

UNDERSTANDING USERS' PERCEIVED SERVICE QUALITY OF RAILWAY STATION : A CASE STUDY OF NAKHON RATCHASIMA

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Abstract

Regarding punctuality and highly safe mode lead, rail transports become popular. Currently, in several countries traveling by train has been widely employed, resulting in the development in various aspects and motivating people to use more rail transports. Despite a long train service operation in Thailand, the number of passengers continually and evidently decreased every year. The aforementioned issue may be caused by insufficient improvement and development of railway stations. Therefore, the factors that potentially influence railway stations' service perception should be refined in order to provide effective strategies and policies to increase rail transport's passengers. In this study, 370 trains users with 18 indicators were collected to seek insight into the factors that influenced service quality perception. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were applied in this study. The finding reveals that indicators are classified into 3 factors, namely, Service, Safety and Facilities, and Information factor. These 3 factors had an ability to significantly measure service quality perception toward railway stations. In addition, safety and facilities were found as the major factor affecting service quality perception with $\beta=0.988$. The findings may be used as a potential guideline for attracting passengers' demand, developing strategies and policies to build better service quality including facilities lead to enhance the good image of railway stations in Thailand.

Keywords: Railway station, Exploratory Factor Analysis, Confirmatory Factor Analysis, Perception

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Introduction

Providing high safety, punctuality, convenient and reasonable fare, rail transportation mode become more popular (Gronau, 1970; Sanchez-Borras *et al.*, 2010). In Japan and Taiwan, railway station service and facility are advance with enormous passengers per day (Loo *et al.*, 2010; Van de Velde, 2018). This demonstrated the comfort and convenience to travel by train. On the other hand, the number of train passenger in Thailand has continually decreased (Figure 1), despite drastic intention of government to develop and improve the service, facilities and other aspects in order to attract railways passenger.

Number of previous studies found that many injuries and deaths were caused by roadway crashes (Champahom *et al.*, 2019; Champahom *et al.*, 2020b; Champahom *et al.*, 2020c; Jomnonkwao *et al.*, 2020b; Se *et al.*, 2020a; Se *et al.*, 2020b; Champahom *et al.*, 2021; Se *et al.*, 2021a; Se *et al.*, 2021b). This issue may be one of the concerns and consequently impact on user's confidence toward roadways by switching to other transportation modes. In contrast, the serious accidents at the railways crossing tended to decline in 2017 which was due to activating safety policy of State Railway of Thailand, resulting in the increase of train passengers. In addition, there were other factors which potentially affected the users or passengers' confidence toward railways including service, readiness of facilities and public relations (important information for users or passengers). This is consistent with the previous studies which found that service and facilities factors inside railway station were components for attracting users (Yamashita *et al.*, 2007; Lee *et al.*, 2016; Masirin *et al.*, 2016). Additionally, Frank *et al.* (2008); Danwen *et al.* (2010) also found that, in addition to service providing, users may decide to use the railway station or railways' service based on other various factors. Yavuz and Welch (2010); Barrow (2015) illustrated that the safety inside the station was preliminary concern among users, particularly those who travel alone. Moreover, there are other factors or indicators that potentially affect the users' perception on service in the railway station, which is summarized in Table 1.

This study aims to investigate the factors or components affecting users' perception on service quality of railway station, a case study of Nakhon Ratchasima railway station and Jira junction station which are the most frequently used train stations (Figure 2).

Nakhon Ratchasima Province is the second most populated province in Thailand. This province is considered as the distributing gateway that connect

the travel routes to other provinces in the northeast region of Thailand. In particular, the government currently undertakes a project to develop these stations as double-track railway station. Moreover, these stations could be a representative of the country based on above mentioned reason.

