

CAUSAL FACTORS INFLUENCING LOYALTY OF PUBLIC TRANSPORTATION USERS IN THAILAND

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ABSTRACT

The objectives of this research study were 1) to examine marketing mix (MM), service quality (SQ), user satisfaction (SA), and public transport user loyalty in Thailand (CL); 2) to develop a causal model influencing public transport user loyalty in Thailand; and 3) to study the direct and indirect influences of factors affecting public transport user loyalty in Thailand. This research study employed a quantitative research design. 400 samples of MRT public transport users in Thailand were conducted. Data used in this research were analyzed using descriptive statistics, Pearson's product-moment correlation coefficient, confirmatory factor analysis, and structural equation modeling.

The research study revealed that 1) service quality (SQ) and marketing mix (MM) were at the highest level, and public transport user loyalty (CL) and user satisfaction (SA) were at a high level. 2) The developed model was consistent with the empirical data with chi-square (χ^2) = 80.769, $df = 78$, $\chi^2/df = 1.036$, $P = 0.393$, $GFI = 0.977$, $AGFI = 0.955$, $RMSEA = 0.009$, and $RMR = 0.014$. 3) The said model consisted of a variable that directly influenced the public transport user loyalty in Thailand, including user satisfaction, and variables that indirectly influenced the public transport user loyalty in Thailand, namely marketing mix and service quality, affecting the public transport user loyalty in Thailand, which was obtained from user satisfaction.

Keyword: *marketing mix, service quality, user satisfaction*

INTRODUCTION

Traffic congestion caused by rapid urbanization in Southeast Asia has become a key challenge for sustainable development (Asian Development Bank, 2022). As a metropolis with a population of over 5.4 million (Royal Thai Government Gazette, 2024), Bangkok has suffered from persistent traffic congestion. An INRIX (2023) report stated that private vehicle users in Bangkok waste an average of more than 180 hours per year in traffic, which has affected their quality of life and has caused enormous economic losses. Such challenge leads public transportation, especially BTS Skytrain and Mass Rapid Transit Authority of Thailand also known as MRTA or MRT, to become a crucial infrastructure for solving urban mobility issues.

However, despite continuously developing the mass rapid transit (MRT) system, its limitations remain in terms of passenger density, coach car sufficiency, and inconsistent service experience (Arunsee et al., 2022). Previous research has found that service quality and passenger satisfaction were essential factors determining passenger loyalty towards public transport systems (Brady et al., 2005; Makanyeza & Mumiriki, 2016). Nevertheless, most research has focused on the said contexts in Western countries or in major global cities such as London, Tokyo, and Seoul (Stan et al., 2013); on the other hand, certain research in the contexts of developing countries, particularly in Thailand, is still limited and lacks clear theoretical relationships.

A theoretical framework explaining the relationships between service quality, expectations, and public transport user loyalty in a systematic manner includes Service-Dominant Logic (SDL), with an emphasis of co-creating values between service providers and service users (Vargo & Lusch, 2004), and Expectation-Confirmation Theory (ECT), with an explanation of

satisfaction resulting from comparisons between expectations and actual outcomes (Bhattacharjee, 2001). Applying these theoretical frameworks can assist in explaining remaining reasons for public transport user loyalty despite facing various limitations.

A research gap is evident that certain research studies on public transport user loyalty in Thailand have not covered specific Thai social factors, such as the influence of collective travel culture, trust in digital technologies employed in services (e.g., ticket purchase and route checking apps), and the impacts of dense urbanization. Therefore, this research study aimed 1) to examine marketing mix, service quality, public transport user satisfaction, and public transport user loyalty in Thailand; 2) to develop the causal model influencing public transport user loyalty in Thailand; and 3) to investigate the direct and indirect influences of factors affecting public transport user loyalty in Thailand, focusing on integrating theoretical frameworks and empirical testing in the context of developing countries.

LITERATURE REVIEW

Marketing mix and service quality are causal factors influencing public transport user loyalty, with satisfaction acting as a key mediator in this relationship. This model will facilitate in explaining the dynamics of the said factors in the context of public transport in Thailand and can be applied to the development of public transport systems with quality and sustainability in developing countries or cities where have faced similar public transport challenges.

