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Service Quality and Its Impact on Customer Satisfaction and Loyalty in Airline Industry: Partial Least Square (PLS)-Structural Equation Modelling (SEM) Approach.

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Abstract: This quantitative paper aims to measure the service quality of airline service perceived by Pakistani customers, and its impact on customer satisfaction and loyalty. Partial Least Square Structural - Equation Modelling (PLS-SEM) was used to measure the relationship. It used a self-administered questionnaire by incorporating AIRQUAL measurement model. Respondents (n=168) who have travelled from Pakistan to Malaysia were sent questionnaire through social media. Convenience sampling technique was used, and the results revealed that Airline Tangibles, Personnel Services, and Image have a positive and significant relationship with Customer Satisfaction whereas Empathy and Terminal Tangibles showed an insignificant relationship with Customer Satisfaction. Results also showed a strong positive relationship between Customer Satisfaction and Customer Loyalty. Moreover, the management of airlines and airport services need to reconsider the services they provide to their customers who are travelling from Pakistan to Malaysia.

Keywords: Service Quality, Customer Satisfaction, Customer Loyalty, PLS-SEM, Airline Industry, AIRQUAL

INTRODUCTION

Business in current dynamics has been changed as compared to that of past; working in these conditions requires a lot of effort. Satisfying customers has become a very critical and costly factor for businesses. The competition has increased and people have more options than before and retaining them is a real problem especially in airlines (Faizan, 2015). Airline industry plays vital role in development of economy as it also facilitates tourism (Graham Saunders, 2008; Koo, Lim, & Dobruszkes, 2017) and is no more used by high-end individuals instead it is used for general public which mainly contributes in economic development (Wang, Zhu, Sun, & Jia, 2018).

In the demanding circumstances airlines are pushed to reduce cost in order to be efficient in terms of the revenue they earn; while putting their efforts to achieve this target, service quality concerning customer satisfaction remains the centre of importance (Boetsch, Bieger, & Wittmer, 2011). However, either it was the service sector or manufacturing sector service quality was the principal element that affected customer satisfaction, repurchase intention and behaviour (Oliver, 1980).

It is employees who are responsible for a critical factor that is 'Service Quality' which leads to not only organizational performance but also revenue generation in tough times (Muturi, Sagwe, & Namukasa, 2013; Ong & Tan, 2010). Service quality has been studied by different researchers (M S Farooq, Aslam, Khan, & Gillani, 2009; Izogo & Ogba, 2015; Shabbir, Malik, & Malik, 2016). It received substantial attention which turned this into core marketing instrument (Gustafsson, Biel, & Garling, 1999; Mat Zaid, 1995) but still there is room to investigate and explore service quality further in the airline industry (Faizan, 2015; Muhammad Shoaib Farooq et al., 2017).

Previous studies which investigated this subject incorporated five dimensions of AIRQUAL, customer satisfaction and repurchase intention to judge service quality (Muhammad Shoaib Farooq, Salam, Fayolle, Jaafar, & Ayupp, 2018), but the current study also incorporated customer loyalty (Meesala & Paul, 2018) to judge service quality, and no such research was conducted in Pakistan which incorporated PLS-SEM technique to analyse data concerning service quality of airlines flying from Pakistan to Malaysia and respondents who travelled from Pakistan to Malaysia.

For parsimony, this paper is divided into a total of five sections. It begins with the first section of the introduction and background of the study. Section two consists of a literature review which includes the development of hypothesis with the concepts of service quality and its dimensions with customer satisfaction and loyalty. The third section explains research methodology while the fourth section reveals and explains data analysis and results of the study. The last section discusses the conclusion, its implications, limitations and future research directions.

LITERATURE REVIEW

Service Quality

Service quality is defined in various studies particularly in services and marketing literature, along with some sub-dimensions (Muhammad Shoaib Farooq et al., 2018; Trischler & Lohmann, 2018**).** It is the difference between service expectations and customer's perception about actual services which is called a function of service quality (Ananthanarayanan Parasuraman, Zeithaml, & Berry, 1988). Customers compare that actual service to their expectations, and these expectations are formed from their past experiences, perceptions, and word of mouth (Tsoukatos & Mastrojianni, 2010). Moreover, it is an overall appraisal from customer to the efforts of a service provider that defines service quality and whether these efforts fit which customer desires and expectations or not? This will in return influence outcomes of service quality such as satisfaction, repurchase intention and loyalty of customers (Muhammad Shoaib Farooq et al., 2018; Meesala & Paul, 2018; R.-F. Chen, Hsiao, & Hwang, 2012).

