Key drivers of passenger loyalty: A case of Frankfurt–Istanbul flights

Nese Calisir [a], Ecem Basak [b], Fethi Calisir [b, *]

[a] *Turkish Airlines Inc., Ataturk Airport, 34149 Yesilkoy, Istanbul, Turkey*
[b] *Industrial Engineering Department, Management Faculty, Istanbul Technical University, 34367 Macka, Istanbul, Turkey*

ARTICLE INFO

ABSTRACT

This study aims to analyze the effects of factors such as image, satisfaction, price, and service quality on passenger loyalty toward full-service network carriers and low-cost carriers. A structural equation modeling approach was applied to identify the factors that significantly affect passenger loyalty. Using LISREL, data were collected from 237 passengers in face-to-face interviews in the baggage claim area of international arrivals at Ataturk International Airport in Turkey who traveled from Frankfurt to Istanbul and were used to test the proposed model. One hundred seventy-five out of these 237 questionnaires were considered as valid. The results indicate that 71% of the passenger loyalty is explained by image and image is explained by satisfaction. In addition, service quality and price are found to have positive effects on satisfaction. Compared with price, service quality is found to be a stronger determinant of satisfaction. This study concludes with the recommendations for managers and possible future research.

1. Introduction

Airline companies are prone to attack by various challenges: (1) fuel prices, (2) low-cost carriers, (3) economic crisis, (4) increasing security precautions, (5) personnel shortage, (6) government regulations, etc. Although airline industry is a growing market, it is highly competitive because of low-profit margins. To survive in such environment, airline companies should not allow their customers to switch to any other airlines. In this approach, it is important to determine the key drivers that can affect customer choice and make this choice repetitive, which makes a passenger loyal to an airline.

2. Conceptual background

The main purpose of this study is to analyze the effects of factors such as image, satisfaction, price, and service quality on passenger loyalty toward full-service network carriers (FSNCs) and low-cost carriers (LCCs). This study makes a contribution to the existing literature in several ways. First, this study provides evidence to the influence of service quality and price on loyalty through satisfaction

and image. In the literature, several studies also researched the impact of factors on passenger loyalty (Akamavi et al., 2015; Forgas et al., 2010; Mikulić and Prebežac, 2011; Namukasa, 2013). However, to our knowledge, there has been no study related to the airline industry in which above-mentioned factors are modeled together. In the study of Akamavi et al. (2015), factors, such as service employees self-efficacy, service recovery, price, passenger satisfaction, and passenger trust influencing passenger loyalty in the LCCs were examined. Namukasa (2013) conducted a study to investigate the effects of preflight service quality, in-flight service quality, and postflight service quality on passenger loyalty through satisfaction in Uganda airline industry. Mikulić and Prebežac (2011) analyzed the factors affecting passenger loyalty in traditional and low-cost airlines. They proposed a research model including factors such as offers of flights and destinations, ticket purchase experience, airport experience, flight experience, service reliability, service quality, price, image, and loyalty. In the study of Forgas et al. (2010), antecedents of passenger loyalty were examined by the factors such as perceived value, satisfaction, and trust. So, the research model presented in this study differs from the other research models related to passenger loyalty in the airline industry.

Second, it is more realistic and more reliable that passengers participate in the questionnaire after they experience all environments of flights (check-in, boarding, flight, baggage claim, etc.) not before. In the literature, there are studies related to passenger loyalty that the data have been collected from passengers *waiting*

* Corresponding author.
E-mail addresses: nesekoklu@gmail.com (N. Calisir), basake@itu.edu.tr (E. Basak), calisirfet@itu.edu.tr (F. Calisir).

for their flights in face-to-face interviews in the departure area of airports (Akamavi et al., 2015; Mikulić and Prebežac, 2011; Namukasa, 2013). However, in our study, the data have been collected from passengers in face-to-face interviews in the baggage claim area of international arrivals at Ataturk International Airport (IST) in Turkey who *traveled* from Frankfurt to Istanbul.

The last contribution of this study is the difference among airline companies, flight route, and region. In the study of Mikulić and Prebežac (2011) two FSNCs (Lufthansa and Croatia Airlines) and one LCC (Germanwings) operating at Zagreb Airport were used and Zagreb–Germany flights were chosen as a route. In the study of Akamavi et al. (2015), LCCs operating at London-Stansted Airport and Manchester Airport were taken into consideration and there was no distinction among LCCs and any flight departing from these airports was taken into account. In the study of Namukasa (2013), airlines registered within East Africa (Air Uganda, Precisionair, Kenya airways, Rwanda air, and Fly 540) which were operating at Entebbe International Airport are used, and there was no distinction whether they were FSNCs or LCCs. In the study of Forgas et al. (2010), two FSNCs (Iberia and British Airways) and one LCC (Easy-Jet) operating at El Prat (Barcelona) Airport were used and flights of Barcelona–London and London–Barcelona are chosen for the study. However, in our study, we have chosen one route, Frankfurt–Istanbul (IST) and as a result two FSNCs (Airline A and Airline B) and one LCC (Airline C) are involved.