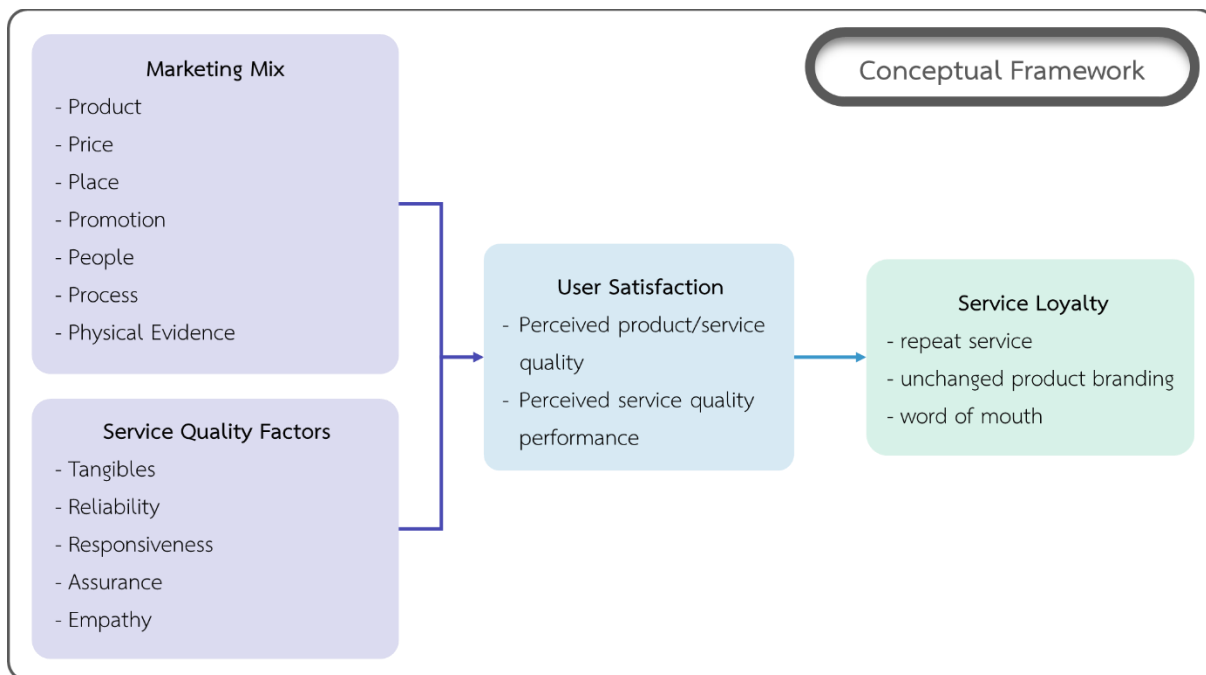


Figure 1 Conceptual Framework

Concepts and Theories Regarding Marketing Mix

Marketing mix is an essential concept utilized in any organizations in order for meeting customer needs and achieving marketing objectives (Kotler, 1997; Kotler, P and Armstrong, G., 2018), especially in the service business sector, which has been developed into the 7Ps concept, including Product, Price, Place, Promotion, People, Process, and Physical Evidence. This covers

product strategy design, value determination, customer experience creation, and quality service to create satisfaction and loyalty in the target market effectively (Kotler, 1997; Kotler & Armstrong, 2018; Booms & Bitner, 1981; Suppachai Murnpho, 2022), all of which have influenced the passenger experience (Booms & Bitner, 1981; Kotler & Armstrong, 2018). In the context of public transport, pricing and accessibility play a vital role in attracting passengers' attention (Eboli & Mazzulla, 2007); on the other hand, personnel quality and service consistency influence passenger satisfaction and loyalty (Ali et al., 2019). In developing countries such as Indonesia and India, price and reliability have been found to be more influential than physical factors (Budiono, 2009; Mouwen, 2015). From the above discussion, it can be assumed as:

H1: Marketing Mix factors have a positive and indirect influence on service loyalty through public transport user satisfaction.

Concept and Theories Related to Service Quality

The concept of service quality refers to an organization's ability to meet customer needs, covering both tangible and intangible aspects, which affect customer perception and satisfaction (Chachawan Tatsiwat, 2011; Parasuraman & Grewal, 2000; Zeithaml, V. et al., 1996; Hamari Hanner & Koivisto, 2017). In general, service quality assessment relies on the SERVQUAL model, consisting of five dimensions, namely tangibility, reliability, responsiveness, assurance, and empathy. Each dimension reflects the characteristics of quality services and is an important foundation for building customer satisfaction and loyalty. (Parasuraman, A., Zeithaml, V. A. & Berry, L. L., 1988; Parasuraman & Grewal, 2000; Zeithaml et al., 2002). This will become important indicators of passenger satisfaction (de Oña & de Oña, 2015). However, some debates are said to which dimension has the most influence. Some research studies in China and India insist that reliability and safety are the main variables (Cheng, 2010; Redman et al., 2013), but European research studies indicate that convenience and hygiene are more important than that (Tyrinopoulos & Antoniou, 2008). This difference reflects the importance of local contexts in service design. From the above discussion it can be assumed as:

H2: Service quality has an indirect and positive influence on service loyalty through public transport user satisfaction.

