



The impact of service quality and price on passengers' loyalty towards low-cost airlines: The Southeast Asia perspective

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ABSTRACT

The objective of this study is to examine the impact of service quality by adopting AIRQUAL model and price on passengers' loyalty through the linkage of passengers' satisfaction toward low-cost airlines from the perspective of Southeast Asia. With 200 questionnaires analyzed, the results suggest that service quality and price have a positive significant impact on passenger satisfaction, and as a result lead to passengers' loyalty. Besides, the findings of this research also confirm the mediating role of customer satisfaction between service quality and loyalty, price and loyalty separately, which implies that customer satisfaction is a vital factor for an LCCs to survive in such a highly competitive aviation market.

1. Introduction

Due to the epidemic spread in Southeast Asia, the business environment has changed rapidly and greatly. Service-providing companies, especially the airlines, are bleeding and facing great challenges that they have never faced before as their flights have been cancelled and their aircrafts have been grounded for months to tackle with the COVID-19 pandemic. At such a critical time, making airlines survive is a big issue and priority task to be considered seriously by management of airlines as well as government. Therefore, the question on how to retain the customers and satisfy their expectations is a crucial factor to be explored in order to ensure the survival of airlines. According to Kotler et al. (1996), it is much easier to obtain purchases from old passengers compared to new passengers, which indicates those old passengers are more loyal than the new passengers. In other words, it is vital for airline companies to retain their current customers from switching to any other airlines (Calisir et al., 2016). Thus, it can be seen that passengers' loyalty is one of the competitive strengths that need to be cultivated for airlines (Akamavi et al., 2015) because it is related to passengers' repurchase intentions (Dolnicar et al., 2011), which in return helps airlines to build a corporate advantage to earn above-normal returns. Therefore, developing and adopting the right policy and strategies to enhance passengers' loyalty is an important and significant strategy in such a rapidly changed and competitive environment (Vlachos and Lin, 2014).

Measuring customer loyalty in the aviation industry is becoming ever more frequent and relevant due to the fact that the delivery of high-

quality service is essential for airlines' survival and crucial to the competitive strengths of the airlines (Tsafarakis et al., 2018). As a result, providing high-quality service has become a requirement in the market among air carriers. Even if airline companies might have a good willingness to provide superior services to all their customers, they often failed to fulfill the needs of their customers because they cannot satisfy the expectations of different range of customers, which is impractical and non-profitable. In addition, service quality provided by airlines does positively affect passengers' satisfaction (Hussain et al., 2015; Saha and Theingi, 2009; Singh, 2015), enhances passengers' loyalty (Akamavi et al., 2015; Lee et al., 2001; Mikulić and Prebežac, 2011; Saha and Theingi, 2009). As a result, studying service quality can provide airlines with a powerful instrument to obtain their business strategic goals (Wu and Cheng, 2013).

Compared with full-service airlines, low cost carriers (LCCs) focus only on the most basic transportation function. Other elements of the product are either not offered separately, or not offered at all, i.e. additional charges for luggage, food and beverage, hot seats (Schlumberger and Nora, 2014) and etc. The LCCs aims at saving operational cost and then translates the cost into lower, more affordable airfares for the traveling public, thus, attract more passengers to travel by their flights (Schlumberger and Nora, 2014). However, the previous studies exclude the element of price when studying passengers' behavioral intentions (Ali et al., 2015; Farooq et al., 2018) as these two past studies aim at full-service airlines, and the passengers who take full-service airlines are less price sensitive. Based on the research conducted by

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Curry and Gao (2012), the price has a large relationship with customer loyalty among leisure travelers, thus, it can be seen that the impact of airfares should be taken into account when conducting research to explore passengers' loyalty, especially in the LCCs industry.

In order to fill-up these research gaps, this paper proposed and tested a conceptual framework engaging both service quality (as AIRQUAL model was the first model studied from the context of LCCs in Southeast Asia) and price in order to gain a better understanding of the impacts of these two attributes on customer loyalty. Furthermore, this study also extends previous literature by examine the mediation effect of satisfaction in explaining passengers' loyalty in Southeast Asian aviation market, a topic that has been rarely studied in previous literature altogether. Against this background, the main research objectives of this study are to examine service quality based on AIRQUAL model and price affecting customer loyalty among LCCs passengers and to examine mediating effects (satisfaction) on the relationship of services quality, price and loyalty.

Specifically, this study make contributions as follows: First, it adds to the very limited research on Southeast Asia aviation market in terms of airline service quality, the importance of appropriate air tickets pricing, satisfactions and loyalty. Besides, it provides empirical evidence for the relationship between passengers' satisfaction and passengers' loyalty in the Southeast Asia.

Second, the findings of this research will not only provide the policymaker and the management of LCCs with useful information on how to develop competitive strategies to retain customers after the ease of Covid-19, but also reveal what are the important items or factors appreciated most by passengers, which will help LCCs management in deciding on how to allocate their tangible resources effectively. The faster LCCs recap their old passengers, the easier for those LCCs to survive and to get recovery from the pandemic outbreak in the Southeast Asia. Therefore, this paper is practical and realistic to reflect current economic situations.

Third, from the perspective of conceptual framework, this paper provides evidence to the influence of service quality and price on passengers' loyalty through passengers' satisfaction. Besides that, this study is the first study adopts the AIRQUAL model as five dimensions of service quality to explore its impact on passengers' loyalty in the context of LCCs in Southeast Asia. To our knowledge, there has been no study related to the aviation market, especially, LCCs, in which all the above mentioned factors are being modelled together. Therefore, this research extends the previous literature and enlighten better understanding of previous studies. Further, according to Oliver (1999), passengers is more loyal once they get satisfied, which indicates passengers' satisfaction is a big driven factor to retain customers in the aviation industry. As a result, the mediating effect of satisfaction is studied in this paper, indicating the "satisfaction-loyalty" full circle is introduced as most of the previous studies only focus on passengers' satisfaction (Farooq et al., 2018; Ali et al., 2015) and passengers' loyalty separately (Calisir et al., 2016; Akamavi et al., 2015; Dolnicar et al., 2011; Mikulić and Prebežac, 2011).

2. Literature review

2.1. Service quality (SQ) and AIRQUAL model

Service quality is considered as the function of the difference between service expected and the customers' perceptions of the actual service received (Parasuraman et al., 1988). In order to assess the service quality, a comprehensive model was first proposed by Parasuraman et al. (1985), consisting of tangibles, reliability, responsiveness, understanding the customers, access, communication, credibility, security, competence, and courtesy. Later, the same model was developed and simplified, including tangibles, reliability, responsiveness, assurance, and empathy, and renamed as SERVQUAL (=Performance-Expectations) (Parasuraman et al., 1985). This model has been widely utilized in academic research (Leong et al., 2015; Chen

et al., 2019). Even though this model provides a comprehensive measurement to study service quality, it has also been criticized as it compares customers' perception of service received and customer's expectations (Robledo, 2001).