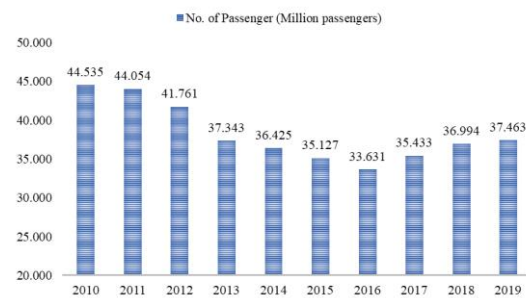


Figure 1. The number of Thailand's train users

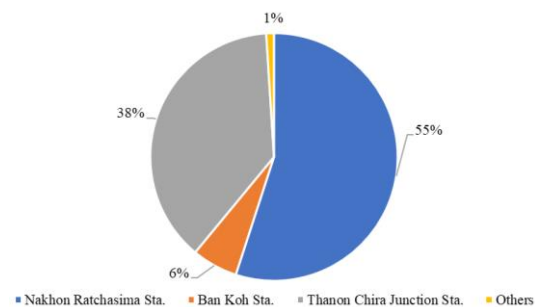


Figure 2. The number of Nakhon Ratchasima's train users (2008-2012)

Materials and Methods

Survey design

As this study aim to refine the factors influencing users' perception toward service quality of the railway station, the data was collected at 2 large railway stations in Thailand, namely, Nakhon Ratchasima railway station and Jira junction station by using Quota Sampling method targeting people who used or have an experience in using railway stations.

The questionnaire design was used as a tool in this study. A total of 370 samples were drawn based on the rules of Tabachnick *et al.* (2007) which stated that the appropriate number of samples for Factor Analysis should be more than or equal to 300 samples. There are 186 users from Nakhon Ratchasima railway station and the remaining are from Jira junction station (Table 2).

Table 1. Indicators affecting train users' quality of service perception

Authors (Year)	Country	Objective	Significant Indicators
Rahaman and Rahaman (2009)	Bangladesh	Defining the relationship between overall satisfaction and service quality attributes in Bangladesh's Railway	- Security in station - Behavior of staff - Station information - Adequacy of waiting seat
Nandan (2010)	India	Identifies components of service quality of Indian Railways at railway platforms.	- Behavior of staff - Information system (e.g. provide arrival/departure time) - Basic facilities (e.g. waiting seat) - Safety and Security (e.g. CCTV, guards)
de Oña <i>et al.</i> (2015)	Spain	Investigates the relationship between perceived service quality, customer satisfaction, and behavioral intentions for Metro of Seville	- Tangible Service Equipment (e.g. cleanliness of station, seat and toilet, Lighting in station) - Accessibility (e.g. easy/convenient to buy a ticket) - Availability of the service (frequency of service) - Customer service (e.g. behavior of staff) - Security (e.g. Signage of emergency exit and extinguishers, security against theft and aggression in stations)
Permatasari (2017)	Indonesia	Determining the factors of customers' satisfaction towards Tawang Alun Train	- Reliability (e.g. the ease to get clear information, availabilities of information related to the train schedule) - Responsiveness (e.g. the speed and accuracy in giving information that customers need) - Assurance (e.g. safety in station and train) - Empathy (e.g. behavior of staff) - Tangibles (e.g. cleanliness of restroom, the number of waiting seat)
Marinov <i>et al.</i> (2014)	United Kingdom	Identify the factors related to customers' satisfaction in railway station service	<i>Infrastructure</i> - Public toilet - Wi-Fi - The number of trash bins - The number of waiting seats
Das <i>et al.</i> (2013)	Malaysia	Identify and explore the community and user satisfaction of the effectiveness of the public transportation system monorail service	- The number of ticket counters - Providing board information - Installation of CCTV - Cleanliness of station
		Measures satisfaction that passengers gain out of railway station amenities	- Platform infrastructure and cleanliness (e.g. Responsibility of passengers towards maintaining cleanliness and hygiene) - Catering and drinking water facility (e.g. clean and hygienic food courts and catering stalls)
Ghosh and Ojha (2017)	India		- Washrooms, toilets and other passenger amenities (e.g. cleanliness of washrooms and toilets) - Passengers' Interaction with staff (e.g. behavior of staffs)
Gupta and Datta (2012)	India	Propose a method that indicates the level of importance and satisfaction	- Security in station - Passenger amenities (e.g. waiting seat, waiting room) - Travel associated facilities (e.g. ticket counter, automated teller machine)
Eboli and Mazzulla (2015)	Italy	- Explore the impact of the relationship between global customer satisfaction and service quality attributes - Verify which of these attributes are key factors of service quality	- Information (e.g. communication to office, information counter at station) - Service (e.g. parking lot, punctuality of runs) - Cleanliness (e.g. cleanliness of seat, toilet and station)

