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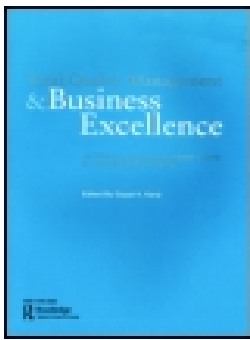UCSI University
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Service quality perception and customer satisfaction in Islamic banks of Pakistan: the modified SERVQUAL model

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The aim of this study is to measure the relationship between service quality and customer satisfaction among the customers of Pakistani Islamic banks. This study employed a modified SERVQUAL model by introducing a unique dimension of compliance in the context of service industry. A self-administered questionnaire-based field survey was conducted with the help of modified SERVQUAL dimensions. Data were gathered from 450 walk-in customers of Islamic bank. The sample data were statistically analysed through exploratory factor analysis followed by confirmatory factor analysis (CFA) and structural equation modelling (SEM) analysis to determine the service quality perception and customer satisfaction. Namely, CFA is used in order to test the model validity, while SEM is used for testing the impact of different service quality dimensions on customer satisfaction. Results revealed that the multidimensional service quality scale is positively and significantly associated with the unidimensional scale of customer satisfaction. In addition, the compliance dimension of the SERVQUAL model proved its importance by showing the highest contributing factor in the overall model. Furthermore, this study has practical implications for the policy-makers of Islamic banks to better understand the behavioural intentions of Islamic bank customers.

Keywords: Pakistan; Islamic banks; service quality; customer satisfaction

1. Introduction

Service quality has gained a considerable amount of interest for researchers and practitioners in the past two decades. The practitioners believe that service quality can increase the performance of a firm (Al-Hawari, 2006; Black, Briggs, & Keogh, 2001; Caruana, Money, & Berthon, 2000; Cheruiyot & Maru, 2013; Haynes & Fryer, 2000; Yoo & Park, 2007). However, practitioners refer service quality and customer satisfaction as interchangeable terms. Past studies relate the concept of service quality and customer satisfaction to each other (Amin & Isa, 2008; Angur, Nataraajan, & Jahera Jr, 1999; Arasli, Katircioglu, & Mehtap-Smadi, 2005; Avkiran, 1994; Awan, Bukhari, & Iqbal, 2011; LeBlanc & Nguyen, 1988). The findings from Raza, Jawaid, and Hassan (2015) study suggests that service quality is positively associated with customer satisfaction in the conventional banking industry of Pakistan. Further, a considerable amount of work has been done in different service industries to better understand the dimensions of service quality and customer satisfaction (Chumpitaz & Paparoidamis, 2004; Lewis, 1991; Pantouvakis, 2013; Zhu et al., 2002).

The service quality model has paid much attention after the revolutionary work of Parasuraman, Zeithaml, and Berry (1985). In their study, results revealed 10 dimensions

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of service quality measurement and proposed a service quality gap model. In 1988, they reduced 10 dimensions of service quality measurement to five dimensions. They established a questionnaire of 22 items and suggest it as SERVQUAL model. Parasuraman, Berry, and Zeithaml (1991), Parasuraman, Zeithaml, and Berry (1994) further stated that the SERVQUAL model has diagnostic characteristics and has some practical implications. Angur et al. (1999) suggest that the SERVQUAL model is multidimensional and can provide more diagnostic information on the banking sector as compared to other service measurement scales such as SERVPERF. This SERVQUAL model has been used by many academic researchers and service industries as well (Awan et al., 2011; Chi Cui, Lewis, & Park, 2003; Lam & Woo, 1997; Lim & Tang, 2000; Raza et al., 2015; Sureshchandar, Rajendran, & Anantharaman, 2003; Wang, Lo, & Hui, 2003; Yavas, Bilgin, & Shemwell, 1997; Zhu et al., 2002). These five dimensions of service quality are as follows:

(1) Reliability (ability to perform services accurately);
(2) Tangibles (physical facilities, staff, equipment, building, appearance etc.);
(3) Responsiveness (willingness to help and respond to customer needs);
(4) Empathy (attention, caring and individual service is given to the customer);
(5) Assurance (staff ability to inspire, confidence, trust and courtesy to bank staff).

Banking environment is significantly affected by technological, structural and regulatory factors throughout the world. Banking has integrated globally by implementing regulatory changes (Angur et al., 1999). Banks can perform a wide range of activities by implementing structural changes to become more competitive in the financial market. In recent times, banks are involved to provide quality services by using technological changes in the environment. These rapid changes allow the banking sector to improve service quality and customer satisfaction (Angur et al., 1999; Arasli et al., 2005; Herington & Weaven, 2007; Metawa & Al-Mossawi, 1998; Newman & Cowling, 1996; Raza et al., 2015).