Being not a monolithic concept, service quality depends on its various dimensions which vary in importance and in defining service quality in total (Graham Saunders, 2008). The most commonly cited source for service quality literature is (Anantharanthan Parasuraman, Zeithaml, & Berry, 1985) but in this era of high competition this topic remained under the focus of researchers whose major works reflected business development and services marketing (Aagja & Garg, 2010; Abu-El Samen, Akroush, & Abu-Lail, 2013; M S Farooq et al., 2009; Qin, Prybutok, & Zhao, 2010; Shabbir et al., 2016).

Service quality has piper's role in creating customer satisfaction (Smith & Swinehart, 2001) and customer loyalty (Meesala & Paul, 2018), it was also confirmed by (Hu, Cheng, Chiu, & Hong, 2011). Also it is service quality that creates competitive advantage and generates profits for business (Alexandris, Dimitriadis, & Markata, 2002; Chow, 2014; Gupta & Singh, 2017; Shi, Prentice, & He, 2014).

Anantharanthan Parasuraman et al., (1985) developed a comprehensive model which measured service quality; it included ten dimensions i.e. "tangibles, reliability, responsiveness, understanding the customers, access, communication, credibility, security, competence and courtesy". Later the model was modified and limited to five dimensions i.e. "tangibles, reliability, responsiveness, assurance and empathy". Nevertheless, this scale contains weaknesses which were highlighted by (Cronin Jr & Taylor, 1992, 1994). Then Cronin Jr & Taylor, (1992) studied four industries and come up with another measurement model which was known as 'SERVPERF'. They questioned the basis of SERVQUAL in a way that only performance should be included to measure service quality not the expectation (Meesala & Paul, 2018).

Some issues and operations are very specific in the airline industry (Park, Robertson, & Wu, 2005) which are not incorporated by SERVQUAL because it gives a general guideline to measure service quality (Wu & Ko, 2013). Many scholars suggested that it is "moment of truth" at which expectations are formed by customers (Muhammad Shoaib Farooq et al., 2017; Muturi et al., 2013; Radović-Marković, Shoaib Farooq, & Marković, 2017; Wu & Cheng, 2013). So to incorporate airline-specific industry dimensions scholars tried to incorporate added dimension in their scales like Gourdin, (1988) explained the concept of service quality in the context of the airline industry with the help of three dimensions those were price, safety concerns and schedules of flights. Whereas Ostrowski, O'Brien, & Gordon, (1993) done the same but with the inclusion of seats' comfort, quality of food and schedules of flights. On the other hand, Truitt & Haynes, (1994) recommended to include cleanness of aeroplane seats, timeliness of flights, food and beverages, check-in process, and complain handling system as dimensions to measure the quality of service in the airline industry. In addition to it, one more study which was by Muturi et al., (2013) included pre and post-flight service quality along with during the service of flight and confirmed that those categories were equally important to influence perceived service quality which would lead to influence customer satisfaction and loyalty.

To resolve these inconsistencies and varying point of views regarding service quality Hussain & Ekiz, (2007) presented a conclusive and comprehensive model named AIRQUAL to assess service quality particularly in the airline industry. It comprised of five dimensions which were airline tangibles, terminal tangibles, personnel services, empathy and image. After that model was validated by Nadiri, Hussain, Haktan Ekiz, & Erdoğan,(2008). Despite it, they called for further studies to validate this model in a broader context.

Based on the above mentioned studies, the current study adopted AIRQUAL measurement scale. It is used to measure and analyse service quality in the airline industry. All five dimensions are briefly explained in later parts of this paper.