Table 2. Sample profile (N=370)

Variable		Frequency	Percentage
Gender	Male	173	46.8
	Female	197	53.2
Age	< 21 years old	61	16.5
	21-30 years old	133	35.9
	31-40 years old	45	12.2
	41-50 years old	26	7.0
	51-60 years old	38	10.3
	> 60 years old	67	18.1
Educational level	Under Secondary education	98	26.5
	Secondary education	116	31.4
	Bachelor's degree	148	40.0
	Higher education	8	2.2
Occupation	Student	139	37.6
	State enterprise employee	25	6.8
	Agriculturist	39	10.5
	Government official	20	5.4
	Employee	51	13.8
	Business owner	30	8.1
Income	Other	66	17.8
	<= 10,000 THB	214	57.8
	10,001-15,000 THB	76	20.5
	15,001-20,000 THB	30	8.1
	20,001-25,000 THB	19	5.1
	25,001-30,000 THB	7	1.9
Frequency	> 30,001 THB	24	6.5
	< 1 time per month	148	40.0
	1-2 times per month	103	27.8
	3-4 times per month	51	13.8
	>4 times per month	68	18.4

The respondents were requested to answer the questionnaires which divided into 2 parts. In the first part, respondents were asked about general demographics and characteristics (e.g. gender, age, frequency of using railway station, etc.) and the second part inquired about users' perception toward service quality of railway station which classified into 4 aspects, namely, service, facilities, safety and marketing promotion. In the second part of the questionnaire, 5 point-scale was used to measure scores where 1 defined as "need to urgently

improve" and 5 as "very satisfied". Validating or testing the reliability of questions (in the second part of questionnaire) was carried out in next section.

Variables and hypothesis

In this study, there were 18 indicators related to individual demographics (e.g. gender, age, educational level, occupation, income and frequency of use) and users' perception toward service quality of railway station as shown in Table 4. These indicators were derived from previous studies on satisfaction and service quality perception toward railway station. Besides, the hypothesis of this study is that the 18 indicators have an ability to measure the users' perception toward service quality of railway station. Exploratory Factor Analysis (EFA) will be applied in order to group the indicators, and then cross-validate with the Second order Confirmatory Analysis (Second order CFA) to confirm the relationship between group of indicators.

Factor analysis

To identify indicators or factors influencing users' perception toward service quality of railway station, this study applied factor analysis to group the factors that have similar characteristic in which characteristic of each group can be used as a guideline for related organization to improve the quality of service. The factor analysis is a statistical analysis technique that can reduce a large number of existing variables by grouping them using their similar characteristics and cutting off the variables which cannot be grouped. Furthermore, in this analysis technique, there is neither independent variable nor dependent variable. Factor analysis is divided into 2 procedures as follows:

1) Exploratory Factor Analysis: EFA

Exploratory Factor Analysis (EFA) is an analytical method which is used to reduce the number of variables by grouping. In this study, Principal Component Analysis (PCA), which is a dimensionality reduction technique, was used by removing variables which are less significant or do not affect the data at a statistical significance level before taking the qualified variables for analysis in the next procedure (Thompson, 2004). Therefore, in this study, all indicators related to users' perception toward service quality of railway station were group into 3 groups as shown in Table 4

2) Confirmatory Factor Analysis: CFA

The objective of this method is to confirm the factors or variable groups acquired from EFA whether they were mutually related or not, and

compared the significance of each variable by using the Factor loading value (Thompson, 2004) as an indicator. The results of the confirmatory factor analysis model can be demonstrated by various ways. In this study, the results were presented in the form of a relationship diagram consisting of latent variables (in the circle) which cannot be directly measured. Thus, the values were measured through observed variables which are in the square and obtained by the questionnaires as demonstrated in Figure 3.