Concepts and Theories Related to Satisfaction

Customer satisfaction is experiencing feeling of pleasure when customers receive a service or product that meets or exceeds their expectations, which plays a vital role in repeat service and product repurchase decisions and positive word-of-mouth (Oliver, 1997; Ampon Shoosanuk, 2016; Somruthai Namtip and Orapan Khongmalai, 2014; Spiteri & Dion, 2004; Lewin, Biemans & Ulaga, 2010). In business sector, any kind of businesses should focus on creating experiences that exceed expectations through attentiveness, such as personalized service, giving delightful surprises and special moments, and so on to build long-term customer loyalty (Nicole F., 2020; Snigdha P., 2020; Zach, 2019). Satisfaction is often measured through conducting surveys to examine customer feedback, which basic information is provided to improve service quality and develop sustainable brand (Mullin, B. J., Hardy, S., & Sutton, & W. A., 2000; Oliver, R. L., 1997). In terms of public transportation, satisfaction acts as a mediator between service quality and user loyalty (Eboli & Mazzulla, 2007; Hapsari et al., 2017). Nevertheless, some research studies indicated that satisfied passengers may not develop their loyalty on public transportation if they find more convenient alternatives, such as e-hailing services (Friman et al., 2018). Therefore,

satisfaction may be a necessary but not sufficient condition for building user loyalty. From the above discussion, it can be assumed as:

H3: User satisfaction has a direct and positive influence on service loyalty.

Concepts and Theories Related to Service Loyalty

Service loyalty refers to a customer's intention on continuous support an organization through repeat services, persistence in existing services, or referrals to others to choose services. This is driven by a sense of appreciation and perceived superior values from the organization (Gronroos, 2000; Dick & Basu, 1994; Oliver, 1999; Giddens, 2002). Customer behavior and customer attitudes can be reflected as follows: 1) repeat services indicating long-term commitment; 2) branding consistency despite price changes; and 3) positive word-of-mouth, influencing on creating new customer targets and the organization's reputation (Aaker, 1991; Zeithaml et al., 1996; Pong & Yee, 2001). Therefore, loyalty is an important factor in building competitive advantage and long-term business sustainability. Research studies in Malaysia and Vietnam showed that trust and safety are the main drivers (Islam et al., 2020; Pham & Luu, 2022); on the other hand, in Europe, environmental and sustainability factors play a prominent role (Redman et al., 2013). This suggests that "loyalty" is a multidimensional concept that must be interpreted in terms of cultural contexts and urban structures.

RESEARCH METHODOLOGY

This research study is a quantitative research design due to aiming to test hypotheses and examine the causal relationships between various variables that have an influence on public transport user loyalty. The advantages of quantitative research are data collection from a large sample and systematic and repeatable statistical analysis (Creswell & Creswell, 2018). This is consistent with the research questions that aims to examine structural relationships and to test theoretical models to be in accordance with empirical data.

1. **Data Collection Period:** This research data was collected from September 2024 to February 2025, which was obtained from requested cooperation from MRT (Mass Rapid Transit) users in order to complete a questionnaire regarding the causal factors that influences public transport user loyalty in Thailand.

2. **Sample Population:** The study population consisted of MRT (Mass Rapid Transit) users, whose population cannot be accurately identified. The sample size was determined using Taro Yamane's formula (1967). The sample in this research was 400 participants utilizing non-probability sampling and convenience sampling.

Limitations: Non-probability sampling may introduce sampling bias, such as lack of representativeness of the population or over-representation of samples with certain specific characteristics. However, to alleviate these limitations, the research data was collected from multiple time periods and multiple MRT stations to increase sample diversity.

3. **Research Instrument:** The research instrument used in this quantitative research was a questionnaire on the causal factors that influence public transport user loyalty in Thailand, which marketing, service, satisfaction and loyalty variables are covered.

4. Research Instrument Testing

4.1 The questionnaire was consulted with 5 experts to examine the validity of the content, language usage, and the index of item objective congruence (IOC) which was between 0.60 - 1.00 and to improve the details of the questionnaire (Rovinelli, R. J., & Hambleton, R. K., 1997).

4.2 The reliability of the questionnaire was conducted by using Cronbach’s Alpha to test the question items to be in the same direction and consistency. If the analyzed value is 0.7 or higher, it shows that the said questionnaire is reliable and can be used to test hypotheses as well as being used in further research processes. Therefore, the said data were obtained from conducting the reliability using only the 5-level rating scale (Kritsada Tangchaisak, 2016). The result of questionnaire reliability was equal to 0.870.