Airline Tangibles

Airline tangibles include the overall condition of aircraft which includes its interior and exterior, catering services, seating comfort and cleanliness (Faizan, 2015). These are cues which are tangible in nature and also are used to measure the service quality of the airline industry (Hussain & Ekiz, 2007). It is also considered one of the essential dimensions in measuring the service quality of a Airline Company (M S Farooq & Radovic-Markovic, 2016; Gudmundsson, 1998). Unlike results of the study of Meesala & Paul, (2018) which claimed that reliability has no impact on creating customer satisfaction but reliability and responsiveness has an influence on it. These varying thoughts need attention and focus developing a consistent view about it and used in a broader context.

Terminal Tangibles

Cues that are available at airport terminals are referred to terminal tangibles that are part of service quality provided at these terminals (Hussain & Ekiz, 2007). According to Faizan, 2015; Wu & Cheng, (2013) it includes sign-board system at terminal, security and control system, an air-conditioning system at the airport, toilet conditions and information counters for passengers whereas Prentice & Kadan, (2019) referred these as servicescape which includes all facilities which facilitate passenger's departure. Moreover, they found that only airport services and servicescape have unique significant contribution to passenger's satisfaction. These are the most visible indicators of airline service quality and have direct influence in building the overall image of Airline Company (Ariffin & Yahaya, 2013).

Personnel Services

The attitude and behaviour of the airline's staff towards its customers is the subject matter of personnel services. It includes services of the staff at terminal and attendants in flight (Boetsch et al., 2011; Hussain & Ekiz, 2007). It also encompasses ticketing without any errors, personal care, the responsiveness of crew members and attitude of helping towards customers (Muturi et al., 2013).

Empathy

Empathy is defined as giving attention to individual customers, and focusing on individual needs (Psychogios, Atanasovski, & Tsironis, 2012). It is the one which is known as an integral part of service quality and also plays a vital role in any service (Humphrey, 2013; Radović-Marković et al., 2017). In the airline industry, empathy results from hassle-free service; that involves carefully handling the luggage, well-developed compensation plan in case of any loss and courteous ticketing service (M S Farooq & Radovic-Markovic, 2016; Hussain & Ekiz, 2007). Many researchers have proven that empathy results in retention of customers (Chang & Yeh, 2002; M S Farooq et al., 2009; Humphrey, 2013; Hussain & Ekiz, 2007) which is very important for any business to be successful in this highly competitive environment. The importance of empathy is also confirmed by Muhammad Shoaib Farooq et al., (2018) who verified that empathy has a relation with customer satisfaction which is significant.

Airline Image

As per Gudmundsson, (1998) who mentioned that the life cycle of the airline industry is not different in comparison of other industries. In order to maintain it like other industries it has to give promotional offers and frequent flyers programme (Gudmundsson, de Boer, & Lechner, 2002; Radović-Marković et al., 2017). It comprises of the overall image of the company (Hussain & Ekiz, 2007). Therefore airlines must take it as a most vital and essential factor in their services (Nadiri et al., 2008; Radović-Marković et al., 2017). Muhammad Shoaib Farooq et al., (2018) mentioned that the airline company image significantly impacted customer satisfaction which was also highlighting the importance of image in the airline industry.

Customer Satisfaction

Customer satisfaction originates from customers' feelings of pleasure or disappointment, which are the outcomes of comparison between service products' performance and customers' expectations (Kotler & Caslione, 2009). Customer satisfaction remained a key focus of airline companies as satisfied customers remain loyal to airline companies (Faizan, 2015) and for sustaining business and making it profitable, customers must be satisfied (M S Farooq & Radovic-Markovic, 2016; Izogo & Ogba, 2015; Radović-Marković et al., 2017). In order to gain competitive edge companies try hard to satisfy their customers (Djajanto, Nimran, & Kumadji, n.d.; Faizan, 2015; Muhammad Shoaib Farooq et al., 2018; Shi et al., 2014). Moreover, it is considered a useful tool to measure the effectiveness of product or service used and experienced by customers (Berezina, Cobanoglu, Miller, & Kwansa, 2012).