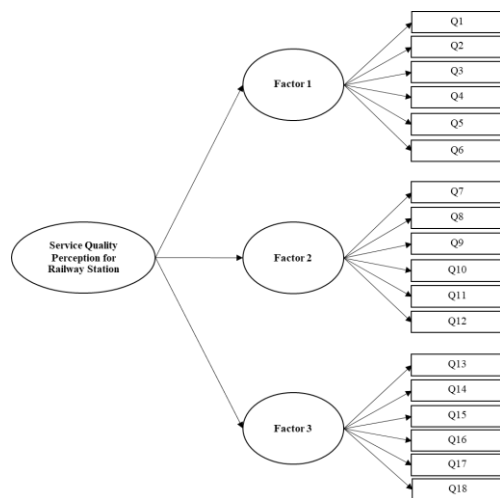


Figure 3. Example of Second Order Confirmatory Factor Analysis

Results

Descriptive statistics

A total of 370 respondents were collected and classified into 7 characteristics as shown in Table 2. According to a basic data analysis, it illustrated a ratio of the female over the male with 46.8% and 53.2%, respectively. While respondents' age was classified into 6 groups, age group that uses the railway station the most is between 21-30 years with 35.9%, whereas group with age between 41-50 years is the least with only 7.0%. In addition, most of railway station users were student with 139 respondents or 37.6% and the group with income less than 10,000 baht (57.8%). Besides, the analysis found that the majority of respondent who used the railway station less than 1 time per month indicates a critical problem of Thai railway.

There are 18 indicators involving the users' perception toward railway station service quality. The correlation analysis was conducted to examine the empirical relationship between the indicators. The result illustrated that 170 correlation pairs of

indicators were significant at 0.01 (See Table 3) with a positive correlation coefficient between 0.25-0.75. The Bartlett's Test of Sphericity provided $\chi^2=3282.74$ (df=153, $p<0.001$) which is significant at the 0.01 level and Kaiser-Meyer-Olkin (KMO) close to 1 (KMO=0.919). These measurement indices, therefore, indicated that all 18 indicators were appropriated for Factor Analysis (Williams *et al.*, 2010). The normalization of the dataset was also conducted by using Skewness and Kurtosis in which the appropriate range of these values should be close to 0 (an acceptable criteria is between -1.50 and +1.50) (Muthén and Kaplan, 1985). The test result was in acceptable criteria and the data were normal distributed.

Exploratory factor analysis

As there are 18 indicators related to users' perception toward service quality of railway station, the indicators were grouped in to 3 factors by using Principal Component Analysis. The analysis result reveals that there was no indicator which provided factor loading less than 0.3; therefore, none of the indicators was cut off (Hyland and Dann (1987); Tabachnick and Fidell (2001); Osborne *et al.* (2008) recommended that factor loading values of 0.3 or greater should be taken into account). The results of EFA illustrated that all 3 groups of factors provided the eigen value greater than 1 as shown in Figure 4 and variance explained of 58.00% (Thompson, 2004). The first group of factors was defined as Service (Q14-Q18) with factor loadings between 0.594-0.770. The indicators in this group are relevant to the service providing in the railway station. For the second group factor was defined as Safety and Facilities which consisted of 9 indicators (Q1, Q2, and Q4-Q10) with factor loading values between 0.363-0.689. The last group factor related to Information which contained 4 indicators (Q3 and Q11-Q13) with the factor loading values between 0.561-0.821 (See Table 4).

