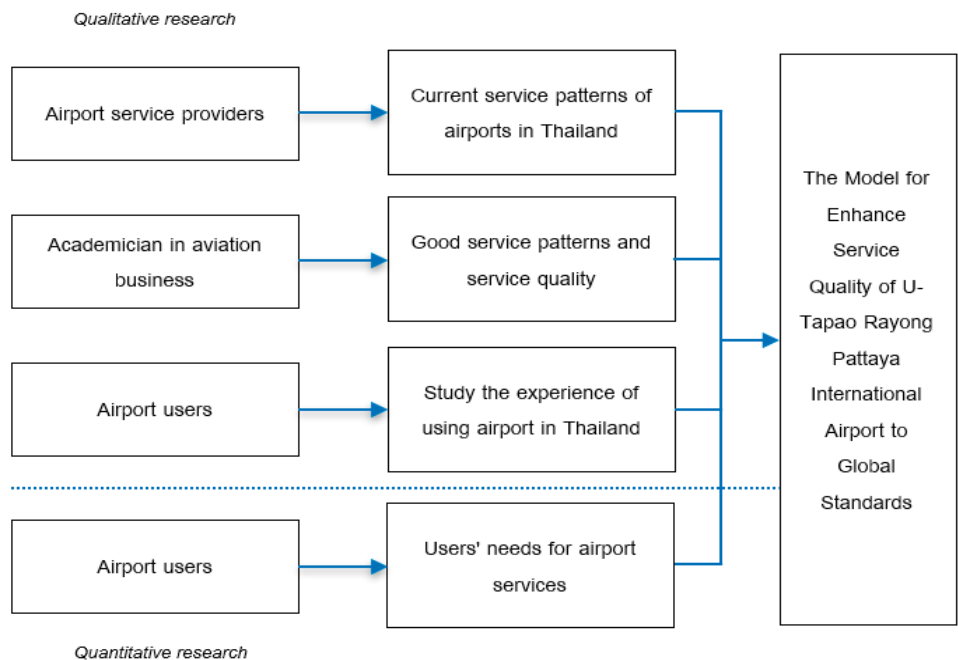


Figure 1. Conceptual framework

Source: Authors

Methodology

Step 1: Study information about service patterns, service trends, good service patterns and service quality. Key informants were identified as airport service providers, academicians in the aviation business and airport users, totaling 45 people from Airports of Thailand Public Company Limited (AOT), 5 people; Department of Airports, 5 people; and airports under private operator, 5 people. Data collection sites were selected using two methods. First, three airports were chosen via random sampling: Suvarnabhumi Airport (representing AOT), Udon Thani Airport (representing the Department of Airports), and Samui Airport (representing private operators). Additionally, U-Tapao International Airport was specifically selected (purposive sampling) for the study. Along with 15 academicians in the aviation business and 15 airport users. The tool was an interview that had been approved for research ethics No. HCU-EC1584/2568. Data analysis summarized key points, presented data in tables essays, and synthesized the results used in creating the questionnaire.

Step 2: Study the expectations of service users towards the services of Thai airports and U-Tapao International Airport. The sample group consisted of 400 Thai and foreign service users (Multi-stage random sampling). The sample size was determined using W.G. Cochran’s

(1953) unknown population sampling formula at a 95 percent confidence level. The sample group was 384 people, which is appropriate for exploratory factor analysis. It should have at least 200 samples to achieve stability in factor analysis (Siddiqui, 2013). Therefore, the researchers increased the data collection to 400 people to make it more complete by use multi-Stage Random Sampling, step 1: Primary Quota Sampling, stratified into two groups: 200 Thai passengers and 200 international passengers proficient in English. Step 2 participants are distributed equally across four data collection sites (100 participants per site, comprising 50 Thai and 50 Foreigners each): from Airports of Thailand (AOT), Department of Airports (DOA), private operated airport, and U-Tapao Rayong-Pattaya International Airport. The instrument used was a questionnaire that had been tested for research quality with alpha coefficient 0.89 and had been approved for research ethics. No. HCU-EC1584/2568. Descriptive statistics was used for data analysis such as. Data were presented in tables and essays.

Step 3: Determine the model for improving the service quality of U-Tapao International Airport to world-class standards by conducting an exploratory component analysis (EFA) and examining the model obtained through focus group discussions with 12 experts who com from utilized a purposive sampling technique to identify and select a total of 12 qualified experts to serve as key informants with inclusion criteria, all participants voluntarily agreed to join focus group discussions and signed informed consent forms, with guarantees that their identities and organizational affiliations would remain confidential. The inclusion criteria were divided into two categories.

