The servicescape of air transport terminal affecting passenger satisfaction

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Abstract. The air transport infrastructure in this study is the airport. The aim of this research is to assess the airport environment specific on servicescape or the architecture design, and function which affecting the passenger’s satisfaction. This study conducted at Don Mueang International Airport (DMK), Thailand. Since DMK has been renovated and expanded to serve the demand of passenger. The questionnaires were distributed to 400 Thais passenger using DMK airport. The structural equation modelling (SEM) was utilized to confirm the factors affecting the user’s comfort and satisfaction. The result found that the factor most affecting passenger’s feeling comfortable which leads to satisfaction inside the terminal were the exhibition of arts and culture inside terminal, the cleanliness of terminal, the natural light shine into the terminal and last the cleanliness of toilets. Hence, the airport management team should considering present the arts and culture of Thailand in the terminal. This would help passenger relaxing by appreciating the arts and culture during their journey in and out Thailand.

1. Introduction

The modern modern airport, today, around the globe which the terminal function is more than to accommodate passenger processing. According to [1] cited that the terminal operation of today’s airport is complex. It is due to the rise of demand use, the facilities providing for passenger’s comfort, and the expansion of design. For instance, the new terminal of Singapore Changi Airport namely ‘Jewel Changi’. The new terminal composes of waterfall, tropical trees, plants, shopping mall, hotel, movie theatre, and grocery store. The idea is to make the airport as the destination itself [2]. It means that the passenger can enjoy the visit the airport, transit and relaxing at the same time [3].

This is consistent to [4] mentioned that the terminal contains the services related to the essential processes of security, immigration and customs, and commercial or non-aeronautical services (food & beverages, retails, confectionary) and might be new areas including entertainment, leisure and beauty. Additionally, providing internet facilities, such as Wi-Fi, internet kiosk, or workstation is become normal. Some airports provide specific services and facilities that go far beyond just check-in differentiation and lounges.

They provide separated security, immigration and customs processes for premium passengers. On the other hand, elsewhere, the airport provides specialist lounges for babies and children, such as Amsterdam airport. However, every new airport will definitely will be quite the same with full of facilities accommodating and facilitating the users. As an air traveler might encounter various emotional both good, anxiety, and sorrow to say goodbye. So the airport atmospheres and spaces could
help to reduce anxiety, or seduce the passenger to purchase the products or services [2], [5]. Thus, this study focusing on the servicescape which is mostly concern with the design and function of the airport terminal.

2. Literature review
According to [6] the airport terminal is a place providing the connection between landside and airside of the airport. It is a building where passengers, crew and cargo can access to air transportation. Besides, the terminal provides facilities, formalities and processes to move the passengers on and off the commercial aircraft efficiently. It is the beginning point of air travels, but the end point of the aircraft. This means that it is the area where passengers can transfer to other destination whether by air or ground transportation. Generally, the terminal operations services for passengers divided into two types [1] noncommercially, and commercial or it can be said that aeronautical services and non-aeronautical services. The aeronautical services are the essential services that the airport authority must provide, for example flight and general information, baggage trolleys, direction signs, seating facilities, toilets, and service for the passenger with reduced mobility and special passengers. While, the non-aeronautical services are mostly operated by concessionaires, such as duty-free shop, restaurants, café, car rental etc.,

The service environments [7] are one of the vital service marketing mix elements. Since, the environmental atmosphere can carve the customer experience, and reinforcing the customer’s satisfaction. The design of service environment takes so much time and effort. The service environment has another word called ‘servicescape’, it associates to the appearance, style of physical context. The scholar [8] pioneered the servicescape typology with the assumption that the physical design and decoration has influence on the customer and service agent behaviors, generate the image of organization. The three important dimensions of servicescape including; ambient condition such as temperature, air quality, noise, music or odor, the second is space or function refers to the layout and furnishing, and last the signs or artifacts refers to the signage, personal artifacts, and style of decor. From this notion, the study of servicescape has been conducted in various type of service organization, for instance, [9] studied the servicescape affecting transfer passengers at Incheon International Airport.

The result revealed that there were three out of six dimensions of servicescape: cleanliness, amusement, and functionality have a positive effect on passenger’s emotion and satisfaction. While, the convenience, attractiveness, and pleasantness have no effect on passenger emotion. The other scholars [10] evaluated the airport users emotional of anxiety and enjoyment which influenced by servicescapes. There were six variables on servicescape of the study including; design, scent, functional organization, seating, lighting and air conditions, and cleanliness. The result found that the attributes which affecting a positive airport users’ emotion were the airport design and scent. On the other hands, improper air and lighting conditions, and poor functional have a negative emotion of the airport users which caused anxiety.

According to [11] summarized that servicescape is important component of service organization which leading to the customer attitudes, and expectations of the service they will receive. [12] have developed a conceptual model of passengers’ expectations on airport service quality. There were three dimensions: function, interaction and diversion [13,14]. Where, the function came from the idea of servicescape including space layout and function, ambient conditions, and signs and symbols. And in terms of diversion derived from the services including, productivity, maintenance, and leisure. A set of 65 questions have been conceptualized from the in-depth interview and focus groups.