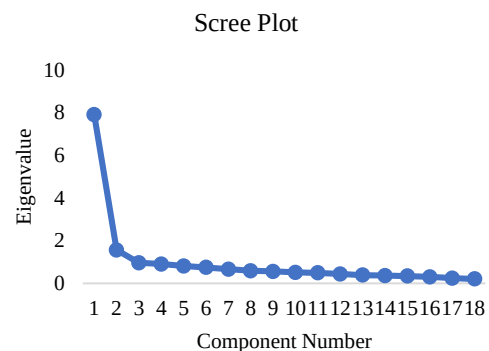


Figure 4. Scree plot of eigenvalue

Table 3. Correlation, mean, standard deviation, skewness, kurtosis

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18
Q1	1	0.52	0.39	0.48	0.33	0.37	0.52	0.45	0.36	0.29	0.34	0.41	0.51	0.39	0.37	0.25	0.44	0.36
Q2		1	0.47	0.41	0.45	0.46	0.57	0.49	0.46	0.33	0.28	0.37	0.43	0.39	0.45	0.38	0.45	0.39
Q3			1	0.48	0.35	0.26	0.36	0.44	0.39	0.34	0.41	0.48	0.42	0.39	0.33	0.34	0.26	0.27
Q4				1	0.32	0.34	0.50	0.44	0.38	0.34	0.37	0.42	0.46	0.40	0.36	0.31	0.38	0.42
Q5					1	0.30	0.47	0.50	0.36	0.36	0.45	0.41	0.34	0.27	0.31	0.30	0.25	0.32
Q6						1	0.65	0.39	0.47	0.34	0.26	0.35	0.34	0.42	0.45	0.43	0.59	0.47
Q7							1	0.56	0.57	0.32	0.31	0.37	0.51	0.49	0.47	0.40	0.54	0.51
Q8								1	0.53	0.39	0.38	0.41	0.50	0.48	0.50	0.42	0.41	0.39
Q9									1	0.40	0.33	0.35	0.46	0.40	0.46	0.42	0.45	0.43
Q10										1	0.41	0.36	0.33	0.35	0.27	0.32	0.28	0.35
Q11											1	0.64	0.42	0.27	0.27	0.27	0.29	0.36
Q12												1	0.66	0.39	0.34	0.33	0.34	0.35
Q13													1	0.46	0.41	0.40	0.39	0.44
Q14														1	0.65	0.41	0.53	0.47
Q15															1	0.50	0.58	0.54
Q16																1	0.41	0.36
Q17																	1	0.62
Q18																		1
M	3.77	3.62	3.42	3.58	2.86	3.61	3.64	3.25	3.42	3.23	3.01	3.36	3.49	3.90	3.69	3.80	4.25	3.85
SD	0.88	0.96	0.93	0.96	1.05	1.11	1.09	1.13	1.00	1.07	1.11	1.02	1.02	0.90	0.97	0.97	0.76	0.95
Sk	-0.48	-0.21	-0.26	-0.41	0.03	-0.35	-0.51	-0.02	-0.12	-0.40	-0.06	-0.31	-0.20	-0.50	-0.37	-0.67	-0.84	-0.46
Ku	0.04	-0.48	-0.20	-0.23	-0.42	-0.77	-0.53	-0.72	-0.57	-0.28	-0.66	-0.18	-0.56	-0.09	-0.30	0.37	0.58	-0.37

Note: M=Mean, SD=Standard deviation, Sk=Skewness, Ku=Kurtosis.

Correlation is significant at the 0.01 level (two-tailed) for all pairs. KMO = 0.919, Bartlett's Test of Sphericity Chi-square = 3282.74, df = 153, $p < 0.001$.