Despite being under a great focus in the literature, its relationship with service quality remained controversial. Several studies confirmed that service quality is the predictor of customer satisfaction (Cronin Jr & Taylor, 1992; Ananthanarayanan Parasuraman et al., 1988; McDougall & Levesque, 2000; Levesque & McDougall,

2000) while others considered customer satisfaction as antecedent of perceived service quality (Andreassen & Lindestad, 1998; Bitner, 1990; Bolton & Drew, 1991). In order to resolve this inconsistency and differing school of thoughts Faizan, (2015) and Han, Kwortnik Jr, & Wang, (2008) took the notion of the former school of thought and checked the role of service quality in measuring customer satisfaction. It was found that perceived service quality had a strong relationship with customer satisfaction and hence satisfied customers were more likely be retained as compared to unsatisfied customers (Archana & Subha, 2012; Faizan, 2015; Gudmundsson & Lechner, 2006).

Customer Loyalty

Customer satisfaction leads customers to loyalty and re-purchasing behaviour for the service products of the company (Valerie A Zeithaml, Bitner, & Gremler, 1996).The customer who purchases several times from one company is known as a loyal customer (Valerie A Zeithaml et al., 1996). Almost half of the customers stay with the company even though when their need is not satisfied with its offering (Levesque & McDougall, 2000). According to L. Chen, Li, & Liu, (2019), Cretu & Brodie, (2007) and Jiang & Zhang, (2016) brand equity plays a vital role for a service organization to achieve customer satisfaction, loyalty and trust. In the airline industry, satisfied customers remain loyal to the firm for a more extended period of time and similarly unsatisfied customers switch from one provider to other who rarely return to their previous service provider (Archana & Subha, 2012; Faizan, 2015; Gudmundsson & Lechner, 2006). Nadiri et al., (2008) used AIRQUAL to judge the impact of North Cyprus Airline's service quality on customer loyalty and later (Faizan, 2015) used this model as well. However they recommended assessing it in different dimensions and contexts to generalize this Model.

Customer Satisfaction and Service Quality-Hypothesis

Service quality is considered as a strong predictor of customer satisfaction (McDougall & Levesque, 2000) in addition to it, as per findings of (dan Theingi, 2009) perceived service quality has a strong positive relationship with customer satisfaction. Based on these studies and the notion of Faizan, (2015) and Han et al., (2008) we took service quality as an antecedent of customer satisfaction. As we discussed earlier AIRQUAL model is used to measure service quality and it has five dimensions to define it. In light of all these things and study of (Muhammad Shoaib Farooq et al., 2018) we have taken below given hypothesis to measure customer satisfaction of customers who have travelled with any airline from Pakistan to Malaysia.

H1. Perceived Quality of Airline Tangibles impacts Customer Satisfaction positively and significantly.
H2. Perceived Quality of Terminal Tangibles impacts Customer Satisfaction positively and significantly.
H3. Perceived Quality of Personnel Services impacts Customer Satisfaction positively and significantly.
H4. Perceived Empathy impacts Customer Satisfaction positively and significantly.
H5. Perceived Airline Image impacts Customer Satisfaction positively and significantly.

2.1 Customer Satisfaction and Customer Loyalty Hypothesis

As service quality creates customer satisfaction which leads to the loyalty of the customer. As it is confirmed and proved that there is more likelihood for satisfied customer and unsatisfied customer to remain loyal to the firm and switch from the firm respectively (Archana & Subha, 2012; Faizan, 2015; Gudmundsson & Lechner, 2006; Alegre & Cladera, 2009; Andaleeb, 2001; Cronin Jr, Brady, & Hult, 2000; Lee, Chen, Chen, & Chen, 2010; Rust, Zahorik, & Keiningham, 1995; Woodside, Frey, & Daly, 1989; Žabkar, Brenčič, & Dmitrović, 2010; Valarie A Zeithaml, Berry, & Parasuraman, 1996). Based on these studies we have developed a below-mentioned hypothesis to measure the loyalty of customers.

H6. There is a direct, positive and significant relationship between Customer Satisfaction and Customer Loyalty.

RESEARCH METHODOLOGY

Sampling and Questionnaire

The study was conducted on the responses of respondents who have travelled by air from Pakistan to Malaysia. Convenience sampling technique was used to collect the data from the respondents. They were approached from different sources of social media such as Facebook, Whatsapp, and emails. They were requested to fill the form (Survey instrument) which was developed on Google forms. We received 168 responses. All of them were well filled with no missing value in it. We did not find any outliers as well. The survey instrument was adapted from the studies of (Hussain & Ekiz, 2007; Westbrook & Oliver, 1991).