In this paper, the author focused on the servicescape: the space layout and function (the exhibition of arts and culture in terminal; the decoration of local arts and culture), ambience (design passenger feel safe and secure using the airport terminal; cleanliness of toilette; terminal cleanliness and natural light shine into the terminal), and signs and symbols (the airport design easy to find facilities) the conceptual framework as shown in figure 1.
3. Methodology
This study is based on quantitative research. The author employed questionnaire to collect data at DMK airport. The sample group are 5 groups of second year students in airline business program who experienced using DMK, and finished the airport management course. There are 130 students in total, and 270 passengers. The number of sample group is 400 persons. Descriptive statistic, Oneway ANOVA f-test, and structural equation modelling were applied. The author has divided gender into three categories including: male, female, and lesbian, gay, bisexual and transgender (LGBT) to test the differences of their emotional on atmospherics.

4. Result
The respondents consist of male 43 per cent, female 54 per cent and lesbian, gay, bisexual and transgender (LGBT) 4 per cent. Most of the sample age around 30-35 year-old, and have education level at bachelor 40 per cent, master degree 33 per cent. The hypothesis was examined.

**H₀:** The gender of respondents has no different opinion on the airport terminal services cape

**H₁:** The gender of respondents has different opinion on the airport terminal services cape

| Table 1. Oneway ANOVA |
|------------------------|
| Source of variance | ss | df | Mean Square | F | Sig. |
| Servicescape | Between group | .035 | 2 | .018 | .200 | .819 |
| Servicescape | Within group | 35.05 | 397 | .088 | |
| Servicescape | Total | 35.09 | 399 | |

**Significant level 0.05**
From table 1 the hypothesis result found that the gender of respondents has no different opinion toward the airport terminal services cape.
The confirmatory factor analysis was tested to confirm the structural modelling of the airport terminal services cape. The goodness of fit analysis of the research model was shown in Table 2.

### Table 2. Goodness of fit analysis of confirmatory factor analysis

| Acceptance level | Goodness of fit index | Acceptance level | Goodness of fit index |
|------------------|-----------------------|------------------|-----------------------|
| X²(CMIN)         | 313.705               | AGFI             | > 0.8–0.9             | .995               |
| d.f              | 9                     | CFI              | > 0.9                 | 1.00               |
| p                | .000                  | RMSEA            | < 0.05–0.08           | .000               |
| CMIN/ d.f        | < 3                   | RMR              | < 0.05–0.08           | .004               |
| GFI              | > 0.8–0.9             |                  |                       | .999               |

### Table 3. Results of confirmatory factor analysis

| Services cape                   | Standardized estimate | Nonstandardized estimate | S.E. | C.R.  | SMC |
|---------------------------------|------------------------|--------------------------|------|-------|-----|
| Safe & secure                   | .229                   | 1.000                    | -    | -     | .053|
| Easy to find facilities         | .327                   | 1.419                    | .419 | 3.390*** | .107|
| Cleanliness of toilets          | .554                   | 2.896                    | .751 | 3.856*** | .307|
| Cleanliness of terminal and natural light | .725 | 3.777 | .951 | 3.973*** | .526|
| Exhibition of arts and culture  | .736                   | 4.093                    | .1029 | 3.976*** | .542|
| Decoration of local arts and Culture | .541               | 3.135                    | .816 | 3.841*** | .292|

*** < 0.001

From Table 5, the effect of services cape on the airport terminal should have an exhibition of arts and culture is $\beta = 0.736$, C.R. = 3.976 (p <0.001), proving that it had significant effect statistic of explanation power at 54.2%. The effect cleanliness of terminal and natural light shine through the terminal is $\beta = 0.725$, C.R. = 3.973 (p <0.001), proving that it had significant effect statistic of explanation power at 52.6%. And the cleanliness of toilets is $\beta = 0.554$, C.R. = 3.856 (p <0.001), proving that it had significant effect statistic of explanation power at 30.7% respectively.

### 5. Conclusion and recommendations

This study determined to analyse the services cape factors affecting the airport terminal users at DMK, Thailand. The result revealed that gender has no significant of differences on the services cape factors. The researcher, specifically, defined the airport terminal services cape into six categories including: feeling safe & secure when using the airport terminal, the layout design is easy to find facilities inside the terminal, the cleanliness of toilets, the cleanliness of terminal and the natural light shine into the terminal, the exhibition of arts and culture, and the decoration of local arts and culture inside the terminal. There were three factors affecting the user’s satisfaction from highest to lower namely; the exhibition of arts and culture, the cleanliness of terminal and the natural light shine into the terminal, and, the cleanliness of toilets accordingly.

Thus, the airport operator should implement the exhibition of arts and culture or even local music to relief the stress of passengers during spending time at the airport. It is also help to promote Thai arts and culture to visitors. As well as, all area in the terminal should be always kept clean.

Meanwhile, besides the terminal cleanliness with the natural light shining in; the spacious terminal is highly required. As since, the new normal life has started and every passenger needs to keep social distancing to avoid unwanted infectious disease. The limitation of this study is focusing only Thais travellers. Further study should study and collected data from various nationalities who use DMK airport.
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