Reliability

For testing the reliability of a research tool or questionnaire, the results demonstrated that each factor had Cronbach's alpha values of 0.832, 0.87 and 0.804, respectively, which is acceptable since they are greater than 0.7 (Hair *et al.*, 2010). When considering Composite

Reliability (CR), it can be calculated using Equation 1:

$$CR = \frac{(\sum_{i=1}^n L_i)^2}{(\sum_{i=1}^n L_i)^2 + (\sum_{i=1}^n e_i)} \quad (1)$$

Where L_i denotes the standardized factor loadings of CFA, i is the number of n items, and e_i is

the error variance terms for a construct. As a result, CR values were found to be in acceptable criteria, or greater than 0.7 (Hair *et al.*, 2009). Numerically, composite reliability value of each factor was 0.831, 0.871 and 0.772, respectively.

Model fit indices

All factors were then analyzed by Second Order Confirmatory factor analysis to confirm the relationship of indicators in each group. As a result, the goodness-of-fit statistics were found as

Table 4. Results of EFA and CFA of perception in quality of service toward train station.

Code	Indicators	EFA (N=370)		Cronbach's alpha	CFA (N=370)		
		L	VE (%)		L	EV	CR
	Factor 1: Service		21.772	0.832		0.831	
Q14	Convenience and readiness to selling/book ticket at train station	0.737			0.68 4	0.532	
Q15	Adequacy to demand of counter service (selling/return /refund ticket)	0.770			0.74 6	0.444	
Q16	Providing correctly and extensively information (train schedule time and fare price table)	0.594			0.62 9	0.605	
Q17	Staffs provide information and suggestion politely	0.764			0.75 0	0.438	
Q18	Several ways to convenient and easily contact or inquire information	0.648			0.70 5	0.503	
	Factor 2: Safety and Facilities		18.534	0.870		0.871	
Q1	Appropriate number of security guards	0.479			0.66 4	0.559	
Q2	Extensive number of CCTV including the position.	0.660			0.69 6	0.516	
Q4	Structure and lifetime of the station	0.363			0.62 6	0.608	
Q5	Cleanliness and quality of food shop	0.666			0.54 4	0.704	
Q6	Adequacy of passengers' waiting seat	0.584			0.61 2	0.625	
Q7	Cleanliness of passengers' waiting seat	0.689			0.79 1	0.374	
Q8	Cleanliness of rest room at the station	0.550			0.72 1	0.481	
Q9	Appropriate number of trashes	0.547			0.70 3	0.505	
Q10	Adequacy to demand of parking lot at station	0.466			0.52 1	0.729	
	Factor 3: Information		17.694	0.804		0.772	
Q3	Providing appropriately plan for emergency situation (e.g. fire exit sign, announcement and etc.)	0.591			0.66 8	0.554	
Q11	Several ways to receive services' information (e.g. TV, radio, newspaper, internet and so on)	0.794			0.55 7	0.689	
Q12	Received clearly and correctly information	0.821			0.66 7	0.556	
Q13	Providing information regularly	0.616			0.80 7	0.349	

Note: L denotes factor loading, VE denotes variance explained, EV denotes error variance and CR denotes composite reliability.

follows: chi-square (χ^2)=229.761, degree of freedom(df)=113, P-value<0.001, root mean square error of approximation (RMSEA)=0.053, Comparative fit index (CFI)=0.964, Tucker Lewis index (TLI)=0.951, standardized root mean residual (SRMR)=0.039. The value of these goodness-of-fit metrics meet the acceptance criteria recommended by Hu and Bentler (1999) (i.e., the RMSEA value should be less than or equal to 0.06, the SRMR values should be less than or equal to 0.08 CF, and TLI values should be greater than or equal to 0.95). Additionally, p-value of χ^2 should be greater than 0.05 to meet the acceptance criteria (Kline, 2015). However, the greater sample size ($N>200$) may affect the chi-square value. Since this study has observations greater than 200 ($N=370$), the model is considered to be a good-fit (similar manner was also found in the study of Van Acker and Witlox (2010), Pasra *et al.* (2011), Morton *et al.* (2016); Chung *et al.* (2012)).