The final questionnaire consisted of 36 items. Six items belonged to the first dimension of Service quality that was airline tangibles (AT), among other items seven items of terminal tangibles (TT), seven items of personnel services (PS), six items of empathy (E), three items of image (I), four items of customer satisfaction (CS) and last three items of customer loyalty (CL) were studied.

ANALYSIS

Test of Common - Method Variance Bias

Data were analysed by using the IBA SPSS and SmartPLS (Hair Jr, Sarstedt, Ringle, & Gudergan, 2017; Ringle & Sarstedt, 2016). PLS-SEM was useful and that was why it was used in the study because it could measure both reflective and formative models as compared to other counterparts such as AMOS. Harman, (1976) one-factor test was taken for this study for which other approach and guidelines of (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) were observed. The principal component analysis was run after entering all items of measurement scale and to check the signs of a single factor with the help of factor analysis. It was run with varimax rotation. Seven different factors from 36 measurement items which were - Airline Tangibles, Terminal Tangibles, Personnel Services, Empathy, Image, Customer Satisfaction and Customer Loyalty were extracted in the results with rotation converged in 8 iterations. The result shows that there is not any identification of biasness in common-method variance.

Data Screening and Pre-Analysis

To check possible statistical error, thorough screening was processed related to normality, outliers, demographic characteristics and missing values. Fortunately, no missing value was found while screening through a built-in feature of SmartPLS.

Further, the descriptive analysis test was conducted to analyse attributes of respondents' gender, age, and education. Also the type of traveller was categorized as a frequent flyer or not frequent flyer. Among 168 respondents 23.8% were females whereas males were 75.6%. One respondent preferred not to mention its gender. Majority of our respondents (48.2%) were aged between 30 to 40 years followed by those (45.8%) who were aged between 20 and 30 years. In others 3% of those who were aged between 40 and 50 years and above 50 years respectively. As per their qualification, the majority were post-graduate (67.3%) followed by graduates (22.6%) and undergraduates (10.1%). 54.8% of the respondents were frequent flyers whereas 45.2% were not. Above all, complete details of demographic attributes are listed in Table 1.

Table 1: Descriptive Analysis

Attributes	Distribution	Frequency	%
Gender	Female	40	23.8
	Male	127	75.6
	Prefer not to say	1	0.6
Age	30 to 40	81	48.2
	40 to 50	5	3.0
	Above 50	5	3.0
	Between 20 to 30	77	45.8
Qualification	Graduate	38	22.6
	Post graduate	113	67.3
	Undergraduate	17	10.1
Frequent flyer	No	76	45.2
	Yes	92	54.8

Measurement Model Analysis

This study comprises of both formative measurement model and reflective measurement model. Customer Satisfaction and Customer Loyalty have formative measurement models whereas dimensions of service quality have reflective measurement models. According to Hair Jr et al.,(2017), data analysis criteria for both measurement models are different from each other. Internal consistency is not suitable for formative measurement models (Chin, 1998), for it is not necessary that items of formative measurement models are highly correlated with each other and they are likely to represent an independent cause (Hair Jr et al., 2017).

On the contrary, items of reflective measurement models should portray outer loading values significantly and they should be correlated with each other (Hair Jr et al., 2017). For the above reason, both models were evaluated separately. As per the guidelines of Hair Jr et al., (2017) reliability and validity were used to analyze the reflective models in the study and convergent and discriminant validity was used to analyze formative models.

Analysis of Reflective Measurement Models

Separate analytical tests were conducted for the constructs of reflective models (Hair Jr et al., 2017; Henseler, Ringle, & Sinkovics, 2009). Results show that all factors are fairly loaded on their respective constructs ranging between 0.60 and 0.90 which is acceptable, except one factor of Empathy (E2 i.e. 0.479). They were assessed for their reliability and validity. Moreover composite reliability (CR) and Cronbach's alpha values of all construct with reflective models were greater than 0.70 which was a critical level recommended in the study of Cohen, (1988). All constructs had a higher value of average variance extracted (AVE) than the critical value of 0.50 as suggested by Hair Jr et al., (2017). Further Table 2 shows the complete results of validity and reliability of all constructs.