The next section discusses the research model and hypothesis. This is followed by the methodology. Then, the results of the analysis are presented in the fourth section, and this article concludes with a discussion of the findings.

3. Research model and hypotheses

Loyalty is defined as "a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand purchasing despite situational influences and marketing efforts having the potential to cause switching behavior" (Oliver, 1997). In the airline industry, passenger loyalty is one of the crucial determinants that play an important role in affecting competitive benefits (e.g., share-of-wallet and market share) in the forcibly compelling marketplace. Sustainable market share and long-term success of airlines are predominantly depending on the loyalty of their passengers (Akamavi et al., 2015).

Image refers to the perception of the brand on customer's mind. Having a good and well-known image in the minds of customers is a key asset for any company (Kang and James, 2004). In the airline industry, an image of the airline company is commonly formed by customer reviews as well as print and television advertising (Chang and Hung, 2013). Mikulić and Prebežac (2011) suggest that an airline company's image is a strong indicator of passenger loyalty. If customers have favorable feelings and thoughts for an airline company, they will tend to reuse that company for future flights. Therefore, we hypothesize as follows:

H1. Image will have a positive effect on loyalty.

Satisfaction refers to "the summary of the psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the prior feelings of the consumer about the consumption experience" (Oliver, 1981). If passengers are not satisfied, eventually, they will reconsider the decision of using the same airline company for future flights and they will be more likely to try for a different airline company (Namukasa, 2013). Moreover, Blodgett et al. (1997) mention that dissatisfied passengers may complain to airline companies and start a negative word-of-mouth campaign that will cause a damage to company's reputation and

image (Akamavi et al., 2015). Therefore, we hypothesize as follows:

H2. Satisfaction will have a positive effect on loyalty.

H3. Satisfaction will have a positive effect on image.

Price is one of the important factors, which is influential in customers' choice of an airline company. As air transport is a derived demand, price sensitiveness of passengers is greater than any other part of transport, that is why price of ticket is a significant element that passengers take into consideration while they are choosing an airline (Vlachos and Lin, 2014). Although FSNC passengers are not as price sensitive as LCC passengers, loyalty program discounts are also involved to include FSNC preferences. Affordable prices or higher rewards are the satisfying factors for both FSNC and LCC passengers (Mikulić and Prebežac, 2011). Akamavi et al. (2015) also assert that price is a determinant of passenger satisfaction. Therefore, we hypothesize as follows:

H4. Price will have a positive effect on satisfaction.

Service quality is about the evaluation of how performed service fulfills the expectations of customer. It depends on expected service and perceived service. If perceived service is equal or greater than the expected service, the customer will be satisfied (Grönroos, 1984). Quality of service is an important factor in satisfying needs and demands of customers (Munusamy et al., 2011). Rhoades and Waguespack (2008) assert that in the airline industry, service quality is related to "the ability of the airline providers to transport passengers to their required destinations while providing excellent standards of service" (Suki, 2014). If the quality of service of an airline company is poor and passengers receive rude service from the same airline company consistently, they will be dissatisfied with the service eventually (Namukasa, 2013). Therefore, we hypothesize as follows:

H5. Service quality will have a positive effect on satisfaction.

The proposed research model can be seen in Fig. 1.

4. Methodology

A survey methodology was used to gather data in this study. The questionnaire was applied to the passengers of Frankfurt–Istanbul flights. Route was determined based on following criteria: At least two full service and at least one low cost carrier should be provided on that route, flight duration should be neither very short (may be inadequate to evaluate on-flight service) nor very long (may be inconvenient for tired passengers), and daily frequency should be reasonable to collect data (Special daily permission is needed to enter the area where questionnaire will be implied). Under these conditions, the Airline A, Airline B, and Airline C provide a service for Frankfurt–Istanbul route with a total frequency of nine flights in a day and a block time of 3 h.

The questionnaire was formed by two main parts: The first part consisted of demographic questions designed to solicit information about age, gender, nationality, education level, annual income, number of flights in a year, an airline company used in Frankfurt–Istanbul route, and number of flights used with the airline company for Frankfurt–Istanbul route per year. A total of 237 questionnaires were collected between April 2015 and May 2015. One hundred seventy-five out of these 237 questionnaires were considered as valid. The summary of demographic profiles of the participants is given in Table 1.