Model result

The Confirmatory Factor Analysis (CFA) result is shown in Table 4 and presented in Figure 3. The analysis confirmed that all 18 indicators which were divided into 3 groups of factors, were significant at 0.01 level. This implies that these indicators had ability to measure the level of users' perception toward service quality of railway station. Each factor group can be explained as follow:

Service factor: there were 5 indicators with factor loading values between 0.629 and 0.750. The indicator Q17 "Staffs provide information and

suggestion politely" provided the highest factor loading ($\beta=0.750$), followed by the indicator Q15 "Adequacy to demand of counter service (sell/return/refund ticket)" ($\beta=0.746$), and indicator with the lowest factor loading value is Q16 "Providing correctly and extensively information (train schedule time and fare price table)." ($\beta=0.629$).

Safety and Facilities factor: it totally consisted of 9 indicators. The result shows that the factor loading values were between 0.521-0.791. The indicator Q7 "Cleanliness of passengers' waiting seat" had the highest factor loading ($\beta=0.791$), and the indicator that provided the lowest factor loading ($\beta=0.521$) was Q10 "Adequacy to demand of parking lot at station".

Information factor: it consisted of 4 indicators with factor loadings in the range between 0.557-0.807. The indicator Q13 "Providing information regularly" had the highest factor loading of 0.807, and Q11 "several ways to receive services' information (e.g TV, radio, newspaper, internet and so on)" provided the lowest factor loading value of 0.557.

For the Second - order CFA, the result shows that the 3 factors from the first- order CFA could measure the level of satisfaction using train stations data at 0.01 level of statistical significance. All 3 factors gave similar factor loading values. Safety and Facilities provided the highest factor loading value of 0.988, followed by Service providing the factor loading value ($\beta=0.875$), and Information with factor loading value equal to 0.837 as shown in Figure. 5.