Due to the criticism of the SERVQUAL scale, another service quality measurement scale, named SEVPERF (=Performance), was established by Cronin and Taylor (1992). The difference between SEVPERF and SERVQUAL is that SEVPERF only evaluates the equality of service by the performance of service received without the consideration of expectation. However, this model has also been accused of being too generic and unable to capture all dimensions in the context of airlines (Ali et al., 2015; Farooq et al., 2018).

Consequently, various scholars have tried to proposed various models to evaluate the quality of service provided by airlines. A model presented by Aksoy et al. (2003) categorized airline service quality into nine aspects for foreign airlines: i.e. personnel, food and beverage service, Internet services, cabin features, country of origin and promotion, in-flight activities, speed, punctuality, and aircraft. Meanwhile, eight aspects for domestic airlines: i.e. country of origin and promotion, cabin and personnel, in-flight activities, food and beverages services, punctuality and speed, Internet services, price, and free alcoholic drinks. Likewise, Jiang (2013) assessed the service quality by using 5 elements: flight experience, ground service, airfare and schedule, service reliability, and consistency. In addition, Mikulić and Prebežac (2011) considered ticket purchase experience, offer of flights and destination, flight experience, airport experience, service reliability as aspects of service quality.

Recent studies conducted by Chen et al. (2019) considered tangibility, reliability, responsiveness, assurance, empathy as the aspects of service quality of airlines. Moreover, Hussain et al. (2015) categorized service quality into six dimensions: reliability, responsiveness, assurance, tangibles, security and safety, and communication. While, a model developed by Wu and Cheng (2013) involved: i.e. iteration quality, psychological environment quality, outcome quality, and access quality. Further, Tsafarakis et al. (2018) suggested to use price policy, website, flight schedule and routes, airport services, during flight, after landing as dimensions to improve the quality of service.

With the purpose of resolving these inconsistencies, a comprehensive model, named AIRQUAL, was proposed by Ekiz et al. (2006) which the purpose is to assess the airline service quality. This AIRQUAL model consists of five aspects, i.e. airline tangibles, terminals tangibles, personnel service, empathy and airline image. Later this model was tested and validated by Nadiri et al. (2008) and then followed by Ali et al. (2015) and Farooq et al. (2018). In order to further validate this model, this study adopts the AIRQUAL scale for evaluating the impact of service quality on passengers' loyalty in the context of LCCs, whereby most of the previous studies have been conducted from the perspectives of full-service airlines. The following are brief descriptions of dimensions adopted by this study to explain all five aspects in the AIRQUAL model:

Airline Tangible (AT): Airline tangibles refers to the facilities and equipment inside the aircraft, i.e. seats, toilet, entertainment, air-conditioning, which directly determine the service quality of an airline (Farooq et al., 2018). It can be considered as one of the most significant and important dimensions of service quality in the aviation industry. According to Tsafarakis et al. (2018), airline tangibles can be defined as the inner environment of the aircraft, including cabin cleanliness, toilet cleanliness, comfortable seats, good internet service, and entertainment facility. Likewise, airline operations, cabin facilities can be described as dimensions of airline tangibles (Henderson et al., 2019). Based on the research conducted by (Koklic et al., 2017), airline tangibles can be referred to as physical surroundings represented by objects and subjects.

Terminal Tangibles (TT): Terminal tangibles is one of the most visible indicators to determine the service quality provided by airlines (Farooq et al., 2018). Check-in desk waiting time, check-in desk service, boarding efficiency, and staff service during board can be defined as one

dimension of service quality which is provided by the airport (Tsafarakis et al., 2018). Terminal tangibles is a determining factor that complements the quality of services supplied by the airlines. These services contain effective boarding signs, off-duty shops, available of trolleys at the airport, good air-condition system, friendly staffs, reliable security and control system, clean toilets and information counters (Ali et al., 2015).

Personnel Service (PS): Personnel service is a significant and valuable dimension of airlines' service quality, which can be described as the quality of service delivered by the airlines' staff (Farooq et al., 2018). Besides, personnel service can also be defined as the act of responsiveness that refers to the willingness to help passengers, provide prompt service, and respond quickly and immediately to passengers' requests (Hussain et al., 2015). Furthermore, personnel service can be related to the communication skills and styles, which means the ability to communicate with passengers during the flight. Among the examples are; ability to communicate with passengers in different languages, the clarity of captain's briefing during the flight, the critical flight data reported and so on (Hussain et al., 2015).

Empathy (E): Empathy refers to the service that the firm's ability and willingness to offer individual care and service to each customer (Leong et al., 2015). This dimension refers to the airline's capability to provide individual attention to passengers. A cabin crew who has a high degree of empathy will have the capability to understand the feelings, needs and wants of the passengers. As a result, a good and impressive service can be delivered to those passengers and thus enhance their satisfaction and loyalty.

Airline Image (AI): Airline image is defined as how passengers think and feel towards airline brand, such as the general impression or perception of an airline brand held by real or potential passengers. A brand image can be developed through their experience and interaction with the brand, such as factors including punctuality, safety, comfort and so on. According to Ekiz et al. (2006) an airline image comprises of its overall perception, value for money, promotional offers and goodwill.

2.2. Price (P)

In the low-cost carriers' industry, the customers are typically those who are more price-sensitive than those from traditional airlines i.e. full-service airline. The LCCs normally derived customers' demand due to the cheaper price of air tickets compared to full-service airlines. As such the price of air ticket is a significant element that passengers take into consideration when selecting an airline (Vlachos and Lin, 2014). According to Petrick (2004), price perception can be referred to monetary price, i.e., the price of products or service as encoded by the consumers, and behavioral price, i.e., time and efforts that used to search for the product or serve, convenience and values evolution. Purchase decisions are based on how consumers perceive prices and what they consider the current actual price to be (Kotler and Keller, 2010). These previous studies provide a vital source of accurate information of customer's feeling; when applied to LCCs, it expresses their emotions, real experience with respect to specific transaction and their willingness to recommend to others. In this paper, we defined the price factor as one of the important factors based on customer's monetary price perception.

2.3. Satisfaction (S)

Satisfaction can be described as a person's feeling of pleasure or disappointment resulting from comparing a product's performance in relation on his or her expectations (Kotler and Caslione, 2009). Customer satisfaction has become a key area in many social and behavioral studies. The concept of customer satisfaction is generally based on the notion that a business must satisfy its customer with the purpose of keeping sustainable and profitable (Farooq et al., 2018). According to Oliver (1999), satisfaction can be described as a

pleasurable fulfillment, which is a measure of how service provided by companies meet or surpass customer expectations, making the customer feel that consumption fulfills some desires, need, goal, and thus this fulfillment is delighted, enjoyable and pleasurable. Customer satisfaction can result in various benefits. For instance, satisfied customers tend to be less price sensitive, more willing to buy additional products, and less influenced by competitors (Hansemark and Albinsson, 2004). Moreover, the increase in customer satisfaction should lead to great customer retention and loyalty (Abdullah et al., 2011).