Research Results

The results of the study for the first objective indicated that informants from all three groups were in agreement regarding the current service patterns and standards of Thai airports and recommendations for improving the quality of service to meet international standards.

The first issue is the application of technology to improve service and efficient passenger management, such as the use of automatic passport control systems, facial recognition systems, and smart baggage scanners, which will help reduce delays during peak passenger hours and create confidence in security measures.

The second issue is to increase the number of staff and develop the potential of staff to have language skills, communication skills, and professional service, including having a friendly and caring service mind to create a good impression on passengers.

The third issue is the management of airport facilities to be complete and easily

accessible, especially in resting areas, free Wi-Fi service points, electronic device charging points, restaurants, clean and adequate toilets, as well as the preparation of facilities for special passenger groups such as the elderly, the disabled, and families with young children.

The fourth issue is planning the allocation of space within the airport to be consistent with the increasing number of passengers in the future, especially during festivals or high seasons to reduce congestion and increase sufficient space for waiting or checking in, as well as decorating the area to reflect local identity to create a relaxing and memorable atmosphere.

In addition proposals for developing public infrastructure and transportation systems to provide a variety of options, be safe, and be reasonably priced, to increase convenience in and out of the airport, including the procurement of efficient equipment to support future expansion and the development of a modern and reliable security system.

Finally, Thai airports should adhere to the service guidelines according to the standards of the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA) and then adapt them to suit the context of each airport and the number of passengers for the standardized and efficient of service, creates the highest satisfaction for passengers and business partners.

The second objective found that most of the respondents have used the airport service under the Department of Airports, 362 people or 90.50 percent. Most of them traveled for tourism purposes, 196 people or 49.00 percent. They used the airport services more than once a year in the past year, 378 people or 94.50 percent. They traveled to the airport by public transportation, such as electric trains, public buses, public vans, and Airport Shuttle Buses, 248 people or 62.00 percent. As for the respondents who have experience using U-Tapao International Airport, 125 people or 31.25 percent of all respondents expected U-Tapao International Airport to focus on developing the quality of transportation and public utilities as the top priority, 76 people or 60.50 percent.

The level of expectation of service users found that overall, they had the highest expectation of having adequate short-term and long-term parking spaces (Mean = 4.52). Next, they expected Thai airports to build trust and feel safe every time they used the service (Mean = 4.43). They also expected Thai airports to have a variety of transportation systems to provide services, such as public buses, vans, taxis, and rental cars (Mean = 4.32). All issues had the highest expectations. For those who have used U-Tapao International Airport, had the highest expectation of having a variety of transportation systems to provide services, such as public buses, vans, taxis, and rental cars (Mean = 4.74). Next, they expected U-Tapao International Airport to have a service point for plugging in charging cables in the airport service area for free (Mean = 4.25). Both issues had the highest expectations. They also

expected U-Tapao International Airport to have good landscaping outside the airport (mean = 4.18). They had high expectations, as shown in Table 1.

Table 1. Summary of the ranking of expectations of airport users towards the services of Thai airports and U-Tapao International Airport (UTP)

Rank	Thai airports	U-Tapao International Airport
1	Adequate short-term and long-term parking spaces (Mean = 4.52, S.D. = 0.67)	Having a variety of transportation systems to provide services (Mean = 4.75, S.D. = 0.93)
2	Build trust and feel safe every time they used the service (Mean = 4.43, S.D. = 0.49)	Service point for plug in charging cables (Mean = 4.25, S.D. = 0.84)
3	Have a variety of transportation systems to provide services (Mean = 4.32, S.D. = 0.74)	Have good landscaping outside the airport (Mean = 4.18 S.D. = 0.68)
4	Have a Muslim prayer room (Mean = 3.00, S.D. = 1.00)	Service points such as banks, currency exchange counters, post offices, and ATMs. (Mean = 3.54 S.D. = 0.812)

Source: Authors

The third objective found that the results of the relationship matrix between the variables obtained a Bartlett Test value of 0.93 and a significant value of Chi-Square of 0.00. The results of the analysis of the common components using the Orthogonal Rotation Method with Varimax obtained 5 components and 37 variables and were able to present a model for raising the service quality of U-Tapao International Airport to world-class standards, which is the “5S Model for U-Tapao Airport Global Service Quality”, presented as shown in Figure 2.