The second part consisted of the items measuring loyalty (Akamavi et al., 2015), image (Nguyen and Leblanc, 2001), satisfaction (Bhattacherjee, 2001), price (Mikulić and Prebežac, 2011), and service quality (Kang and James, 2004). The items for the
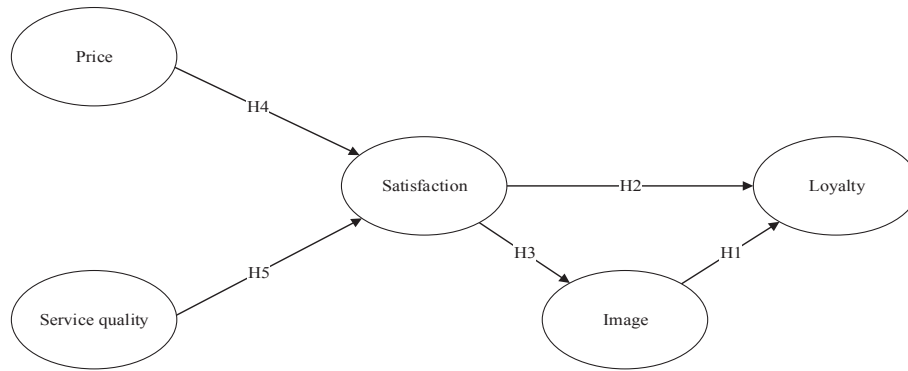
Fig. 1. Research model.

Table 1
Demographic profiles of the respondents.

Age (years)		
Max: 71	Min: 15	Average: 31.40
Gender (%)		
Female: 42.86	Male: 57.14	
Nationality (%)		
Turkish: 52.57	German: 13.14	Australian: 12
American: 4.57	Others: 17.72	
Educational Level (%)		
Elementary: 8.02	High School: 22.84	Associate: 5.55
Bachelor: 27.77	Master: 29.01	PhD: 6.81
Annual Income (%)		
< $10000: 25.73	$10000–$19999: 16.96	$20000–$29999: 15.20
$30000–$39999: 12.86	$40000–$49999: 10.53	$50000–$59999: 4.09
$60000–$69999: 1.75	$70000–$79999: 2.92	>$80000: 9.96
Flights in a year (#)		
Max: 100	Min: 2	Average: 8.73
Flights in a year with the airline which is used in Frankfurt–Istanbul route (#)		
Max: 60	Min: 2	Average: 5.82

constructs can be seen in Table 2. A five-point Likert-type scale was used to measure the items. In the five-point Likert-type scale, one represents "strongly disagree" and five represents "strongly agree."

5. Results

In this study, a two-step approach is used for the analysis (Anderson and Gerbing, 1988). The model is tested using the Linear Structural Relations software LISREL 8.80 (Jöreskog and Sörbom, 2006) with LISREL project.

5.1. Measurement model

Confirmatory factor analysis is performed to test the validity and reliability of the constructs. The research model includes 35 items describing five constructs: loyalty (LOY), image (IMG), satisfaction (SAT), price (PRC), and service quality (SQ). In this study, service quality has five sub dimensions. The dimensions of service quality are: (1) reliability (REL), (2) responsiveness (RES), (3) assurance (ASR), (4) empathy (EMP), and (5) tangibles (TAN). Therefore, a second-order confirmatory factor analysis was performed for service quality.

5.1.1. First order factor analysis
Initial analysis shows the requirement of revision on constructs. The decision to respecify the construct is given based on the factor loadings of items and standard χ^2 differences for the competing models as long as theory and content allowed for changes

(Anderson and Gerbing, 1988). The items whose factor loadings are lower than 0.50 and the items with excessive standard errors are dropped from the model. A total of five items are dropped from the research model and 30 items are retained for further analysis. All of the remaining items have significant t-statistics ($p < 0.01$) and their factor loadings are above 0.50. The items in Table 2 without an asterisk are used for further analysis.

The fit statistics show that the model provided a reasonably good fit to the data. As shown in Table 3, all the fit indices ($\chi 2$, RMSEA = root mean squared error of approximation, CFI = comparative fit index, IFI = incremental fit index, GFI = goodness of fit index, CFI = comparative fit index, IFI = incremental fit index, NFI = normed fit index, SRMR = standardized root mean squared residual) except GFI are within the recommended values (Hair et al., 1998; Kelloway, 1998; Roca et al., 2006; Schermelleh-Engel et al., 2003). However, the value of GFI below 0.90 suggests that the model provides an appropriate fit to the data. According to Cohen (1992), a minimum value of 0.80 can be accepted as a reasonably good fit with regard to "the status of the theory, the adequacy of the measures, and the representativeness of the sample" (Oivo and Komi-Sirviö, 2002). Browne and Cudeck (1993) also indicate that for a model with good fit, GFI should be greater than 0.80.