2.4. Loyalty (L)

Loyalty can be defined as a deeply held commitment to rebuy or repatronize a prefer product or service consistently in the future (Oliver, 1999). In the airline industry, loyalty is one of the crucial determinants that play an important role in affecting competitive benefits, such as share-of-wallet and market share (Calisir et al., 2016). Different scholars have defined customer loyalty in a variety of ways, but, generally, it can be categorized as behavioral approach, attitudinal approach, and the approach of a composite of both attitude and behavior. The behavioral loyalty focuses on the repeating purchases, which implies a tendency of customer regularly purchase goods or service from the same company, while, the attitudinal loyalty is an approach that using attitudinal data to express the psychological or sentimental loyalty (Vlachos and Lin, 2014). Oliver (1997) suggests that consumers can become loyal at each attitudinal phase from cognitive, affective, conative, to behavioral ones. Oliver (1997) asserts that cognitive loyalty is the weakest link to loyalty resulting from comparing with its alternatives form functional elements, such as price, quality or the point program; affective loyalty refers to a feeling and emotion that the brand has satisfied usage occasions; conative loyalty implies a behavior intention related to repurchase or to recommendation; behavioral loyalty is related to a specific action, which is a consequence of the first three level. From the review of theory and related concepts above, this paper examines the loyalty in two dimensions: attitudinal dimension and behavioral dimension; in order to have a better anticipative power.

This paper aims to explore the influence of services quality (SQ) and price (P) on loyalty (L) through the connection of satisfaction (S) in the context of LCCs. Some of these relationships have been largely used in the aviation industry. However, this research adopted a comprehensive approach, grounded on the rationale of customer satisfaction model, and made changes in each construct operationalization to customize them to the LCCs context; the conceptual framework used in this research is given in Fig. 1, which service quality acts as independent variable as well as price, loyalty is the dependent variable and satisfaction is regarded as mediation. Satisfaction is also appropriate to be considered as a mediator based on the study conducted by Shah et al. (2020) which revealed that customer satisfaction mediates the effect of service quality on behavioral intentions.

This study adopts the expectation confirmation theory (ECT) as a basis for the conceptual framework. According to Oliver (1980), ECT is a cognitive theory that seeks to explain post-purchase satisfaction as a function of expectations, perceived performance, and disconfirmation of beliefs. The ECT illustrates that post-purchase satisfaction will be positive if a product or service outperforms the person's expectation, thus post-purchase satisfaction will increase, and vice versa. The establishment of relationship between each variable identified above will be discussed in the next section.

3. Hypotheses development

3.1. The effect of service quality (AIRQUAL) on satisfaction

The correlation between service quality (SQ) and satisfaction (S) has been widely researched. As mentioned in the previous section, SQ is addressed by a definite performance of a service with regard to a specific



Fig. 1. The proposal conceptual framework.

service attributes, while S is evaluated by passengers after they experienced the service. Based on the previous studies, it was identified that SQ has a significant positive impact on S (Hussain et al., 2015; Yang et al., 2012), which indicates that quality of service delivered by the airlines is a determining factor that leads to the high level of passengers' satisfaction. Meanwhile, Hussain (2016) suggested that to attain high level of S, high level of SQ ought to be delivered. Furthermore, Calisir et al. (2016) revealed that SQ is found to have positive effects on S. Therefore, based on the previous studies mentioned above, this study hypothesizes:

H1. Service quality has a positive relationship with customer satisfaction.

Compare to the SERVQUAL model, the AIRQUAL model is rarely utilized to evaluate the quality of service delivered by the airline companies. As mentioned in the previous section, the AIRQUAL model was first introduced by Ekiz et al. (2006) to specifically assess the quality of service delivered by airlines, consisting of airline tangibles (AT), terminal tangibles (TT), personnel service (PS), empathy (E) and airline image (AI). In their research, all these five dimensions of AIRQUAL model have found to be significant with S. Similarly, Ali et al. (2015) conducted a research focused on the evaluation of the quality of service by Pakistan International Airlines, with the result showing that the high level of AT, TT, PS, E and AI will lead to high level of S. Besides, Farooq et al. (2018) also revealed that all these five dimensions have positive impacts on S with regard to the service provided by Malaysia Airlines. However, these past studies focused on the full-services airlines, this paper hypothesizes in the context of LCCs as follows:

H1a. Airline Tangibles (AT) has a positive relationship with customer satisfaction.

H1b. Terminal Tangibles (TT) has a positive relationship with customer satisfaction.

H1c. Personnel Service (PS) has a positive relationship with customer satisfaction.

H1d. Empathy (E) has a positive relationship with customer satisfaction.

H1e. Airline Image (AI) has a positive relationship with customer satisfaction.

3.2. The effect of price on satisfaction

Price is one of the important factors which is very influential for passengers in selecting airline company when they travel, especially for LCCs customer as those are more price sensitive and perceptive than customers who choosing full-service airlines (Liu and Lee, 2016). From

this viewpoint of LCCs, they tend to engage in relatively high price differentiation in order to achieve profit maximum (Obermeyer et al., 2013). According to Mikulić and Prebežac (2011), affordable and attractive price is the satisfying factor for both full-service airlines and LCCs. Previous research also showed that low airfare is the main consideration for the passengers when selecting airlines (Vlachos and Lin, 2014). Likewise, it was concluded that monetary price is positively associated with revisit intention (Liu and Lee, 2016). Moreover, the much lower the ticket price, the more possibility to generate loyalty towards the airline among leisure passengers (Jiang and Zhang, 2016). Akamavi et al. (2015) and Calisir et al. (2016) also asserted that price is a determinant of passengers' satisfaction. As a result, the hypothesis is:

H2. Price (P) has a positive relationship with customer satisfaction.

3.3. The effect of Satisfaction on Loyalty

Oliver (1999) illustrated that satisfaction will become loyalty once customers get satisfied. If customers not satisfied, they may not reconsider the decision to travel with the same airline for future flights and they will be more likely to try the other airlines instead (Namukasa, 2013). Previous studies revealed that passenger' satisfaction positively and significantly influence passengers' loyalty (Allen et al., 2019; Akamavi et al., 2015; Forgas et al., 2010; Calisir et al., 2016). Besides, the positive effect of satisfaction on repurchase intention is stronger for the LCCs than full-service airlines (Koklic et al., 2017). Moreover, the positive relationship between customer satisfaction and customer loyalty has been identified (Leong et al., 2015; Song et al., 2019). Further, Curry & Gao (2012) revealed that customer satisfaction has a strong power in predicting passenger repurchase loyalty than service quality whereas, customer satisfaction is significantly and positively related to customer loyalty for leisure travelers (Jiang and Zhang, 2016). Therefore, the hypothesis is :

H3. Satisfaction has a positive relationship with customer loyalty.

3.4. Mediation effect of satisfaction

Measuring customer satisfaction in the aviation sector is becoming more frequent because customer satisfaction is critical to the survival of airlines and crucial to maintain the airline's competitiveness (Hussain, 2016). It is even more important for airlines to design appropriate strategies to maintain its competitive position as retention from the passenger cannot come along with better service quality and customer satisfaction. Therefore, this paper investigates the mediating role of customer satisfaction leading to loyalty for two independent variables: service quality and price. Previous research identified that the mediating role of satisfaction between service quality and customer loyalty is significant (Kasiri et al., 2017). Likewise, service quality, perceived value

and customer satisfaction also indirectly affect customer loyalty through mediation (Hapsari et al., 2017). Moreover, the results from Hussain (2016) confirm the mediating role of customer satisfaction between service quality and loyalty. Further, the most recent research conducted by Shah et al. (2020) revealed that customer satisfaction mediates the effect of service quality on behavioral intentions. Therefore, this study hypothesizes:

H4. Satisfaction mediates the effect of service quality on customer loyalty.