5. Data Analysis

5.1 Data characteristics were explained by employing descriptive statistics, frequency; demographic factors conducted by using percentage; and using mean and standard deviation to describe the different levels of opinions on marketing mix factors, service quality, public transport user satisfaction, and public transport service loyalty, with criteria for interpreting scores of (Khazanie. R., 1996; Chachawan Ruangraphan, 2000).

| Mean | | Level |
|-------------|----------|----------|
| 4.20 - 5.00 | refer to | Highest |
| 3.40 - 4.19 | refer to | High |
| 2.60 - 3.39 | refer to | Moderate |
| 1.80 - 2.59 | refer to | Low |
| 1.00 - 1.79 | refer to | Lowest |

5.2 Hypothesis Testing Using Inference Statistics

Inference data analysis in this research was conducted with Structural Equation Modeling (SEM) due to the technique that can test causal relationships between latent variables and observed variables in the systematical manner and assists in evaluating the consistency of the theoretical model with empirical data in an efficient way (Byrne, 2010; Hair et al., 2019). Before the analysis, the normal distribution of the said data was examined with the consideration of skewness of not exceeding ± 3 and kurtosis of not exceeding ± 10 , which is considered an acceptable criterion for the use of Maximum Likelihood parameter estimation method (Kline, 2016).

The Confirmatory Factor Analysis (CFA) was utilized to evaluate construct validity by considering standardized factor loadings, which should be at least 0.30 and statistically significant, to reflect the appropriateness of the observed variables in explaining the relevant latent variables (Byrne, 2010). In addition, convergent validity was evaluated by considering Average Variance Extracted (AVE), which should be at least 0.50 (Fornell & Larcker, 1981), as well as examining composite reliability (CR), which should be at least 0.70 (Hair et al., 2019) for the model stability to be confirmed.

The overall model fit was evaluated by considering Goodness-Of-Fit indices, including the Chi-Square per Degree of Freedom (χ^2/df), which should be less than 3.00 (Hair et al., 2010), Comparative Fit Index (CFI), and Tucker-Lewis Index (TLI), which should be not less than 0.90, and General Fit Index (GFI), which should be not less than 0.90 (Hu & Bentler, 1999), as well as Root Mean Square Error of Approximation (RMSEA), which should not exceed 0.08, to confirm that the said model is appropriate for explaining the said empirical data.

In summary, the use of SEM in this research study facilitates in testing hypothesis and evaluating the developed causal model within the theoretical framework, relied on international standards for construct validity, variable reliability, and model fit. This increased the validity and reliability of the research findings. More importantly, the limitations of SEM method

should be, however, aware, because of sensitivity to sample size and data quality. If sample size is insufficient or data is non normally distributed, it can impact the precision of model estimates and fit indices (Kline, 2016; Hair et al., 2019).

RESEARCH RESULTS

1. A Study of Factors Influencing the Public Transport User Loyalty in Thailand

1.1 Research Findings of Personal Factors

A survey of 400 MRT users participated in the survey, comprising 160 males (40.00 percent) and 240 females (60.00 percent). The majority of MRT users were aged 26-30 years old (41.80 percent), employed as private employees (33.30 percent), single (76.80 percent), and had a monthly income of 20,001-25,000 baht (22.00 percent).

1.2 Research Findings of Factors Influencing the Public Transport User Loyalty in Thailand

The study of factors influencing the loyalty of public transport users in Thailand was found that all of the latent variables and observed variables had high levels of opinions. The highest level was Service Quality (SQ) with the highest mean (Mean = 4.34, S.D. = 0.37), followed by Marketing Mix (MM) with the highest mean (Mean = 4.33, S.D. = 0.39), Customer Loyalty (CL) with a high mean (Mean = 4.09, S.D. = 0.37), and Satisfaction (SA) with a high mean (Mean = 3.99, S.D. = 0.49) in a respective manner. When the normal distribution of data of the observed variables was considered from the skewness and kurtosis, it showed the skewness between -1.02 and -0.05 and the kurtosis between -0.49 and 1.78. This indicates that the observed variables had a normal distribution in accordance with the criteria of acceptable skewness and kurtosis under the normal curve with the skewness not exceeding 3.00 and kurtosis not exceeding 10.00. It indicates that the data obtained from all observed variables have a normal distribution, showing that passengers give more importance to service quality and marketing management than other factors.

2. Development of the Causal Model of Factors Affecting Public Transport User Loyalty in Thailand

2.1 Assessment of Data Suitability to Examine the Relationships Between Observed Variables Under the Same Latent Variables and Between Latent Variables

An analysis of the relationships between observed variables under the same latent variables using Pearson's product moment correlation coefficients revealed positive correlations between 17 observed variables, with correlation values (r) ranging from 0.02 to 0.81. Furthermore, when the correlation coefficients between observed variables under the same latent variables were considered, all pairs of observed variables under the same latent variables were significantly correlated at the 0.05 level. Therefore, the said model is suitable for analyzing the structural equation modeling (SEM).

Analysis of the relationship between latent variables to examine the problems of correlation between latent variables (Multicollinearity) was carried out with the Pearson's product moment correlation coefficient between 5 latent variables, namely marketing mix variables, service quality, satisfaction, and service loyalty. It was found that the multicollinearity in the model had a positive correlation size ranging from 0.01 to 0.71, which can indicate that there was no problem of the said correlation between independent variables (Multicollinearity).