Previously, many studies have been conducted in the context of service quality and customer satisfaction (Ahmed et al., 2010; Arasli et al., 2005; Caruana et. al., 2000; Newman & Cowling, 1996; Peterson & Wilson, 1992; Rust & Oliver, 1994; Taylor & Baker, 1994; Wang et al., 2003; Woodside, Frey, & Daly, 1989; Yavas et al., 1997; Zhu et al., 2002). These studies suggest that service quality and customer satisfaction are key factors of service industry. Parasuraman et al. (1985) argued that the service quality concept is inconclusive in the context of customer satisfaction. However, most of the studies have linked service quality and customer satisfaction with the banking industry (Avkiran, 1994; Blanchard & Galloway, 1994; LeBlanc & Nguyen, 1988). Wang et al. (2003) and Lewis and Pescetto (1996) support the fact that service quality is an essential factor for success in a banking environment. Awan et al.'s (2011) findings validate the importance of service quality in the banking sector. Results from Ahmed et al.'s (2010) study suggest that Pakistan bank customers have superior service quality perception of Islamic banks.

In Pakistan, the banking sector is improving service quality dimensions with an active participation of local and foreign stakeholders (Awan et al., 2011). This results in competing to increase more customers in the long term by providing better service quality. The Pakistan banking industry consists of 19 conventional and 5 full-fledged Islamic banks where they are involved in a highly competitive environment with continuous improvement of quality service. Ahmed et al. (2010) suggest that the Islamic banks' customers have a greater perception of service quality in Pakistan. Islamic banks have created

awareness to their customers, which results in more customer satisfaction towards Islamic products and services. It is obvious that Islamic banks in Pakistan work with the guidelines of Sharia rules and it also helps to increase customer satisfaction.

Despite the existing literature on service quality, fewer studies have been conducted on service quality and customer satisfaction in the Pakistani banking sector. Up till now, to the best of the authors' knowledge, no such studies have been found relative to service quality dimensions and customer satisfaction specifically in Islamic banks in Pakistan. In the present study, we used a modified form of SERVQUAL model and also added the compliance dimension of Islamic banks as a unique measure to identify the relationship between service quality and customer satisfaction. Islamic banks follow strict Sharia compliance procedures, specifically the prohibition of taking or giving interest and loss sharing by both parties. In this sense, there is need of this study and it is conducted in order to analyse the factors that affect customer satisfaction in Islamic banks of Pakistan. This study aims to identify the relationship between service quality and customer satisfaction in Pakistan by determining different dimensions of service quality in Islamic banks by adapting and modifying the SERVQUAL scale (Othman & Owen, 2001, 2002; Parasuraman, Zeithaml, & Berry, 1988). It is believed that the present study of service quality and customer satisfaction will provide a platform to discuss the service quality issues in Islamic banks of Pakistan.

2.   Conceptual background

2.1.   *Customer satisfaction*

In 1980, Oliver referred customer satisfaction to the complete fulfilment of one's expectations. It is an attitude or feeling that results from having used some product or service. Marketing activities are directly linked to customer satisfaction and sometimes it is associated with consumer buying behaviour. If a customer is satisfied with a service or product after having used it, then the chances are increases in repeat purchase of that service or product (East, 1997). The intentions to repeatedly purchase the product rely heavily on customer satisfaction (Taylor & Baker, 1994). Not only this, the satisfied customer shares his positive experience with others and becomes a source of word-of-mouth advertising. On the other hand, a dissatisfied customer results in negative word-of-mouth advertising and is more likely to switch the brand or product.

2.2.   *Service quality*

Past research findings validate the fact that service quality is a better measurement of customer satisfaction (Anderson & Sullivan, 1993; Cronin Jr & Taylor, 1992; Levesque & McDougall, 1996a; Taylor & Baker, 1994). Most of the empirical investigations have tried to propose a causal relationship between service quality and customer satisfaction. This means that service quality is viewed at the global level (Bitner, 1990; Oliver, 1981; Parasuraman et al., 1988), while customer satisfaction is treated at the experimental level. Bitner (1990) study investigated the linkage between customer satisfaction judgement and service quality of travellers. Evidence suggests that customer satisfaction judgements are antecedents of service quality. In addition, the study further proposed a research dimension for the causal linkage between customer satisfaction and service quality.

The performance of a company in the long run is dependent on the quality of a good product and services. A business can grow by improving its quality, which leads to increase in market share and market expansion as well (Buzzell & Gale, 1987). For a

service business, issues related to the delivery of services and customers' experience are the key factors to improve the quality of services. Past literatures on service quality paid much attention to quality perception and customer satisfaction (Cronin Jr & Taylor, 1992; Taylor & Baker, 1994). Evidences provided in the literature suggest that good service quality increases customer satisfaction and helps attract new customers and also retain existing ones (Keiser, 1993; Lian, 1994a, 1994b). Similarly, the majority of the banks believe that service quality should refer to service excellence in order to gain customer satisfaction (Mahoney, 1994). One study of Madsen (1993) suggested a brief definition of service excellence that firms can exceed customer satisfaction to delight and retain them. He further explains service excellence as listening, and allowing customers to be a part of action, innovation and empowerment.