H4a. Satisfaction mediates the effect of airline tangibles on customer loyalty.

H4b. Satisfaction mediates the effect of terminal tangibles on customer loyalty.

H4c. Satisfaction mediates the effect of personnel service on customer loyalty.

H4d. Satisfaction mediates the effect of empathy on customer loyalty.

H4e. Satisfaction mediates the effect of airline image on customer loyalty.

H5. Satisfaction mediates the effect of price on customer loyalty.

4. Methodology

To examine the effect of service quality and price on loyalty through satisfaction, this research considered a sample of travelers who prefer to take LCCs rather than traditional airlines. Quantitative method was utilized in this paper due to the financial and time constraints. Primary data was gathered directly from passengers in a survey conducted in the middle of October 2019. The questionnaire was formed by two main parts: the first part consisted of demographic questions designed to solicit information about gender, age, nationality, education, purpose of visit, and the most-flown LCCs. The second part involved the operationalization of constructs.

4.1. Operationalization of the constructs

The framework of this paper incorporates four constructs and the operationalization of each construct was developed based on the previous research. Service quality has been defined with five dimensions based on the AIRQUAL model from Ekiz et al. (2006): airline tangibles, terminal tangibles, personnel service, empathy, and airline image. Each dimension consists of 10 statements which were introduced from the previous studies (Farooq et al., 2018; Ali et al., 2015; Leong et al., 2015; Hapsari et al., 2017). The construct of price has been operationalized by 10 items (Mikulić and Prebežac, 2011; Jiang, 2013; Medina-Munoz et al., 2018). Passengers' satisfaction was also operationalized by 10 items that were adopted from the previous studies (Akamavi et al., 2015; Farooq et al., 2018; Hapsari et al., 2017). Finally, customer loyalty has been operationalized by 10 items which were also introduced from the previous researches (Curry and Gao, 2012; Zhang, 2014). All these constructs were assessed by utilizing five-scales from 1 to 5, which represents from "strongly disagree" to "strongly agree". To validate the survey questionnaire, a pilot test was conducted before the distributing the survey and the results of pilot test confirmed the reliability and validity of the survey.

4.2. Data collection and sampling

In this research, the population was targeted to those passengers who had preferred the flight provided by LCCs rather than full-service airlines when traveling. A variety of responses were welcomed, which means any participants were encouraged to join in this research no matter who they are and where they come from. However, this study

concentrated on the LCCs sectors, as a result, participants who have preferred full-service airlines instead of low-cost airlines have excluded from this study. Convenient sampling was drawn for the survey due to financial and time constraints. The data collection was conducted largely among Malaysian and people from China. A self-administrated questionnaire was used to obtain data over the period of 12 days; the data gathered from Internet through Google forms. 500 questionnaires were distributed online and offline, and a total of 204 responses were received back, constituting a response rate of 40.8%.

4.3. Analytical methods

Data were analyzed and interpreted by utilizing the software of IBM SPSS Statistics and Smart PLS, both are the latest version. Before processing the data, some tests were adopted to preview data with the purpose of ascertaining the data quality and consistency of the structure models, such as data screening for missing values, reliability analysis, factor analysis, non-response bias test, etc. Next, PLS-SEM was utilized to analyze two types of measurable models, reflective and formative models, which gets involved in the proposed framework of this study to test the structural model established. Then, assessment of the goodness of fit analysis was conducted to test the model fitness; followed by the assessment of structural mode to verify the hypotheses. Lastly, the mediating effect of satisfaction was assessed. Moreover, the study is analyzed using PLS is due to the research objective which to maximize the explained variance of the endogenous latent construct (dependent variable) and this research is also an extension of an existing structural theory. Therefore, it is relevant and fit for the study to use PLS-SEM analysis (Ramayah et al., 2018).

5. Data analysis

5.1. Data screening and pre-analysis

Initially, data were cleaned and screened for any potential statistical errors of normality, outliers, missing values, and demographic characteristics. No missing values found in the total of 204 responses. But, one response was identified as outlier because all the statements were given the same marks, two respondents preferred full-service airline instead of low-cost airline, e.g. Egypt Airline, Thai airline; one respondent never took a flight before. As a result of this data screening, the final sample size decreased to 200. The majority of respondents were female (61.5%), between 21 and 30 years old (58.5%), from Malaysia (59%), hold Master and above degree (56%), and travelled with leisure purpose (82.5%)

Table 5.1
Demographic profile of the respondents.

Variables		Frequency	Percentage
Gender	Female	123	61.5
	Male	77	38.5
Age	21–30 years	117	58.5
	31–40 years	55	27.5
	Less than 21 years	19	9.5
	41–50 years	9	4.5
Nationality	Malaysia	118	59
	China	53	26.5
	Indonesia	13	6.5
	Others	16	8
Education	Master or above	112	56
	Bachelor	82	41.0
	Diploma	6	3.0
Purpose of visit	Leisure	165	82.5
	Business	21	10.5
	Education	14	7
The most flown low-cost airline	Air Asia	159	79.5
	Malindo Air	24	12
	Others	17	8.5

with Air Asia (79.5%), as shown below in Table 5.1.

5.2. Common-method variance bias test

This study adopts Harman (1976) one factor test to deter the potential presence of common-method variance bias among variables. In order to achieve this objective, all items of the measurable scale were entered into a principal component analysis with varimax rotation. The results extracted eight different factors from 80 items of measurable contractors, which explains explained a total 60.253% of the variance. KMO is 0.91 (greater than 0.6), indicating it is appropriate to do a good factor analysis, while Bartlett's Test of Sphericity is 0.000 (less than 0.05), showing the result is significant. On the base of these results, it is determined that this study do not have any problem of common-method variance bias.

5.3. Assessment of measurement model

The conceptual model of this study involves both types of measurement models, i.e. reflective measurement model as well as the formative measurement model. Two independent variables, service quality (including: airline tangibles, terminal tangibles, personnel service, empathy, airline image) and price have reflective measurement models and two variables (satisfaction, loyalty) have formative measurement models. For this study, both reflective and formative models were evaluated separately by using Smart PLS. Three steps were followed to achieve the objective of this research. Firstly, the reflective models were tested, then followed by formative models. Lastly, structural models were explored.

5.4. Assessment of reflective measurement models

In order to evaluate the reliability and validity of the reflective measurable models, two independent variables: i.e. service quality and price, were assessed for their factor loading, Average variance extracted (AVE) and Cronbach's Alpha as suggest by Hair et al. (2017). All the loadings except P3 and P5 which exceed the recommended value of 0.708 (Hair et al., 2017) are retained. Even if P3 and P5 have not met the recommended loading value, these two items are still kept as AVE for Price are greater than 0.5 (Hair et al., 2017). However, 22 Items with low loadings are subsequently dropped. Furthermore, all six constructs meet the threshold values for CR and AVE, where all CR are greater than 0.7 and all AVEs are greater than 0.5 (Hair et al., 2017). As a result, service quality instrument comprises 33 items measuring five dimensions: airline tangibles (6 items), terminal tangibles (8 items), personnel service (8 items), empathy (6 items), airline images (5 items), meanwhile, price instrument consists of 5 items after the process of data deletion. The presentation of results is shown in Table 5.2.