2.2 Confirmatory Factor Analysis by Considering Construct Validity

Confirmatory factor analysis to examine the construct validity was performed to determine the suitability of the measurement model. The results of the measurement model testing of the observed variables in terms of exogenous and endogenous latent variables revealed that the

marketing mix measurement model, the service quality measurement model, the satisfaction measurement model, and the service loyalty measurement model were all consistent with the empirical data. Therefore, the observed variables in terms of exogenous and endogenous latent variables are suitable for analyzing structural equation modeling.

2.3 Causal Model Fit Analysis by Considering Model Performance

The causal model fit analysis with empirical data can be considered based on model performance. This was found that all observed variables effectively measure the latent variables in the model, and the factor loadings of all observed variables were above 0.30, different significantly from zero at the 0.01 level, and were all positive, ranging from 0.037 to 0.999. This indicates a unidirectional variable relationship. All observed variables effectively measure the latent variables in the model, and the Square Multiple Correlation (R²) of all latent variables ranged from 0.001 to 0.955.

Table 1: Model fit index of causal relationship of public transport user loyalty in Thailand

| Index | Consideration Criteria | Statistics | Testing Result |
|------------|------------------------|------------|----------------|
| 1. CMIN/df | < 3.00 | 1.036 | Pass |
| 2. GFI | ≥ 0.90)close to 1.00) | 0.977 | Pass |
| 3. AGFI | ≥ 0.90)close to 1.00) | 0.955 | Pass |
| 4. CFI | ≥ 0.90)close to 1.00) | 0.999 | Pass |
| 5. TLI | ≥ 0.90)close to 1.00) | 0.999 | Pass |
| 6. RMSEA | < 0.05)close to 0) | 0.009 | Pass |
| 7. SRMR | < 0.05)close to 0) | 0.09 | Pass |
| 8. HOELTER | > 200 | 493 | Pass |

According to Table 1, it was found that the developed causal model of public transport user loyalty in Thailand was consistent with the empirical data. The model fit index of such model had following values: Chi-square (χ^2) = 80.769, degrees of freedom (df) = 78, P = 0.393, χ^2/df = 1.036, Goodness-of-Fitness Index (GFI) = 0.977, Adjusted Goodness-of-Fitness Index (AGFI) = 0.955, Root Mean Square Error of Approximation (RMSEA) = 0.009, and Root Mean Square Residuals (RMR) = 0.014, which reflects that the said model had a high level of model fit (Hu & Bentler, 1999; Kline, 2016).

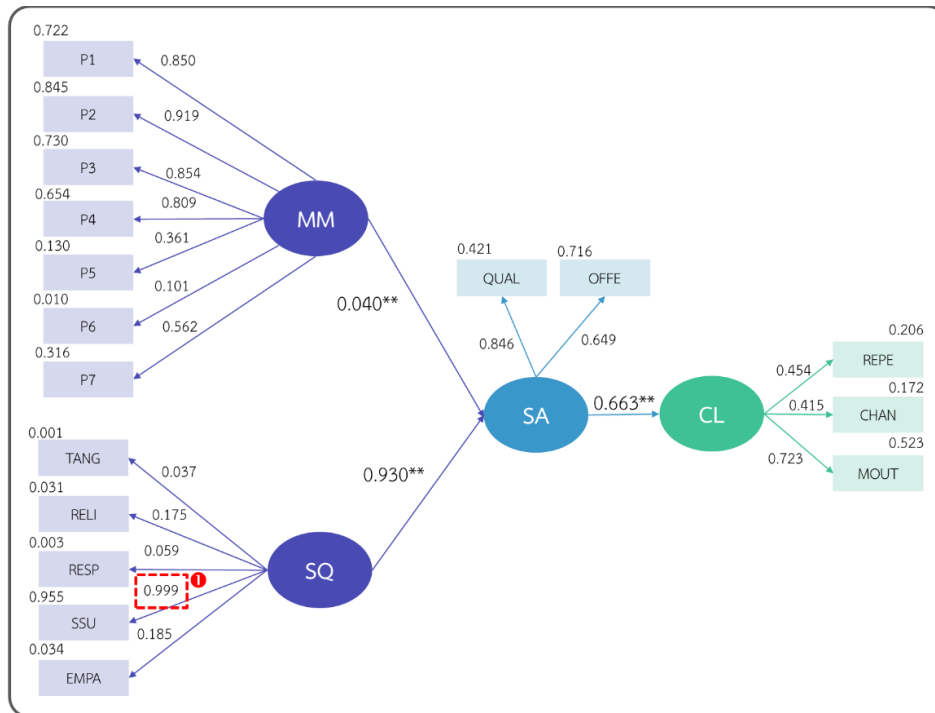


Figure 2 Causal Model of Public Transport User Loyalty in Thailand

3. A Study of Direct and Indirect Influences of Causal Factors on Public Transport User Loyalty in Thailand.

The research findings showed that the variables with a direct and positive influence on satisfaction included marketing mix (MM) and service quality (SQ), which co-predicted satisfaction (SA). The variable with a direct and positive influence on service loyalty was satisfaction (SA). The variables with a positive and indirect influence on service loyalty were marketing mix (MM) and service quality, which influenced customer loyalty (CL) through satisfaction (SA).