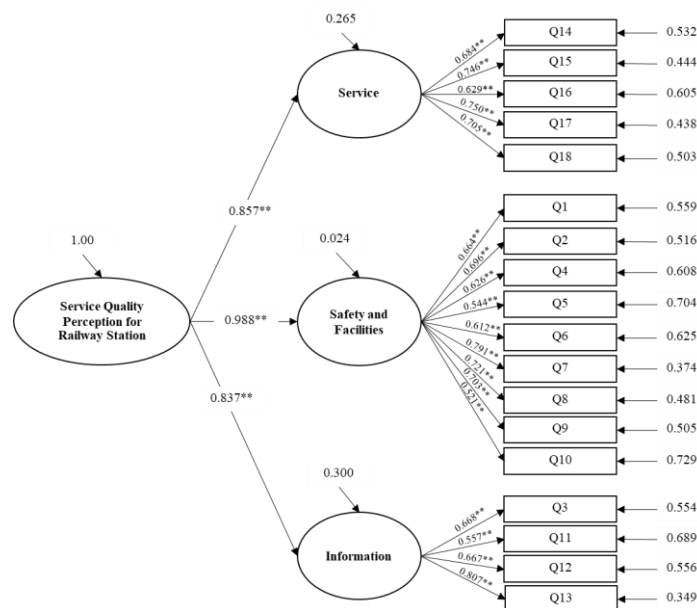


Figure 5. Result of Second Order Confirmatory Factor Analysis

Discussions

The analysis result demonstrated that the 18 indicators could be reduced by grouping them into 3 factors, namely, Service, Safety and Facilities, and Information. In addition, the second-order CFA has been analyzed to confirm all 3 factors acquired from the EFA as explained in above section. These 3 factors were also found to significantly influence users' perception on service quality of railway station with quite high factor loading value (greater than 0.5) at 0.01 level of statistical significance which is consistent with the previous studies (Amin and Isa, 2008; Sung Moon *et al.*, 2011; Watthanaklang *et al.*, 2016; Nambulee *et al.*, 2019; Champahom *et al.*, 2020a; Plidtookpai and Yoopetch, 2021). Considering the results Second Order CFA, Safety and Facilities in the station was the main factor that influence users' perception the most (especially, passenger who travel alone). Those includes the cleanliness of waiting seat, rest room and adequate trash bin. Currently, the government or related-agencies still pay attention slightly on the railway station improvement and development (Chantruthai *et al.*, 2014; Jaensirisak *et al.*, 2016). For example, the passengers' waiting seats or the rest rooms in the railway station were quite old, damaged and not in appropriate conditions for use. Additionally, plenty of garbage can be seen on the waiting seats and spread over the floor due to inadequate and hardly noticeable trash bin. Hence, the railway stations were in depraved condition and not ready for use. It can be seen that users valued and concerned about the facilities in railway station. Developing and maintaining facilities inside the station such as passengers' waiting seat (Agarwal, 2008), rest room (Eboli and Mazzulla, 2015; Permatasari, 2017) and cleanliness condition and adequate trash bins (Marinov *et al.*, 2014) are essential to attract the number of users in order to enhance motive to use railways station in Thailand (Lee *et al.*, 2016).

In term of service, the indicator related to "Adequacy to demand of counter service (sell/return/refund ticket)", influence users' perception toward quality of service the most. Considering the current situation, this result is intuitive. For example, despite many ticket counters, only some of them are operated (e.g., 1 or 2 out of 4 ticket counters) which are not sufficient to meet the users' demand. This results in waiting queues and delays due to a large number of users waiting to buy tickets. Such issue is also the reason of the decline of the number of railway station users (Das *et al.*, 2013). In addition, "staffs provide information and suggestion politely" also had an impact on the level of service

quality perception. Consistent result was also found in the works of Vanniarajan and Stephen (2008); Nandan (2010); Jomnonkwao *et al.* (2020a) which state that staff's services could influence the number of passengers and their perception toward service quality of railway station. Therefore, to promote and increase the number of users, the number of operating tickets counters should be increased. Moreover, staff training program should be conducted in order to build the cultivation of service-minded consciousness.

In terms of public relations or Information, State Railway of Thailand has already improved various fields but still lack regular publicity of information. Publicizing the useful information about railway station services to users potentially promote the quality of service in service provider. This subsequently increases the railway station use for both commercial and tourism (Saimyo, 2010). When achieve the users' satisfaction with the provided service, it could lead to the repeat service usage. The service information centers should be easy and convenient to access in order to provide information or answer questions to those who use the service (Brons *et al.*, 2009; Gupta and Datta, 2012).

Conclusions

According to 3 factors influencing users' perception toward service quality of train station in Thailand by using Factor analysis, the findings tend to be consistent with the current situation in Thailand. The number of users is continuously decreasing due to service quality and facilities. Therefore, service quality in railway station plays an important role in attracting users' demand toward rail transportation. Considering overall service quality result, transport agencies, service provider or related organization should provide more attention and action with policies or strategies which focus on enhancing service in order to attract more users.

Regarding facilities in railway station, waiting seats and rest room or toilet should be improved to be cleaner, better condition and always ready to use. Due to the cleanliness being one of the most important issues, facilities' cleanliness should be maintained to make positive reputation of the railway station. In term of service, the staff should get the appropriate and sufficient training for providing the polite service to users which could make them more satisfy while using the services. Likewise, the staff should be trained to offer service with a service mindset. Others important issues are managing queue, operating more ticket counters or

providing more ticket selling machine to meet users' demand and decrease delay time. Lastly, public relation authorities are recommended to promote the train transportation in term of its convenience to access or use railways. All in all, enhancing the service (through an upgrade of service quality of railway station), facilities and public relation were recommended to service provider in order to meet users' need, satisfaction and loyalty.

Limitations and Future research

This study considered only the context of Thailand. Therefore, factors or indicators of users' perception toward service quality of railway station possibly vary from individual countries and potentially depend on the different factors or indicators. Furthermore, in future study the fares should be taken into account, this factor might be affecting users' perception service quality and the loyalty as well.

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