Confirmatory factor analysis is used to evaluate the convergent validity of latent variables. Convergent validity refers to the extent to which two or more items measure the same construct (Bagozzi and Phillips, 1982). The convergent validity of the items is examined by the factor loadings, average variance extracted (AVE), and composite reliability (CR). According to Hair et al. (1998), factor loadings that equal to 0.50 or greater are considered practically significant. The factor loadings of all remaining items in the research model are greater than 0.60, indicating that all items exceed the recommended factor loading value (Hair et al., 1998). The AVE measures the shared variance in a latent variable and gives information about convergence of measurement items. All items, except price, exceed the 0.50 threshold (Fornell and Larcker, 1981); however, according to Fornell and Larcker (1981), if AVE is less than 0.5, but composite reliability is higher than 0.6, the convergent validity of the construct is still adequate (Huang et al., 2013). As the AVE value of price (0.47) is close enough to 0.50 and its composite reliability is 0.72, there is an acceptable convergence among the items of price. Composite reliability measures an internal consistency of the measurement model, and all the composite reliabilities meet the minimum required level of 0.70 (Fornell and Larcker, 1981). Cronbach's alpha is used to measure internal consistency in each construct and 0.70 is accepted as a lower limit for the Cronbach's alpha (Hair et al., 1998). In this study, all values of Cronbach's alpha exceed the 0.70 threshold, suggesting that each

Table 2
Construct, code, and the items.

	Construct (number of items)	Code	Items
	Loyalty (3) (Akamavi et al., 2015)	LOY01	I consider this airline to be my first choice when flying.
		LOY02	I consider myself as a regular customer of this airline.
		LOY03	I prefer to fly with this airline as opposed to competitors.
	Image (3) (Nguyen and Leblanc, 2001)	IMG01	I have always had a good impression of this airline.
		IMG02	In my opinion, this airline has a good image in the minds of customers.
		IMG03	I believe that this airline has a better image than its competitors.
	Satisfaction (3) (Bhattacherjee, 2001)	SAT01	In comparison to other airlines, I am satisfied with the airlines' service.
		SAT02	I am satisfied with the airlines' personnel.
		SAT03	This airline values customers' comments.
	Price (Mikulic and Prebezac, 2011)	PRC01*	Ticket prices were affordable.
		PRC02	Baggage overweight fees were affordable.
		PRC03	Inflight shop prices were affordable.
		PRC04	Loyalty program discounts/rewards were satisfying.
Service Quality (Kang and James, 2004)	Reliability (5)	REL01	I consider the airline provided services as promised.
		REL02	I consider the airline was dependable in handling customers' service.
		REL03	I got the services right at the first time.
		REL04	I got the services at the promised time
		REL05*	Airline gave error-free information.
	Responsiveness (4)	RES01*	Airline kept me informed about when services will be performed.
		RES02	The service I need provided promptly.
		RES03	Employees were willing to help customers.
		RES04	Employees were ready to respond to customers' requests.
	Assurance (4)	ASR01	Employees instilled confidence into me.
		ASR02	Employees made me feel safe.
		ASR03	Employees were consistently courteous.
		ASR04	Employees were competent to answer customer questions.
	Empathy (5)	EMP01	Employees gave customers individual attention.
		EMP02	Employees deal with customers in a caring fashion.
		EMP03	Employees deal with customers sincerely.
		EMP04	Employees understand the needs of their customers.
		EMP05*	Flight hours were convenient.
	Tangibles (4)	TAN01	Facilities were visually appealing.
		TAN02	Employees had a neat, professional appearance.
		TAN03	Employees had a neat, professional appearance.
		TAN04	Materials were visually appealing.

*Items are excluded.

Table 3
Fit statistics of the first-order confirmatory factor analysis (measurement model).

Fit Index	Recommended value	Untrimmed original model	Observed value
$\chi2/df$ ($\chi2$; df)	<3.00	1.80 (941.43; 524)	1.77 (654.49; 369)
RMSEA	<0.10	0.068	0.067
GFI	>0.90	0.76	0.80
CFI	>0.90	0.95	0.97
IFI	>0.90	0.96	0.97
NFI	>0.90	0.93	0.94
SRMR	<0.10	0.074	0.069

factor has a good internal consistency. Thus, all these statistics demonstrated the convergent validity of the measurement model. The summary of convergent validity measurements is given in Table 4.