Table 2: Reliability and Validity of Latent Constructs

Latent Constructs	AVE	Composite Reliability	Cronbach's Alpha
Airline Tangibles	0.595	0.898	0.863
Empathy	0.501	0.854	0.796
Image	0.725	0.888	0.812
Personnel Services	0.650	0.928	0.910
Terminal Tangibles	0.527	0.886	0.852

To assess the discriminant validity, Fornell-Larcker criteria is used which is mentioned in Table 3. It is the bold values which are square roots of average variance extraction (AVE) that is higher than correlation values which were estimated. Thus there is the involvement of constructs' discriminant validity as involved in measurement models proposed by M S Farooq & Radovic-Markovic, (2016) and Hair Jr et al., (2017).

To analyze discriminant validity of constructs further, HTMT ratio, a modern tool, of correlation was assessed as was recommended by Henseler, Ringle, & Sarstedt, (2015). All HTMT values for the current study were lower than the threshold value that was 0.85, which was the indication of no discriminant validity involved. Another test to assess discriminant validity that was factor loading was calculated. Indicators mentioned in reflective measurement models should be having higher factor loading on their respective latent construct. As shown in Table 04, most of the items were loaded on their latent variable except one of the factors of Empathy (E) that was E2 which was not having high cross-loading value. E2 was the transportation between the city and the airport. There can be the issue of policy and the practical implication that respondents weigh them low as they experienced it. However, factor loading values provide satisfactory results which reflect the discriminant validity of reflective measurement models of the current study. Now later section discusses the analysis of formative measurement models (Customer Satisfaction and Loyalty).

Table 3: Discriminant Validity (Fornell-Larcker Criterion)

	1	2	3	4	5
Airline Tangibles (AT)	**0.772**				
Empathy (E)	0.602	**0.708**			
Image (I)	0.529	0.700	**0.852**		
Personnel Services (PS)	0.662	0.663	0.515	**0.806**	
Terminal Tangibles (TT)	0.587	0.651	0.415	0.722	**0.726**

Analysis of Formative Measurement Models

Formative measurement models entail different evaluation methods than that of reflective models (Chin, 2010; Hair Jr et al., 2017; Henseler et al., 2009). This is because they show independent cause for their latent variable and do not possess high correlation among their items. Furthermore, convergent validity used to evaluate these models is different from reflective measurement models (Chin, 1998; Hair Jr et al., 2017). Customer Satisfaction and Customer Loyalty are two formative models on which the current study is based on. For the sake of convergent validity, a path coefficient as correlation between the formative constructs was assessed. According to Chin, (1998) and Hair Jr et al., (2017) 0.80 or higher value should be the threshold for correlation between formative and reflective models. Results of this study show that path coefficient values between CS formative and CS reflective, and CL formative and CL reflective are higher than the critical value of 0.80. Therefore it shows that formative models used in this study possess a degree of convergent validity.

Table 4: Factor loadings among reflective measurement scale items.

	Airline Tangibles	Empathy	Image	Personnel services	Terminal Tangibles
AT1	0.728				
AT2	0.697				
AT3	0.736				
AT4	0.863				
AT5	0.841				
AT6	0.751				
E1		0.666			
E2		0.479			
E3		0.683			
E4		0.821			
E5		0.796			
E6		0.746			
I1			0.872		
I2			0.842		
I3			0.840		
PS1				0.685	
PS2				0.769	
PS3				0.793	
PS4				0.828	
PS5				0.843	
PS6				0.824	
PS7				0.886	
TT1					0.760
TT2					0.792
TT3					0.719
TT4					0.706
TT5					0.694
TT6					0.684
TT7					0.722

Moreover, to establish the significance of indicators for the respective latent variable relatively, outer weights of formative items were also calculated and used. Table 5 shows the detailed list of outer weights of formative indicators involved in formative measurement models which are Customer Satisfaction and Customer Loyalty. It is revealed that these outer weight values are positive and significant which prove their relevance and significance as per the guidelines given by Hair Jr et al., (2017) and Henseler, Hubona, & Ray, (2016). Thus it is established that the overall model whether reflective or formative shows acceptable results and hence structural model may be evaluated after this section.