5.5. Assessment of formative measurable models

To validate the formative measures, convergent validity is assessed using redundancy analysis. As seen in Table 5.3, the formative construct of satisfaction and loyalty path coefficient is 0.831, thus, the formative measured construct has sufficient degree of convergent validity (Klassen and Whybark, 1999). Besides, multi-collinearity between indicators is assessed. Based on the results shown in Table 5.3, all indicators for formative construct satisfy the VIF values and they are consistently below the threshold value of 3.3 (Diamantopoulos and Siguaw, 2006) after deletion of S1, S10, L4 and L5. As a result, it can be concluded that collinearity does not reach criterial levels in any formative constructs and is not an issue for the estimation of the PLS path model. Lastly, the significance and relevance of the outer weight of the formative constructs are examined. The result shows that S2, S3, S5, S8, L1 and L10 are significant. In order to determine the other items should be kept or not, outer loadings are checked, and it reports that all formative items

Table 5.2

Measurement model.

Latent Constructs	Items	Factor Loadings	AVE	CR	Cronbach's Alpha
SQ (Service Quality)	33 items		0.513	0.956	0.952
SQ dimension 1: AT (Airline Tangible)	AT4	0.789	0.563	0.885	0.845
	AT5	0.727			
	AT6	0.784			
	AT7	0.784			
	AT8	0.712			
SQ dimension 2: TT (Terminal Tangible)	AT9	0.701	0.580	0.917	0.897
	TT1	0.747			
	TT10	0.760			
	TT2	0.764			
	TT4	0.737			
	TT5	0.830			
	TT6	0.717			
	TT7	0.811			
SQ dimension 3: PS (Personnel Service)	TT9	0.721	0.696	0.948	0.937
	PS10	0.870			
	PS2	0.746			
	PS4	0.842			
	PS5	0.870			
	PS6	0.835			
	PS7	0.849			
	PS8	0.844			
	PS9	0.812			
SQ dimension 4: E (Empathy)	E10	0.730	0.537	0.874	0.827
	E4	0.712			
	E5	0.728			
	E6	0.752			
	E7	0.721			
	E9	0.753			
SQ dimension 5: AI (Airline Image)	AI10	0.840	0.700	0.921	0.892
	AI3	0.779			
	AI7	0.859			
P (Price)	AI8	0.858	0.514	0.839	0.760
	AI9	0.844			
	P1	0.753			
	P2	0.778			
	P3	0.655			
	P4	0.762			
	P5	0.621			

Note: AT1, AT2, AT3, AT10, TT3, TT8, PS1, PS3, E1, E2, E3, E8, AI1, AI2, AI4, AI5, AI6, P6, P7, P8, P9, P10 were deleted due to low loadings.

Table 5.3

Measurement properties for formative construct.

Construct	Items	Convergent Validity	Weights	VIF	T-value Weights	Sig.
Satisfaction	S2	0.831	0.211	2.900	2.476*	0.013
	S3		0.272	2.946	3.692*	0.000
	S4		0.096	2.143	1.218	0.223
	S5		0.177	2.895	2.519*	0.031
	S6		0.005	2.044	0.079	0.937
	S7		0.078	2.108	1.046	0.296
	S8		0.285	1.978	3.787*	0.000
	S9		0.097	2.607	1.081	0.280
	L1		0.478	2.637	5.162*	0.000
Loyalty	L10	0.831	0.139	1.647	2.237*	0.025
	L2		0.133	2.286	1.547	0.122
	L3		0.117	2.814	1.212	0.226
	L6		0.137	2.359	1.498	0.134
	L7		0.143	2.915	1.361	0.174
	L8		-0.082	2.682	0.821	0.411
	L9		0.138	2.657	1.637	0.102

Note: S1, S10, L4, L5 were deleted due to high VIF. > 1.96*.

loadings are greater than 0.5 and all are significant, therefore, these 16 formative items remain in this study even if some items are not significantly shown on the outer weights.

5.6. Assessment of structural model

In order to test the significance level, t-statistics for all paths are generated using Smart PLS bootstrapping function. Based on the assessment of the path coefficient as shown in Table 5.4, six relationships are found to have t-value ≥ 1.645 , thus six relationships are significant at 0.05 level of significance. Specifically, the predication of Service Quality ($\beta = 0.774$, $p < 0.01$) and Price ($\beta = 0.172$, $p < 0.01$), are positively related to Satisfaction, which explains 65.7% of variance in satisfaction that is above the 0.26 value as suggested by Cohen (1998). Likewise, the result of the effect of Satisfaction on Loyalty indicates that Satisfaction ($\beta = 0.831$, $p < 0.01$) has a positive relationship with Loyalty, explaining 68.8% of the variance in Loyalty. Thus, H1, H2, and H3 are supported. Among the five dimensions of service quality, Airline Tangibles ($\beta = 0.122$, $p < 0.05$), Empathy ($\beta = 0.147$, $p < 0.05$), and Airline Image ($\beta = 0.450$, $p < 0.01$) are positively correlated with Satisfaction. Therefore, H1a, H1d, and H1e are supported. However, two relationships, Terminal Tangible and Personnel Service, are found to have t-value < 1.645 , P-value > 0.05 , as a result, these two hypotheses (H1b, H1c) are not supported in this research.

5.7. Assessment of mediation analysis

According to Awang (2012), mediation effect can be confirmed when the exogenous variable X is significantly related to the mediating variable M, and M is also significantly related to the endogenous variable Y. In addition, the magnitude of direct effect from X to Y is also existed by adding M in the relationship. This indirect effect can be tested and obtained from the two-tailed significant of the bias-corrected percentile method by running PLS bootstrapping. Among the seven hypotheses which contain mediation, the results have shown four indirect effects as follows: Service Quality ($\beta = 0.614$, $t = 19.312$, $p < 0.01$), Empathy ($\beta = 0.122$, $t = 2.241$, $p < 0.05$), Airline image ($\beta = 0.374$, $t = 5.186$, $p < 0.01$) and Price ($\beta = 0.143$, $t = 2.443$, $p < 0.05$) are statistically significant, indicating that Satisfaction mediates the casual relationship between Service Quality, Empathy, Airline Image, Price and Loyalty respectively. Therefore, H4, H4d, H4e, and H5 are supported. However, H4a, H4b and H4c are not statistically supported, which means that the mediation is not significant between the relationship of Airline Tangibles, Terminal Tangibles, Personnel Service and Loyalty separately. The results of mediation analysis are presented in Table 5.5.