5.1.2. Second order factor analysis

A second-order confirmatory factor analysis is conducted to confirm that service quality is multidimensional. As shown in Table 5, χ^2 to degrees of freedom ratio at 1.68, RMSEA at 0.063, NFI at 0.95, CFI at 0.98, GFI at 0.87, and SRMR at 0.063 are within acceptable levels (Hair et al., 1998; Kelloway, 1998; Roca et al., 2006; Schermelleh-Engel et al., 2003), suggesting that the model provided a reasonably good fit to the data. Accordingly, the results recommend that the construct of service quality includes the following subdimensions: reliability, responsiveness, assurance, empathy, and tangibles and composite score is calculated using these subdimensions to represent service quality.

5.1.3. Second order factor analysis

A second-order confirmatory factor analysis is conducted to confirm that service quality is multidimensional. As shown in Table 5, χ^2 to degrees of freedom ratio at 1.68, RMSEA at 0.063, NFI at 0.95, CFI at 0.98, GFI at 0.87, and SRMR at 0.063 are within acceptable levels (Hair et al., 1998; Kelloway, 1998; Roca et al., 2006; Schermelleh-Engel et al., 2003), suggesting that the model provided a reasonably good fit to the data. Accordingly, the results recommend that the construct of service quality includes the following sub dimensions: reliability, responsiveness, assurance, empathy, and tangibles, and composite score is calculated using these sub dimensions to represent service quality.

5.2. Structural model

The relationships between constructs are indicated in the structural model (Hair et al., 1998). As seen in Table 6, χ^2 to degrees of freedom ratio at 1.77, CFI at 0.95, IFI at 0.95, and NFI at 0.93 are

Table 4
Confirmatory factor analysis.

Construct	Item	Mean	Standard deviation	Factor	*t*-statistics
Loyalty	LOY01	3.67	1.16	0.88	14.5
	LOY02	3.54	1.24	0.91	15.23
	LOY03	3.66	1.12	0.89	14.74
Image	IMG01	3.88	0.88	0.83	12.92
	IMG02	3.88	0.86	0.84	13.22
	IMG03	3.79	0.98	0.84	13.24
Satisfaction	SAT01	3.96	0.79	0.81	12.23
	SAT02	4.08	0.68	0.71	10.29
	SAT03	3.74	0.85	0.66	9.31
Price	PRC02	3.22	1.01	0.73	9.38
	PRC03	3.14	1.02	0.67	8.57
	PRC04	3.39	0.90	0.65	8.06
Reliability	REL01	4.15	0.72	0.74	10.55
	REL02	4.04	0.81	0.79	11.41
	REL03	4.05	0.73	0.71	9.98
	REL04	3.99	0.80	0.69	9.62
Responsiveness (RES)	RES02	3.99	0.78	0.56	7.61
	RES03	4.15	0.76	0.86	13.32
	RES04	4.03	0.86	0.80	11.97
Assurance	ASR01	4.01	0.81	0.82	12.69
	ASR02	4.04	0.78	0.73	10.82
	ASR03	4.18	0.74	0.76	11.48
	ASR04	4.02	0.78	0.65	9.29
Empathy	EMP01	3.89	0.81	0.78	11.8
	EMP02	4.03	0.79	0.90	14.69
	EMP03	3.97	0.84	0.83	12.9
	EMP04	4.0	0.75	0.67	9.51
Tangibles	TAN01	3.85	0.87	0.73	10.21
	TAN02	3.7	0.84	0.89	13.25
	TAN04	3.78	0.80	0.70	9.76

	Composite reliability (CR)	Average variance extracted (AVE)	Cronbach's alpha
Loyalty	0.92	0.80	0.92
Image	0.88	0.70	0.87
Satisfaction	0.77	0.53	0.77
Price	0.72	0.47	0.72
Reliability	0.82	0.54	0.83
Responsiveness	0.79	0.56	0.77
Assurance	0.83	0.55	0.83
Empathy	0.87	0.63	0.87
Tangibles	0.82	0.60	0.81

within acceptable levels (Hair et al., 1998; Kelloway, 1998; Roca et al., 2006; Schermelleh-Engel et al., 2003) except for GFI at 0.80 and RMSEA at 0.11. As mentioned earlier, a minimum value of 0.80 can also be accepted as a threshold of GFI. Moreeover, Schermelleh-Engel et al. (2003) suggest that RMSEA values over 0.10 are a sign of weak model fit but not an unacceptable model fit. In our study, as GFI value is found to be 0.80 and RMSEA value is found very close to 0.10, we suggest that the model provides a reasonably good fit to the data.