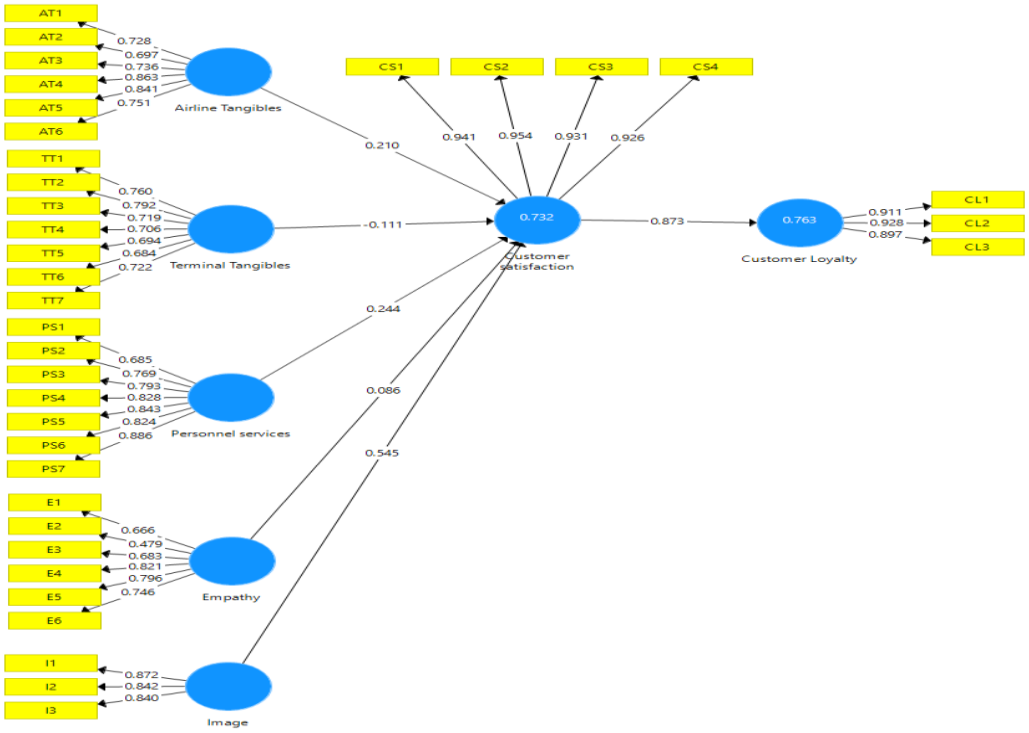

Figure 1. Structural Model

Table 5: Outer weights of formative measurement models

	Outer weights	T Statistics (|O/STDEV|)	P Values
CS1 <- CS	0.268	23.219	0.000
CS2 <- CS	0.266	26.045	0.000
CS3 <- CS	0.263	24.825	0.000
CS4 <- CS	0.269	58.475	0.000
CL1 <- CL	0.388	66.879	0.000
CL2 <- CL	0.361	51.734	0.000
CL3 <- CL	0.347	55.981	0.000

Structural Model Analysis

The structural model was analysed by using R^2 and path coefficient (β- values) so that overall explanatory power can be presented in the study. A structural model with the above values is presented in Figure 1. Results depict that the proposed model has 73% and 76% explanatory power for Customer Satisfaction and Customer Loyalty respectively which is reflected by R^2 values of 73.2 and 76.3 respectively.

Moreover, with the help of such values mentioned above also lead to hypothesis testing. As results show that Airline Tangibles has a positive and significant relationship with Customer Satisfaction (β=0.210; t-value=3.386; p=.001) which shows that H1 is supported as proposed. Surprisingly Terminal Tangibles has a negative and insignificant relationship with Customer Satisfaction (β=-0.111; t-value=1.678; p=.094) shows that H2 is not supported. Personnel Services has a positive and significant relationship with Customer Satisfaction (β=0.244; t-value=3.429; p=.001) shows that H3 is supported as proposed. Empathy showed a positive and insignificant relationship with Customer Satisfaction (β=0.086; t-value=0.943; p=.346) which shows that H4 is not supported. Further results show that Image has a strong positive and significant relationship with Customer Satisfaction (β=0.545; t-value=7.516; p=.000) means H5 is supported. Finally Customer Satisfaction has a strong and direct positive and significant relationship with Customer Loyalty (β=0.873; t-value=44.994; p=.000) which indicates H6 is also supported. Data is also presented in Table 6. Next session contains the discussion of Goodness of Fit evaluation.