6. Discussion, conclusion and implications

Building on prior research on the aviation industry, the current investigation explored the impacts of the service quality and price on customer loyalty in the context of LCCs. Findings of this study revealed that service quality and price are found to be the antecedents of passenger satisfaction, which influences and leads to passengers' loyalty, suggesting that good service and affordable ticket price will lead passengers to be more satisfied and then make passengers become more loyal. These findings are similar to the finding that price has a significant impact on customer satisfaction (Jiang and Zhang, 2016; Akamavi et al.,

Table 5.4

Hypothesis testing.

Hypothesis	Relationship	Std Beta	Std. Error	t-value	p-value	Decision
H1	SQ - > S	0.774	0.783	31.884	0.000*	Supported
H1a	AT - > S	0.122	0.064	1.909**	0.028*	Supported
H1b	TT - > S	0.099	0.078	1.270	0.102	Not Supported
H1c	PS - > S	0.020	0.075	0.262	0.397	Not Supported
H1d	E - > S	0.147	0.066	2.242*	0.013*	Supported
H1e	AI - > S	0.450	0.077	5.887**	0.000*	Supported
H2	P - > S	0.172	0.067	2.573**	0.005*	Supported
H3	S - > L	0.831	0.024	34.157**	0.000*	Supported

Note: * *P value < 0.01 , *P value < 0.05 .

2015; Calisir et al., 2016), whereas similar to the finding that service quality has a positive influence on satisfaction (Hussain et al., 2015; Jiang and Zhang, 2016; Hussain, 2016). Moreover, these findings endorse the result of previous studies, such as Allen et al. (2019), Akamavi et al. (2015), Forgas et al. (2010), Koklic et al. (2017) that the positive relationship between satisfaction and loyalty does exist. Further, it is found that service quality has a higher power as compared to price in predicting customer satisfaction, providing the evidence that better quality of service will significantly improve overall customer satisfaction. This finding is in line with Liu and Lee (2016). Supporting this ideas, managers of a low-cost airlines should increase its overall service quality in improving overall satisfaction, which, in return, encourage customers to increase their willingness to revisit or repurchase intention.

Among the five dimensions of service quality based on the AIRQUAL model, findings of this research have shown that better quality of aircraft, empathy and good airline image lead to enhanced customer satisfaction. These findings are in line with previous studies. For example, Farooq et al. (2018) and Ali et al. (2015) also observed that airline tangibles, airline image, and empathy have a high influence on satisfaction. However, it is pertinent to mention that, their findings reported that the quality of service provided by terminals and personnel is related to customer satisfaction. Whereas findings of this research show that such a positive relationship between these two variables and satisfaction does not exist. This finding may be explained by considering the different airline types, LCCs or full-service airlines. Koklic et al. (2017) and Rajaguru (2016) revealed that the positive effect of quality of personnel on satisfaction is weaker for the LCCs versus full-service airlines. Moreover, LCCs customers may not have as high expectations of these service quality characteristics (Carras-Perez and Sanchez-Garcial, 2016), and as much, they are the weaker drivers of their satisfaction with the LCCs. Therefore, terminal tangibles and personnel service may not directly lead to satisfaction.

To illuminate the mediating effect of customer satisfaction and to

Table 5.4

Hypothesis testing.

Hypothesis	Relationship	Std Beta	Std. Error	t-value	p-value	Decision
H1	SQ - > S	0.774	0.783	31.884	0.000* *	Supported
H1a	AT - > S	0.122	0.064	1.909**	0.028*	Supported
H1b	TT - > S	0.099	0.078	1.270	0.102	Not Supported
H1c	PS - > S	0.020	0.075	0.262	0.397	Not Supported
H1d	E - > S	0.147	0.066	2.242*	0.013*	Supported
H1e	AI - > S	0.450	0.077	5.887**	0.000* *	Supported
H2	P - > S	0.172	0.067	2.573**	0.005* *	Supported
H3	S - > L	0.831	0.024	34.157**	0.000* *	Supported

Note: * *P value < 0.01 , *P value < 0.05 .

demonstrate a more comprehensive understanding in responding to the customer loyalty, the results show that the impact of service quality and price on customer loyalty is mediated by customer satisfaction, implying that customer satisfaction plays a vital role in competing with other rivals in aviation sector. These findings are consistent with the previous research. For example, [Kasiri et al. \(2017\)](#) revealed that the mediating role of satisfaction between service quality dimension and customer loyalty has been found to be significant. Likewise, service quality, perceived value and customer satisfaction also indirectly affect customer loyalty through mediation ([Hapsari et al., 2017](#)). For managers of LCCs, they should take a proactive approach to satisfy customers more effectively rather than waiting customers to complain and subsequently reacting ([Hussain, 2016](#)), which indicates that the management and policy maker of LCCs must strive to satisfy the customer by strengthening the relationship between service quality and loyalty, price and loyalty. Among the five dimensions of service quality, the mediating effect of satisfaction only exist between empathy and loyalty, airline image and loyalty separately, suggesting that the impact of empathy and airline image on loyalty is enhanced when passengers get satisfied.

More generally, the findings of this study contribute to knowledge on customer satisfactions, importance factors of services quality, loyalty and prices which was establishing key constructs and indicators, and relationships between them in one comprehensive model. Then, the focus is specifically on LCCs. However, the findings have wider implications because all the constructs discussed are also relevance to all types of aviation industries. Meanwhile, in terms of managerial implications, the findings can help managers to understand the needs and expectations of customers. Managers can use the indicators as a basis for establishing effective and efficient service quality guidelines in order to achieve customer satisfaction and loyalty. Successful development of service quality guidelines can be used to strategies clear business plan and activities, i.e. in terms of marketing strategy, pricing strategies, costing and budgeting strategies and etc. Finally, based on the findings, the study is able to explain the theory that has been used. According to expectation confirmation theory, expectations serve as the comparison anchor in ECT; if a product or service meets or outperforms expectation, post-purchase satisfaction will result, and vice versa.

6.1. Theoretical implications

Theoretically, this research has been able to move forward the literature pertaining to the impact of service quality and price on loyalty in the low-cost airline industry from the perspective of Southeast Asia. This research is among the first to explore service quality impacts by using the AIRQUAL model with PLS-SEM approach. Besides, the mediation effect of satisfaction was also studied based on the indirect effects by running PLS bootstrapping analysis. Thus, the conceptual model of this study may be used as a source of future reference for other researchers who have interest in exploring the effect of service quality and price on loyalty through the connection of satisfaction.

6.2. Practical implications

In terms of managerial implications, the results of this study have important implications for LCCs management relating to service quality improvement, price strategy, resource allocation, and the design and development of appropriate strategies for attracting customer. First, the findings of this study address the important of service quality and price as these two attributes have a positive relationship with customer satisfaction, and thus result in customer loyalty. Therefore, the effect of service quality and price should be taken into consideration for passengers' loyalty because passengers are more likely to repurchase a ticket as long as LCCs provide a good quality of service with more affordable ticket. The LCCs should able to offer the best price list to their customers as well as balancing LCCs operation and management cost.