The value of R^2 indicates that the percentage of total variance of the dependent variable explained by independent variables. This implies that our research model has 71% ($R^2 = 0.71$) of total variance of loyalty, 75% ($R^2 = 0.75$) of total variance of image, and 55% ($R^2 = 0.55$) of total variance of satisfaction. In addition, all hypotheses except H3 are supported in a significance level of p < 0.01. Fig. 2 shows the standardized path coefficients with their respective significance levels and the explanatory power of the model for dependent variables.

The results show that image is found to be a significant direct determinant of loyalty whereas the direct effect of satisfaction on loyalty is found insignificant. The other results indicate that image is explained by satisfaction. In addition, service quality and price are found to have positive effects on satisfaction. However, the relative strengths of their explanatory power are different. Compared with price, the service quality is found to be a stronger

determinant of satisfaction.

Table 7 shows the direct, indirect, and total effects of each construct on the loyalty. As shown in Table 7, image has the highest direct and total effect on loyalty. Further, satisfaction has an indirect effect on loyalty even the hypothesis having a direct positive effect on loyalty is rejected. In addition, service quality and price have also significant indirect effects on loyalty through satisfaction and image.

6. Discussion

The explanation rate of passenger loyalty, which is 0.71, is relatively high in this study compared with the other studies in the literature (Akamavi et al., 2015; Mikulić and Prebežac, 2011). First, the results contribute to the literature of passenger loyalty in the airline industry by showing that image is a significant factor in affecting the passenger loyalty. A better image leads the customers to be more loyal to airline and increases the repurchase tendency. Consistent with our findings, Akamavi et al. (2015) have found that image has a positive direct effect on passenger loyalty.

Second, result of this study reveals that the image is explained by satisfaction. Therefore, satisfied passengers may make good reviews about the airline company and recommend it to the others. Accordingly, the airline company will have a good image of itself in the market and its reputation will increase.

Table 5
Results of the first-order and second-order confirmatory factor analysis.

Dimensions and items	First order		*t*-value	Second order		*t*-value
	Standardized loading			Standardized loading		
Reliability						
REL01	0.74			0.62		6.83
REL02	0.78		9.16			
REL03	0.72		8.60			
REL04	0.70		8.38			
Responsiveness						
RES02	0.57			0.92		7.37
RES03	0.84		7.67			
RES04	0.80		7.50			
Assurance						
ASR01	0.81			0.99		12.37
ASR02	0.73		10.47			
ASR03	0.76		11.06			
ASR04	0.66		9.21			
Empathy						
EMP01	0.78			0.92		10.62
EMP02	0.90		12.76			
EMP03	0.83		11.6			
EMP04	0.66		8.93			
Tangibles						
TAN01	0.72			0.46		5.1
TAN02	0.89		8.98			
TAN04	0.70		8.36			

$\chi^2 = 218.76$ ($p < 0.00$); df = 130; RMSEA = 0.063; NFI = 0.95; CFI = 0.98; GFI = 0.87; SRMR = 0.063.
$p < 0.01$.

Table 6
Fit statistics for structural model.

Fit index	Recommended value	Observed value
χ^2/df (χ^2; df)	<3.00	1.77 (356.66; 113)
RMSEA	<0.10	0.11
GFI	>0.90	0.80
CFI	>0.90	0.95
IFI	>0.90	0.95
NFI	>0.90	0.93
SRMR	<0.10	0.089

Furthermore, this study also contributes to the literature introducing external variables into the models. Price and service quality are found to be the antecedents of satisfaction, suggesting that affordable ticket prices and good service will lead passengers to be more satisfied. Out of these two factors, service quality has a higher direct impact on satisfaction. Similar to the findings of Akamavi et al. (2015), price has a significant influence on satisfaction, whereas similar to the findings of Namukasa (2013) service quality has a positive impact on satisfaction.

Moreover, it is found that satisfaction has insignificant direct effect on passenger loyalty. In contrast to our findings, Akamavi et al. (2015), Forgas et al. (2010), and Namukasa (2013) have found that satisfaction is significantly related to loyalty. This finding, which differs from our study, may be explained by considering the difference among airline companies, flight route, and region.