Table 6: Hypothesis Testing

Hypothesis		β-Value	t-value	p-values	Decision
H1	Airline Tangibles & Customer Satisfaction	0.210	3.386	0.001	Supported
H2	Terminal Tangibles & Customer Satisfaction	-0.111	1.678	0.094	Not supported
H3	Personnel Services & Customer Satisfaction	0.244	3.429	0.001	Supported
H4	Empathy & Customer Satisfaction	0.086	0.943	0.346	Not supported
H5	Image & Customer Satisfaction	0.545	7.516	0.000	Supported
H6	Customer Satisfaction & Customer Loyalty	0.873	44.994	0.000	Supported

Goodness of Fit (GoF)

The goodness of fit is a diagnostic tool given by Tenenhaus, Vinzi, Chatelin, & Lauro, (2005) which is used to analyze the model fit for PLS-SEM. It is calculated as per the following equation;

$$GoF = \sqrt{(AVE \times R^2)}$$

Here AVE means average community score. As (Tenenhaus et al., 2005) did not mention any cut off values for Goodness of Fit (GoF) index, so the work of Wetzels, Odekerken-Schröder, & Van Oppen, (2009) was utilized here who reported the critical values for GoF index. Index was followed by the values such as GoFsmall = 0.1, GoFmedium = 0.25 and GoFlarge = 0.36. A model which is having a good model fit is named as a plausible and parsimonious model (Henseler et al., 2016). The Goodness of Fit was calculated for the model involved in this study. Results of GoF are presented in Table 7 which shows that GoF is 0.709 which is GoFlarge on the index mentioned earlier. It indicates that study has very good model fit.

Table 7: GoF Calculations

Latent Constructs	AVE	R^2
Airline Tangibles	0.595	
Terminal Tangibles	0.527	
Personnel Services	0.650	
Empathy	0.501	
Airline Image	0.725	
Customer satisfaction	0.880	0.732
Customer Loyalty	0.832	0.763
Average Scores	0.673	0.748
AVE * R^2	0.503	
$GoF=\sqrt{(AVE \times R^2)}$	0.709	

On the bases of comprehensive analysis and structural model analysis it can be concluded that models whether reflective or formative have been validated and also the framework used in this study has explanatory power.

Conclusion, Implications, Limitations and Future Research Directions

The current study aimed to measure the service quality of airlines and its impact on customer satisfaction and loyalty. It used AIRQUAL measurement model given by (Hussain & Ekiz, 2007). All proposed hypothesis were supported except two of them. The study revealed that Airlines Tangibles, Personnel Services and Image have a positive and significance effect on Customer Satisfaction. Customer Satisfaction has a strong positive effect on Customer Loyalty. The study also revealed that Empathy and Terminal Tangibles have an insignificant impact on Customer Satisfaction.

Policy-makers and management of airlines operating from Pakistan to Malaysia and airports have to look into the services of airports regarding their tangibles, and empathy of staff towards customers. They should study

and know the interests of customers and they should focus on personalized and customized services. Further airport authorities should take into consideration of facilities and services provided at airport vicinity. They should improve them.

The current study is not free from limitations. First, it is based on small sample size and narrow demographical context. Therefore increasing sample size can result in robust results. Second, this study cannot be generalized to another context because it is conducted on a small scale due to financial constraints. Third, this study used only five dimensions of AIRQUAL and left other dimensions such as safety, technology acceptance and repurchase intention which may have an impact. Moreover the current study suggests some future directions. Impact of Empathy and Terminal Tangibles should be explored further with respect to satisfaction. All of the respondents were from Pakistan who travelled to Malaysia, so there is a need to study those travellers who are travelling from Pakistan to other destinations to validate the results further. Finally, there is a need for qualitative studies in measuring service quality of airline service to explore new dimensions of service quality.

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