However, the results also reveal that service quality is more

influential than price in driving customer satisfaction. From the managerial perspective, this implies that further effort is required to improve the level of service within the context of LCCs. Specifically, the management and policymaker of LCCs need to improve the performance on airline tangibles (AT), empathy (E) and airline image (AI) based on the AIRQUAL model as these three attributes have found to be significant with the customer satisfaction. Specifically, LCCs should create high perception by using airline tangible cues, i.e. comfort and cleanliness of the seat, legroom between seats, facilities, and should also build a good airline brand by enhancing its empathy, safety, punctuality, good impression, trust, appealing promotion, and discount in order to build its image as a safe and reliable airline brand, which also seem to be highly important to customers. For the other two indicators, terminal tangibles (TT) and personnel service (PS) have found no impact on customer satisfaction directly in this paper, which contrast with traditional airlines, implying the LCCs should pay less concentration on these two variables as it might not be important from the viewpoint of LCCs customers as well as it will also increase operation cost for LCCs and it might overkill the business. Especially, during such a difficult time, LCCs may not able to spend too much attention on the quality provided by the terminal and the personnel due to the social distancing measures with the purpose of preventing further rapid spread of the pandemic. Therefore, LCCs should make effort to improve the performance of airline tangibles, empathy and airline image rather than terminal tangibles and personnel service, which will help them to survive first and generate better profit in the aviation market.

Third, this research emphasizes the significance and importance of satisfaction in driving passengers' loyalty as this study not only empirically confirms the direct relationship between satisfaction and loyalty but also the mediating effect among service quality and loyalty, price and loyalty separately. This result reinforces the need for airline management to ensure satisfaction of their customers because customers who are satisfied with their flight experience and happy with their decision to fly with a particular airline are more likely to say positive things and promotes about the airline to other people. Besides, satisfied passengers tend to repeat using the same airline over other airline companies, which will help the LCCs stand out in the marketplace. In addition, taking a proactive approach in satisfying customers is more effective and efficient than waiting for customers to complain and subsequently reacting, from the viewpoint of the management of LCCs.

6.3. Limitations and future research directions

Some limitations need to be taken into consideration. First, this research was conducted in developing Southeast Asia countries, as the majority from Malaysia and hence the result may not be able to generalize to other geographical regions. Further research can overcome such limitation by carrying out a cross-country comparative study. Second, this paper used a cross-sectional survey approach and thus the effect of time was not examined, thus, the potential avenue for future research is that a longitudinal survey maybe conducted to explore the effect of time on passengers' behavioral intentions. Third, this study only adopted two independent variables: service quality and price; thus, other attributes can be taken into account when conducting further researches, e.g. image, perceived value, safety matters, technology acceptance, cultural factors and re-purchase intention. Last but not least, this research did not concern about control variables: such as, demographic factors, i.e. gender, age, educational background, disposable income. These factors may be influential when passengers selecting LCCs. Therefore, future researcher can explore these effects on customer satisfaction or customer loyalty.

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References

- Abdullah, F., Suhaimi, R., Saban, G., Hamali, J., 2011. Bank service quality (BSQ) index: an indicator of service performance. *Int. J. Qual. Reliab. Manag.* 28, 542–555.
- Akamavi, R.K., Mohamed, E., Pellmann, K., Xu, Y., 2015. Key determinants of passenger loyalty in the low-cost airline business. *Tourism Manag.* 46, 528–545.
- Aksoy, S., Atilgan, E., Akinci, S., 2003. Airlines services marketing by domestic and foreign firms: differences from the customers' viewpoint. *J. Air Transport. Manag.* 9 (6), 343–351. November 2003.
- Allen, J., Eboli, L., Forciniti, C., Mazzulla, G., Ortuzar, J.d.D., 2019. The role of critical incidents and involvement in transit satisfaction and loyalty. *Transport Pol.* 75, 57–69. March 2019.
- Ali, F., Dey, B.L., Filieri, R., 2015. An assessment of service quality and resulting customer satisfaction in Pakistan International Airlines: findings from foreigners and overseas Pakistani customers. *Int. J. Qual. Reliab. Manag.* 32 (5), 486–502.
- Awang, Z., 2012. *A Handbook on Structural Equation Modeling Using AMOS*, sixth ed. Centre of Graduate Studies, Kota Bharu.
- Carras-Perez, R., Sanchez-Garcial, I., 2016. Antecedents and consequences of consumer commitment in traditional and low-cost airline. *J. Trav. Tourism Market.* 33 (6), 899–911.
- Calisir, N., Basak, E., Calisir, F., 2016. Key drivers of passenger loyalty: a case of Frankfurt–Istanbul flights. *J. Air Transport. Manag.* 53, 211–217.
- Chen, L., Li, Y.Q., Liu, C.H., 2019. How airline service quality determines the quantity of repurchase Intention-Mediate and moderate effects of brand quality and perceived value. *J. Air Transport. Manag.* 75, 185–197.
- Cohen, J., 1998. *Statistical Power Analysis for the Behavioral Science*, second ed. Lawrence Erlbaum Associates, Hillsdale, NJ.
- Cronin Jr., J.J., Taylor, S.A., 1992. Measuring service quality: a reexamination and extension. *J. Market.* 56 (3), 55–68.
- Curry, N., Gao, Y., 2012. Low-cost airlines—a new customer relationship? An analysis of service quality, service satisfaction, and customer loyalty in a low-cost setting. *Serv. Market. Q.* 33 (2), 104–118.
- Diamantopoulos, A., Siguaw, J.A., 2006. Formative versus reflective indications in organizational measure development: a comparison and empirical illustration. *Br. J. Manag.* 17 (4), 263–282.
- Dolnicar, S., Grabler, K., Grün, B., Kulnig, A., 2011. Key drivers of airline loyalty. *Tourism Manag.* 32 (5), 1020–1026.
- Ekiz, H.E., Hussain, K., Bavik, A., 2006. Perception of service quality in North Cyprus national airline. *Tourism and Hospitality Industry 2006 - new trends in tourism and hospital management. 18th Biennial International Conference. Faculty of Tourism and Hospitality Management, Opatija*, pp. 778–790.
- Farooq, M.S., Salam, M., Fayolle, A., Jaafar, N., Ayupp, K., 2018. Impact of service quality on customer satisfaction in Malaysia airlines: a PLS-SEM approach. *J. Air Transport. Manag.* 67, 169–180.