In addition, since the data were collected from passengers who traveled from Frankfurt to Istanbul, they had the chance to assess their flight experience including check-in, boarding, flight, baggage claim, etc. In the other studies (Akamavi et al., 2015; Mikulić and Prebežac, 2011; Namukasa, 2013), since passengers have participated in the questionnaire before they experience all parts of the flights, they may have answered based on their expectations from the flight; that is why, this study shows more realistic and more reliable results.
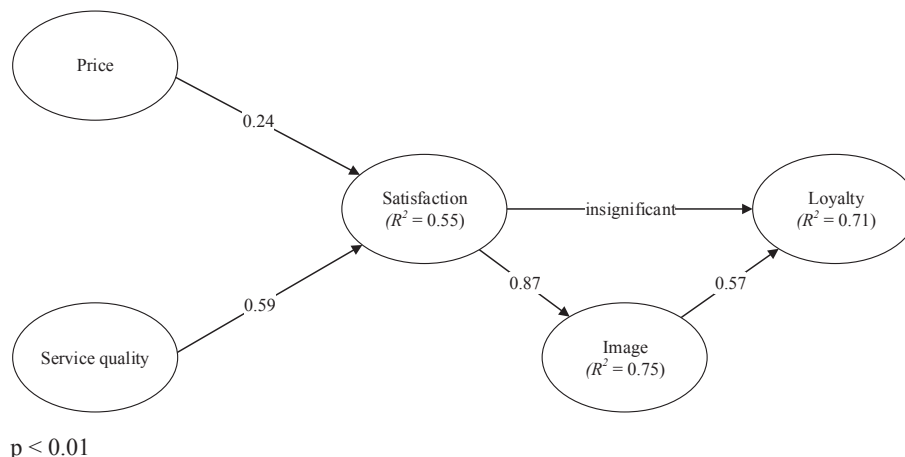
Fig. 2. The results of the research model.

Table 7
Direct, indirect, and total effects on loyalty.

Dependent variable	Independent variables	Direct effects	Indirect effects	Total effects
Loyalty	Satisfaction	Insig.	0.50	0.50
	Image	0.57	–	0.57
	Service Quality	–	0.29	0.29
	Price	–	0.12	0.12

Insig.: Insignificant.

The findings of this study provide a better understanding of the factors affecting the passenger loyalty, but we should also consider their several limitations. First, 71% of passenger loyalty, 75% of image, and 55% of satisfaction are explained in the model. Thus, a considerable percentage of the variables remains unexplained, suggesting the need for a future study to explain passenger choice. Therefore, some additional factors such as passenger trust (Akamavi et al., 2015; Forgas et al., 2010), perceived value (Forgas et al., 2010), and word of mouth (Nadiri et al., 2008; Suki, 2014) that may be important in explaining the passenger loyalty can be included in a model of further studies.

Second, the effects on demographic attributes were not analyzed in this study. A similar study including demographic characteristics, such age, annual income, and flights in a year, may be a subject for future research. Third, the increase in the size of the collected data, group differences between FSNCs and LCCs, and different airline companies may be analyzed for further study.

Finally, this study may be combined with qualitative analysis to understand and interpret the passenger loyalty because both qualitative and quantitative aspects may complement each other for further understanding.

7. Conclusion

This study examines the influence of image, satisfaction, price, and service quality on passenger loyalty in the airline industry. A total of 237 questionnaires were collected between April 2015 and May 2015. One hundred seventy-five out of these 237 questionnaires were considered as valid. Structural equation modeling is used to analyze the relationships defined in the proposed research model. Furthermore, among five hypotheses, four of them were supported by the data collected from passengers in face-to-face interviews in the baggage claim area of international arrivals at Ataturk International Airport (IST) in Turkey who traveled from Frankfurt to Istanbul.

This study shows the importance of price and service quality. Therefore, the effect of price and service quality should be taken into consideration for passenger loyalty. Customers will be more likely to repurchase a ticket as long as airline companies provide a good service and more affordable ticket prices or the higher rewards on loyalty programs. An airline company which provides good services to its passengers consistently and deals with its passengers in an effective and positive way makes their passengers more satisfied, leading that a good brand name will be created in the market.

Also, better loyalty programs and good pricing strategies of the management will be a powerful tool for the airline companies in order to increase the satisfaction level of their passengers and make them reuse that airline company for future flights. Airline companies should employ different marketing strategies to create a powerful brand image in customer's mind and they should also improve and enhance the experience of customer to differentiate themselves from other airline companies; that is why, developing and upgrading their services at the each stage of the flight are essential.

References

Akamavi, R.K., Mohamed, E., Pellmann, K., Xu, Y., 2015. Key determinants of passenger loyalty in the low-cost airline business. Tour. Manag. 46, 528–545.

Anderson, J.C., Gerbing, D.W., 1988. Structural equation modeling in practice: a review and recommended two-step approach. Psychol. Bull. 103 (3), 411–423.

Bagozzi, R.P., Phillips, L.W., 1982. Representing and testing organizational theories: a holistic construal. Adm. Sci. Q. 27 (3), 459–489.