Table 2: Parameter of Direct Effect (DE), Indirect Effect (IE), and Total Effect (TE).

| Causal Factors | Satisfaction (SA) | | | Customer Loyalty (CL) | | |
|----------------------|-------------------|--------------------|----------------------|-----------------------|--------------------|----------------------|
| | Total Effect (TE) | Direct Effect (DE) | Indirect Effect (IE) | Total Effect (TE) | Direct Effect (DE) | Indirect Effect (IE) |
| Marketing Mix (MM) | 0.040* | 0.040** | - | 0.040** | - | 0.040** |
| Service Quality (SQ) | 0.930* | 0.930** | - | 0.930** | - | 0.930** |
| Satisfaction (SA) | - | - | - | 0.663** | 0.663** | - |
| R ² | 0.45 | | | 0.71 | | |

Statistic Values: $\chi^2 = 80.769$, $df = 78$, $P = 0.393$, $\chi^2/df = 1.036$, $GFI = 0.977$, $AGFI = 0.955$, $RMSEA = 0.009$, $RMR = 0.014$

** Statistically significant at the 0.01 level.

According to Table 2, the structural model can be written as:

$$1) SA = (0.040) (MM) + (0.930) (SQ)$$

$$2) CL = (0.040) (MM) + (0.930) (SQ) + (0.663) (SA)$$

From the analysis of direct, indirect, and total effects, it was found that satisfaction (SA) was most directly affected by service quality (SQ) ($\beta = 0.930$, $p < 0.01$). Customer loyalty (CL) was most directly affected by satisfaction (SA) ($\beta = 0.663$, $p < 0.01$). In terms of the indirect effects, public transport user loyalty was significantly affected by service quality (SQ) through satisfaction (SA) ($\beta = 0.930$, $p < 0.01$). Therefore, it can be concluded that service quality (SQ) has the greatest impact on public transport user loyalty in a direct and indirect way, with satisfaction acting as a mediator.

The theories related to the causal relationship between service quality, satisfaction, and loyalty are confirmed by certain research findings, which is consistent with research studies in many countries (Parasuraman et al., 1988; Oliver, 1999). It is noteworthy that although marketing mix has a positive effect, it has a very small parameter value ($\beta = 0.040$). This states that MRT passengers place more importance on service quality than marketing activities, differing from some hypotheses. This may explain that in the context of public transportation, factors such as convenience, safety, and punctuality, are more important in building the loyalty of public transport users than communication or marketing promotions.

4. Policy Recommendations Related to Causal Factors Influencing Public Transport User Loyalty in Thailand

A study of the causal factor model influencing public transport user loyalty in Thailand revealed that the factor with a direct and positive influence on public transport user loyalty was satisfaction, consisting of perceived product/service quality and perceived service performance quality. The variable with the highest direct and positive influence on public transport user loyalty was perceived product/service quality ($B = 0.846$) and perceived service performance quality ($B = 0.649$). Secondly, the factor with an indirect and influence on public transport user loyalty was marketing mix factors, consisting of product/service, price, places for distribution channels, promotion, personnel, process, and physical environment. The service quality factors included service tangibility, reliability, customer responsiveness, customer assurance, and customer empathy. The variables with the highest indirect and positive influence on public transport user loyalty were service quality and customer assurance ($B = 0.999$), followed by marketing mix, namely places ($B = 0.854$), product/service ($B = 0.850$). Consequently, the service quality is supposed to be developed in any organizations to be more efficient and able to respond to customer needs and expectations, which results in customer satisfaction and customer loyalty in continuous and repeat service. This can be summarized as follows:

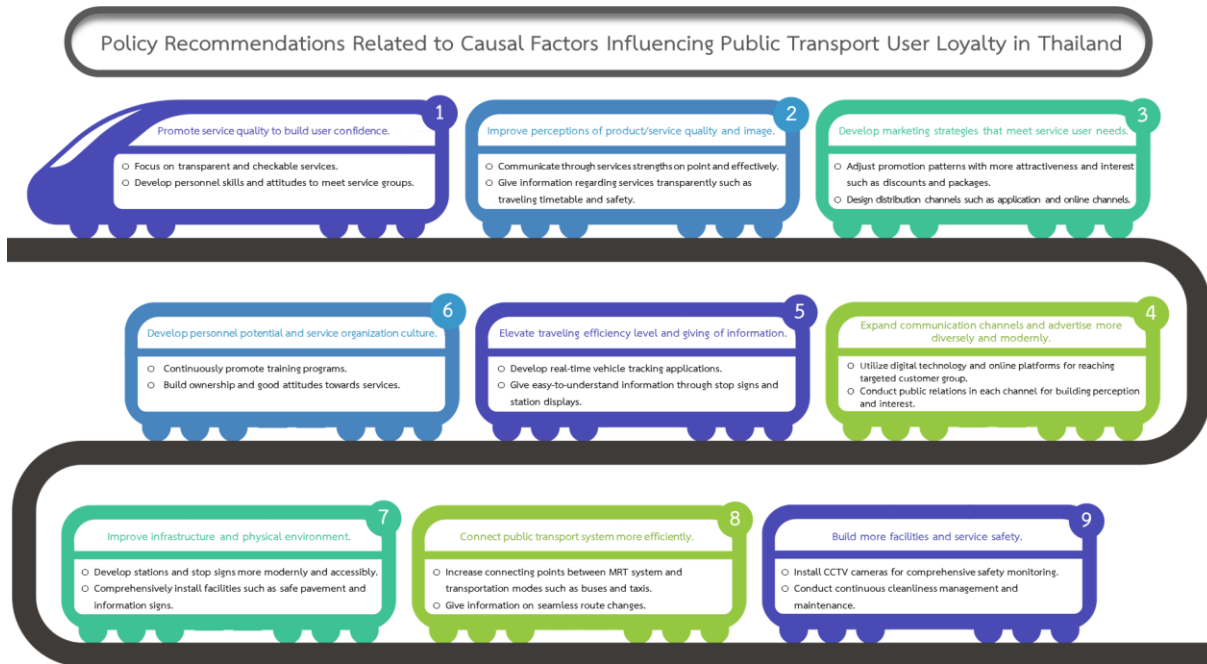


Figure 2 Policy recommendations regarding the causal factors influencing public transport user loyalty in Thailand

- Improving service quality: Building confidence and reliability should be focused on by entrepreneurs through a personnel training program for appropriate skills and attitude acquisition. Providing transparent and accountable services will also assist in building customer satisfaction and enhance competitive advantages.
- Enhancing an organization image and communication: Entrepreneurs should develop clear and concise communication and image management, as well as providing transparent information on travel timetables, safety, and convenience, and prompt customer feedback responses.
- Developing marketing factors: Components of product, price, place, and promotions should be tailored to target customer groups, such as creating promotions or packages for regular users, and increasing online platform channels for ease of access and payment.
- Providing public relations and digital technology: Advertising channels should be expanded through using online platforms and digital media to reach passengers comprehensively and modernly, which can enhance more competitiveness and clear and effective communication with users.
- Improving the infrastructure and physical environment: Bus stations and bus stops should be modernized, convenient, and safe, for example, providing amenities, lighting, clear information signs, and appropriate waiting areas for passenger experience enhancement.
- Integrating transportation systems: Connectivity between MRT and other transportation modes should be enhanced, such as buses and taxis, which can be improved by

designing stations and connecting points to facilitate changes of travel modes and giving comprehensive and easy-to-understand travel information.

- Maintaining standards for time and service information. Operators should maintain punctuality and technology usage such as real-time train tracking applications and station information displays to enhance customer convenience and build user confidence.

- Developing human and organization: Operators should promote continuous training programs and develop personnel to enhance their knowledge, expertise, and positive attitudes towards services, which builds positive and long-term relationships with customers and maintain customer retention.

- Improving safety and hygiene: Safety measures should be more emphasized such as installing CCTV cameras, maintaining emergency equipment, and maintaining regular cleaning to ensure passenger confidence and safety throughout passenger travel.

DISCUSSION AND CONCLUSION

According to the research study of causal factors influencing public transport user loyalty in Thailand, key points were examined for discussion as follows:

Public transport user loyalty in Thailand is indirectly influenced by marketing mix through positive feedback due to marketing mix factors serving as a tool to meet the needs and satisfy for target customer groups. Most public transport users are likely to prioritize travel safety and traveling timetable in order to seek convenient, on-time, and fast travel. They also consider appropriate prices for the economic conditions, staffs dedicated to providing advice/consultations and facilitating users through convenient service processes, advertising and conducting public relations through various media to quickly learn about news and events. This leads to customer satisfaction and customer loyalty, eventually resulting in word-of-mouth.