- Forgas, S., Moliner, M.A., Sánchez, J., Palau, R., 2010. Antecedents of airline passenger loyalty: low-cost versus traditional airlines. *J. Air Transport. Manag.* 16 (4), 229–233.
- Hapsari, R., Clemes, M.D., Dean, D., 2017. The impact of service quality, customer engagement and selected marketing constructs on airline passenger loyalty. *International Journal of Quality and Service Sciences* 9 (1), 21–40.
- Harman, H.H., 1976. *Modern Factor Analysis*. University of Chicago Press, Chicago, USA.
- Hair Jr., J.F., Babin, B.J., Krey, N., 2017. Covariance-based structure equation modeling in the *Journal of Advertising*: review and recommendations. *J. Advert.* 46 (1), 163–177.
- Hansemark, O.C., Albinsson, M., 2004. Customer satisfaction and retention: the experiences of individual employees. *Manag. Serv. Qual.* 14 (1), 40–57.
- Henderson, L.L., Tsui, K.W.H., Ngo, T., Gilbey, A., Avis, M., 2019. Airline brand choice in a duopolistic market: the case of New Zealand. In: *Transportation Research Part A: Policy and Practice*, vol. 121, pp. 147–163.
- Hussain, R., 2016. The mediating role of customer satisfaction: evidence from the airline industry. *Asia Pac. J. Market. Logist.* 28 (2), 234–255.
- Hussain, R., Al Nasser, A., Hussain, Y.K., 2015. Service quality and customer satisfaction of a UAE-based airline: an empirical investigation. *J. Air Transport. Manag.* 42, 167–175.
- Jiang, H., 2013. Service quality of low-cost long-haul airlines—The case of Jetstar Airways and AirAsia X. *J. Air Transport. Manag.* 26, 20–24.
- Jiang, H., Zhang, Y., 2016. An investigation of service quality, customer satisfaction and loyalty in China's airline market. *J. Air Transport. Manag.* 57, 80–88.
- Kasiri, L.A., Cheng, K.T.G., Sambasivan, M., Sidin, S.M., 2017. Integration of standardization and customization: impact on service quality, customer satisfaction, and loyalty. *J. Retailing Consum. Serv.* 35, 91–97.
- Klassen, R.D., Whybark, D.C., 1999. The impact of environmental technological on manufacturing performance. *Acad. Manag. J.* 42 (6), 599–615.
- Kotler, P., Keller, K.L., 2010. *Marketing Management*, 14th Global Edition. Pearson Education, Inc.
- Kotler, P., Ang, S.H., Leong, S.M., Tan, C.T., 1996. *Marketing Management: an Asia Perspective*, second ed. Prentice Hall, Singapore.
- Kotler, P., Caslione, J.A., 2009. How marketers can respond to recession and turbulence. *J. Cust. Behav.* 8, 187–191.
- Koklic, M.K., Kukar-Kinney, M., Vegelj, S., 2017. An investigation of customer satisfaction with low-cost and full-service airline companies. *J. Bus. Res.* 80, 188–196.
- Liu, C.H.S., Lee, T., 2016. Service quality and price perception of service: influence on word-of-mouth and revisit intention. *J. Air Transport. Manag.* 52, 42–54.
- Leong, L.Y., Hew, T.S., Lee, V.H., Ooi, K.B., 2015. An SEM-artificial-neural-network analysis of the relationships between SERVPERF, customer satisfaction and loyalty among low-cost and full-service airline. *Expert Syst. Appl.* 42 (19), 6620–6634.
- Lee, J., Lee, J., Feick, L., 2001. The impact of switching costs on the customer satisfaction-loyalty link: mobile phone service in France. *J. Serv. Market.* 15 (1), 35–48.
- Medina-Munoz, D., Medina-Munoz, R., Saurez-Cabrera, 2018. Determining important attributes for assessing the attractiveness of airlines. *J. Air Transport. Manag.* 70, 45–46. July 2018.
- Mikulić, J., Prebežac, D., 2011. What drives passenger loyalty to traditional and low-cost airlines? A formative partial least squares approach. *J. Air Transport. Manag.* 17 (4), 237–240.
- Namukasa, J., 2013. The influence of airline service quality on passenger satisfaction and loyalty. In: Muturi, D. (Ed.), 25, p. 520e532. *The TQM Journal*, 5.
- Nadiri, H., Hussain, K., Haktan Ekiz, E., Erdoğan, Ş., 2008. An investigation on the factors influencing passengers' loyalty in the North Cyprus national airline. *The TQM Journal* 20 (3), 265–280.
- Oliver, R.L., 1980. A cognitive model of the antecedents and consequences of satisfaction decisions. *J. Market. Res.* 17 (4), 460–469.
- Oliver, R.L., 1997. *Satisfaction: A Behavioral Perspective on the Consumer*. Irwin, McGraw-Hill, New York.
- Oliver, R.L., 1999. Whence consumer loyalty. *J. Market.* 63 (4 Suppl. 1), 33–44.
- Obermeyer, A., Evangelinos, C., Püschel, R., 2013. Price dispersion and competition in European airline markets. *J. Air Transport. Manag.* 26, 31–34.
- Parasuraman, A., Zeithaml, V.A., Berry, L.L., 1988. Servqual: a multiple-item scale for measuring consumer perc. *J. Retailing* 64 (1), 12.
- Parasuraman, A., Berry, L.L., Zeithaml, V.A., 1985. A conceptual model of service quality and its implications for future research. *J. Market.* 49 (4), 41–50.
- Petrick, J.F., 2004. The roles of quality, value, and satisfaction in predicting cruise passengers' behavioral intentions. *J. Trav. Res.* 42 (4), 397e407.
- Rajaguru, R., 2016. Role of value for money and service quality on behavioral intention: a study of full service and low-cost airline. *J. Air Transport. Manag.* 53, 114–122.
- Ramayah, T., Cheah, J., Chuah, F., Ting, H., Ali Memon, M., 2018. *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using Smart PLS 3.0 : an Updated and Practical Guide to Statistical Analysis*, second ed. Pearson Malaysia.
- Robledo, M.A., 2001. Measuring and managing service quality: integrating customer expectations. *Manag. Serv. Qual.: Int. J.* 11 (1), 22–31.
- Song, H., Wang, J., Han, H., 2019. Effect of image, satisfaction, trust, love, and respect on loyalty formation for name-brand coffee shop. *Int. J. Hospit. Manag.* 79, 50–59. May 2019.
- Schlumberger, C.E., Weisskopf, N., 2014. Ready for Takeoff?: the Potential for Low-Cost Carriers in Developing Countries. The World Bank.
- Saha, G.C., Theingi, 2009. Service quality, satisfaction, and behavioral intentions: a study of low-cost airline carriers in Thailand. *Manag. Serv. Qual.: Int. J.* 19 (3), 350–372.
- Shah, F.T., Syed, Z., Imam, A., Raza, A., 2020. The impact of airline service quality on passengers' behavioral intentions using passenger satisfaction as a mediator. *J. Air Transport. Manag.* 85, 101815. June 2020.
- Singh, A.K., 2015. Modeling passengers' future behavioral intentions in airline industry using SEM. *Journal of Advances in Management Research* 12 (2), 107–127.
- Tsafarakis, S., Kokotas, T., Pantouvakis, A., 2018. A multiple criteria approach for airline passenger satisfaction measurement and service quality improvement. *J. Air Transport. Manag.* 68, 61–75.
- Vlachos, I., Lin, Z., 2014. Drivers of airline loyalty: evidence from the business travelers in China. *Transport. Res. E Logist. Transport. Rev.* 71, 1–17.
- Wu, H.-C., Cheng, C.-C., 2013. A hierarchical model of service quality in the airline industry. *J. Hospit. Tourism Manag.* 20, 13–22.
- Yang, K.-C., Hsieh, T.-C., Li, H., Yang, C., 2012. Assessing how service quality, airline image and customer value affect the intentions of passengers regarding low cost carriers. *J. Air Transport. Manag.* 20, 52–53.
- Zhang, D.Z., 2014. *Multiple Variables that Influencing Thai Passenger in Selecting Domestic Low-Cost Airline*. Harbin Institute of Technology.