Bhattacherjee, A., 2001. Understanding information systems continuance: an expectation-confirmation model. MIS Q. 25 (3), 351–370.

Blodgett, J.G., Hill, D.J., Tax, S.S., 1997. The effects of distributive, procedural, and interactional justice on postcomplaint behavior. J. Retail. 73 (2), 185–210.

Browne, M.W., Cudeck, R., 1993. Alternative ways of assessing model fit. In: Bollen, K.A., Long, J.S. (Eds.), Testing Structural Equation Models. Sage, Newbury Park, CA, pp. 136–162.

Chang, L.-Y., Hung, S.-C., 2013. Adoption and loyalty toward low cost carriers: the case of Taipei–Singapore passengers. Transp. Res. Part E Logist. Transp. Rev. 50, 29–36.

Cohen, J., 1992. A power primer. Psychol. Bull. 112 (1), 155–159.

Forgas, S., Moliner, M.A., Sánchez, J., Palau, R., 2010. Antecedents of airline passenger loyalty: low-cost versus traditional airlines. J. Air Transp. Manag. 16 (4), 229–233.

Fornell, C., Larcker, D., 1981. Evaluating structural equation models with unobservable variables and measurement error. J. Mark. Res. 18 (1), 39–50.

Grönroos, C., 1984. A service quality model and its marketing implications. Eur. J. Mark. 18 (4), 36–44.

Hair, J.F., Anderson, R.E., Tatham, R.L., Black, W.C., 1998. Multivariate Data Analysis, fifth ed. Prentice Hall, Englewood cliffs, NJ.

Huang, C.C., Wang, Y.M., Wu, T.W., Wang, P.A., 2013. An empirical analysis of the antecedents and performance consequences of using the moodle platform. Int. J. Inf. Educ. Technol. 3 (2), 217.

Jöreskog, K., Sörbom, D., 2006. LISREL.

Kang, G., James, J., 2004. Service quality dimensions: an examination of Grönroos's service quality model. Manag. Serv. Qual. Int. J. 14 (4), 266–277.

Kelloway, E.K., 1998. Using LISREL for Structural Equation Modeling: a Researcher's Guide. SAGE Publications.

Mikulić, J., Prebežac, D., 2011. What drives passenger loyalty to traditional and low-cost airlines? A formative partial least squares approach. J. Air Transp. Manag. 17 (4), 237–240.

Munusamy, J., Chelliah, S., Pandian, S., Business, F., Street, K., 2011. Customer satisfaction delivery in airline industry in Malaysia: a case of low cost carrier. Aust. J. Basic Appl. Sci. 5 (11), 718–723.

Nadiri, H., Hussain, K., Haktan Ekiz, E., Erdoğan, Ş., 2008. An investigation on the factors influencing passengers' loyalty in the North Cyprus national airline. TQM J. 20 (3), 265–280.

Namukasa, J., 2013. The influence of airline service quality on passenger satisfaction and loyalty. In: Muturi, D. (Ed.), The TQM Journal, 25(5), pp. 520–532.

Nguyen, N., Leblanc, G., 2001. Corporate image and corporate reputation in customers' retention decisions in services. J. Retail. Consum. Serv. 8 (4), 227–236.

Oivo, M., Komi-Sirviö, S., 2002. Product Focused Software Process Improvement: 4th International Conference, PROFES 2002 Rovaniemi, Finland, December 9-11, 2002, Proceedings. Springer Science & Business Media.

Oliver, R., 1981. Measurement and evaluation of satisfaction processes in retail settings. J. Retail. 57 (3), 25–48.

Oliver, R.L., 1997. Satisfaction: a Behavioral Perspective on the Consumer. Routledge.

Rhoades, D.L., Waguespack, B., 2008. Twenty years of service quality performance in the US airline industry. Manag. Serv. Qual. Int. J. 18 (1), 20–33.

Roca, J.C., Chiu, C.-M., Martínez, F.J., 2006. Understanding e-learning continuance intention: an extension of the technology acceptance model. Int. J. Hum. Comput. Stud. 64 (8), 683–696.

Schermelleh-Engel, K., Moosbrugger, H., Müller, H., 2003. Evaluating the fit of structural equation models: tests of significance and descriptive goodness-of-fit measures. Methods Psychol. Res. Online 8 (2), 23–74.

Suki, N.M., 2014. Passenger satisfaction with airline service quality in Malaysia: a structural equation modeling approach. Res. Transp. Bus. Manag. 10, 26–32.

Vlachos, I., Lin, Z., 2014. Drivers of airline loyalty: evidence from the business travelers in China. Transp. Res. Part E Logist. Transp. Rev. 71, 1–17.