This result aligns with the loyalty theory carried out by Oliver (1999), explaining that satisfaction is a key mediator between service quality and customer loyalty. It also supports Parasuraman, Zeithaml, and Berry's (1988) SERVQUAL concept, which emphasizes that customer perception and customer loyalty are directly influenced by service quality and marketing elements. This is also consistent with the project of Krit Thawatchaiwisut, Mana Luksamee-Arunothai, and Chittawan Chanagul (2023), who found that marketing mix factors such as safety, convenience, and advertising, have an influence on the decision to BTS Skytrain services. However, this research result reflects a difference from some other studies as follows: marketing mix factors showing a relatively low direct influence on customer loyalty (0.040) compared to service quality and customer satisfaction. This may indicate that public transport users in Thailand are more likely to prioritize direct service quality experiences over marketing communications.

Service quality have indirect influence on the public transport user loyalty in Thailand through positive feedback because service quality is the heart of service business operations and can induce satisfaction leading to loyalty. The supporting factors include service tangibles, reliability, responsiveness, assurance, and empathy, which assists in building user confidence. The said research results are consistent with the work project of Noppawan Suksakunee and Suprasith Jarupathirun (2024), who studied the service quality of MUVMI electric tricycles and public motorcycles in Bangkok. The results were found that all five dimensions of SERVQUAL have an

influence on customer satisfaction and public transport service choices. This also aligns with the conceptual framework of Parasuraman et al. (1988), stating service quality as the most important factor that determines customer value perception.

Public transport user loyalty in Thailand is positively directly affected by satisfaction because perceived service quality, price, places for distribution channels, and facilities have a direct influence on customer loyalty building. This reflects that satisfaction acts as a mediator between service quality and customer loyalty and is in line with the project conducted by Islam, Usman, and Junaid (2023), who studied the relationship in the airline industry, stating that satisfaction is an important mechanism that connects between service quality and customer loyalty.

Research Limitations

There are limitations in this research study that should be considered as follows:

- The sample size was limited to MRT passengers. It may not cover other public transport modes, such as buses, songthaews, or provincial transportation systems.
- The cross-sectional survey design was utilized in this research study, which cannot measure long-term customer loyalty changes.
- The quantitative analysis was solely used without going into deep detail in qualitative aspects to gain a deeper understanding of passenger experiences.

Future Research Directions

- The studies fields should be expanded and investigated to other transportation modes, such as BRT, buses, or regional transportation, to compare certain differences across different contexts.
- A longitudinal study should be employed to track changes in customer loyalty over time.
- Qualitative research methods should be incorporated, such as in-depth interviews, to address why passengers become loyal to the public transport service or discontinue public transport services.

Recommendations

Recommendations in Research Results

Based on the results of this research, service quality has the greatest influence on satisfaction, and satisfaction is a key mediator affecting public transport user loyalty in Thailand. Therefore, the improvement of service quality should be prioritized, particularly in punctuality, safety, hygiene, and system reliability, as well as proper and continuous maintenance. Service personnel development is also an essential factor because passenger confidence and satisfaction can be directly built by appropriate communication and responsiveness. Furthermore, the improvement of ticketing systems through a variety of channels, including online, automated machines, and agent-based services, will facilitate and meet increasing customer demand in the future. Meanwhile, marketing communications should focus on building quality awareness rather than solely on price competition. For example, emphasizing safety measures, punctuality, or travel convenience will assist passengers in perceiving the true quality of the service and instill satisfaction, leading to long-term loyalty.

In terms of policy, relevant agencies should establish minimum standards regarding service quality and establish transparent monitoring and reporting systems for service provider motivation to maintain and improve service quality in a continuous manner. Furthermore, budgets should be

allocated for maintenance and passenger information systems prior to investment in new route expansion. This is because, in developing countries, the investment in the improvement of service quality can often produce more tangible results regarding passenger satisfaction and loyalty over solely infrastructure expansion. Therefore, the said recommendations are not only appropriate for the Thai context but also applicable to developing countries and urban areas facing similar public transport challenges, which share complicated resource constraints and passenger needs.

Recommendations in Future Research

The data utilized in this research should be more diversely collected, as well as data obtained from quantitative questionnaires and in-depth interviews to obtain more comprehensive and in-depth qualitative data. Comparative studies across cities or developing countries should be carried out to test the model fit in different contexts and strengthen its theoretical citations. Furthermore, the longitudinal study of public transport passengers will assist in understanding how satisfaction can persist and change over time and more clearly examine the satisfaction role as a moderator. In addition, field experiments, such as rescheduling train travel timetables, adding real-time data, or developing staff training programs, can serve as pilots to directly examine the causal effects of improvements on customer satisfaction and customer loyalty. Meanwhile, analyses of public transport passenger subgroups are essential because different passenger groups may prioritize different factors. A deeper understanding in these topics will facilitate in service providers design to become more targeted policies or measures.

In conclusion, this research findings suggest that the improvement of service quality and user satisfaction management are more important over solely focusing on marketing strategies, and it also highlights the need of building quality transport systems to build long-term confidence and customer loyalty. This will be useful to policymakers, service providers, and passengers in Thailand and in other developing countries facing similar public transport challenges.

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