Figure 2. The 5S Model for U-Tapao Airport Global Service Quality

Source: Authors

Figure 2 consists of 1) Services and Facilities, which means upgrading services and facilities to international standards, managing them efficiently, having adequate resting areas, along systematically organizing the usable space to create maximum convenience and satisfaction for passengers. 2) Safety and Security means raising the level of safety and security to meet international standards to build passenger confidence by providing security officers to inspect regularly, improving the passenger screening process to be fast and efficient, overseeing the movement of baggage carefully, providing checkpoints in all important areas, and having a system to protect passengers' personal information safely to support international service standards. 3) Support Services and Technology means upgrading the quality of support services and technology to be up-to-date and meet international standards by introducing innovation to increase accuracy and reduce waiting times, as well as preparing modern tools and equipment at every service point to make operations efficient, fast, and consistent with the needs of digital-age passengers. 4) Service and Staff Support refers to raising the level of service by focusing on the role of service staff, who are the first line of defense in creating a good impression for passengers. There should be staff who have the skills that meet the needs of passengers, can respond to requests, have good communication skills, and can use international languages. The last one is 5) Stewardship and Airport Management means raising the level of management within the airport to accommodate a large number of passengers and meet the expectations of airport users, focusing on systematic and sustainable management, having appropriate infrastructure, considering providing services to specific groups, including preparing for emergencies, as well as creating a distinctive identity in the image and social role through design and CSR activities which U-Tapao International Airport can apply as a

guideline to further improve service quality.

Conclusion and Discussion

We presented a model for upgrading the service quality of U-Tapao International Airport to world-class standards, namely the 5S Model for U-Tapao Rayong-Pattaya International Airport Global Service Quality, which can be discussed as follows: 1) Service and Facilities: The design of good services and facilities will reflect the commitment to upgrading standards to international standards, and will also help create a good experience for passengers. It's consistent with Phummanee, T. (2018) [26] who stated that customer service perception and employee service if the service location, including air quality, location, equipment, and building design are good and appropriate, will be able to create value in perception and service, including always creating value added for the business. 2) Safety and Security, which is another important foundation that promotes airports to be able to provide services efficiently, and systematically and create the highest confidence for passengers. The results of this research is consistent with the concept of Security-Safeguarding International Civil Aviation against Acts of Unlawful Interference (Annex 17) of ICAO (2017) [27] which states in "Integrated Security Management" that airports must support the use of integrated security systems, emphasizing threat prevention to international standards. 3) Support Services and Technology are important issues that will help push airports to compete internationally and be able to respond to the needs of passengers in the digital age with full efficiency. The results of this research are in the same direction as the Smart Airport and Digital Transformation concepts of IATA (2019) [28], which states that "Smart Airports" mean that airports should focus on using technology to increase operational efficiency and create a good experience for passengers. 4) In terms of Service and Staff Support, it is necessary to develop international standards in terms of communication skills, service attitudes, and the ability to take care of passengers thoroughly, which are important elements in creating an impressive and professional travel experience for the service provider. The results of this research have the consistent of factors that will make the service successful of Parasuraman et al., (1990) [16] who stated that "the perception of the quality of the service users will make the service successful", i.e. the service provider can provide the service as promised and is reliable, has a standard in service, and 5) In terms of Stewardship and Airport Management within the airport, good management of the airport will help reflect readiness to be an international airport, have social responsibility and excellence in all dimensions. The results of the research are consistent with the research of Kongsen, W. (2019) [29] who studied the management of the passenger service system at Suvarnabhumi Airport in a competitive environment with results. The results of the study found that the guidelines for developing

a service system to be able to compete on a global level must give importance to developing the results of the management of the service system and creating a system for maintaining the quality of service sustainably.

Recommendation

1. The research results can be used as a conceptual framework for formulating a strategic plan or master plan for developing U-Tapao Rayong-Pattaya International Airport to be in line with international service standards, based on the 5S Model, which emphasizes the completeness of infrastructure, technology, personnel, safety, and management.

2. This model can be applied to other airports in Thailand, especially airports that are under development or improvement, in order to raise standards to be consistent nationwide and support the regional aviation hub.

3. The impact of each element in the 5S model on passenger satisfaction and experience should be studied directly to make the model more accurate.

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