Previous studies suggest that service quality is not associated with a unidimensional construct. However, most of the researchers support service quality as a multidimensional construct such as tangibles, responsiveness, reliability, empathy and assurance (Amin & Isa, 2008; Bitran & Lojo, 1993; Carman, 1990; Lewis, 1993; Parasuraman et al., 1985, 1988). Generally, service quality has two overriding dimensions (Grönroos, 1984; Levesque & McDougall, 1996b; McDougall & Levesque, 1994; Parasuraman, Berry, & Zeithaml, 1991). The first dimension is referred to as the core aspect of the service (reliability), whereas the second dimension is referred to as process aspects of the service (tangibles, responsiveness, empathy and assurance). More precisely, reliability is mainly associated with the service outcome, while tangibles, responsiveness, empathy and assurance are associated with the deliverance of service (Parasuraman et al., 1991). Supporting these facts, this study suggests that both the aspects are essential and interactive dimensions of service quality and can be antecedents of customer satisfaction.

2.3. *Service quality in banking*

In the banking industry, service quality plays a vital role in improving customer satisfaction. Berry and Thompson (1982) findings suggest that strong relationships between banks and customers build customer loyalty, which gives competitive advantage to the banks. Similarly, Teas (1993) investigation explained the long-term relationship between bank and customer satisfaction. Many of the studies have provided a basis for financial institutions to improve customer satisfaction (Boaden & Dale, 1994; Howcroft, 1993; Kwan & Hee, 1994; Laroche & Taylor, 1988; Smith & Lewis, 1988, 1989; Tilston, 1989; Wilkinson, Allen, & Snape, 1991).

2.4. *Compliance dimension of service quality in Islamic banks*

Islamic banks follow strict Sharia compliance procedures, specifically the prohibition of taking or giving interest. It is due to the fact that deciding interest before any economic activity is not fair. In Islamic banks, the idea of profit is based on the profit and loss sharing after the completion of business transactions. A bank may have a chance of losing money if a particular business is unsuccessful to yield a profit. Thus, it assumes it to be unfair if an entrepreneur faces loss and the bank gains profit, or vice versa. In addition, Islamic banks are restricted to invest customers' money in the businesses that are unlawful under Sharia principles, such as alcohol business, gambling, pork business and so forth (Siddiqui, 1992).

In this study, compliance dimension is used by keeping in view of Muslim beliefs. It is clearly mentioned in the *Quran* (the Holy book) that giving or taking interest is *haram*

(prohibited) and considered as a major sin. In light of this argument, Islamic banks are liable to provide Islamic products and services that are in line with Sharia rules in order to protect Muslims from interest. Therefore, the most common Islamic products are

- Ijarah (leasing)
- Mudarbah (profit sharing)
- Wadiah (safe keeping)
- Murabaha (cost plus)
- Musharkah (joint venture).

According to the Banking Act 1983, Islamic financial institutions and Islamic banks are liable to establish a Sharia Advisory Board, which is responsible to advise Islamic banks about Islamic products and services and also to ensure that the operational activities of Islamic banks comply with Sharia rules. In this regard, after the relaunching of Islamic banking in Pakistan, State bank of Pakistan established an Islamic banking department on 15 September 2003 to promote Islamic banking services in Pakistan. The department comprises Sharia division, Policy division, Promotion and development division and Market analysis and Research division that ensure Islamic principles. These departments are working hard in adopting prudential standards of Islamic Financial Service Board along with Accounting and Auditing Organization for Islamic Financial Institutions accounting standards.

2.4.1. *Review of past literature*

The extensive work of Parasuraman et al. (1985, 1988, 1991, 1994) added literature to the service quality and proposed SERVQUAL instrument which is further used by many researchers (Arasli et al., 2005). This instrument is extended to a 22-item scale and many researchers have used this instrument to study service quality in different research context (Avkiran, 1994; Babakus & Boller, 1992; Buttle, 1996; Fick & Ritchie, 1991; Newman, 2001; Smith, 1995).

Initially, it was understood that customer satisfaction can result from any quality or non-quality dimension (Awan et al., 2011). Howard and Sheth (1969) argued that customer satisfaction requires experience of the service provider. This fact is further validated by Taylor and Baker (1994). Additionally, researcher added to the literature a concept of 'service quality' through which customer satisfaction can predict well. Past researchers argued that the service quality concept is inconclusive whether service quality is an antecedent of customer satisfaction or vice versa (Anderson & Sullivan, 1993; Bitner, 1990; Cronin Jr & Taylor, 1992; Parasuraman et al., 1985).

Avkiran (1994) measured service quality in the Australian commercial banking sector. This study found four factor scales in 17 items. Newman and Cowling (1996) measured service quality by comparing two British clearing retail banks. The findings concluded that banks' strategic interest in service quality is due to the connection between productivity, quality and profitability as well as cost reduction in the retail banking sector. Caruana et al. (2000) investigated the relationship between service quality and the mediating role of customer satisfaction in retail banking by structural equation modelling (SEM) and regression analysis. Results suggest that customer satisfaction has a mediating role among service, loyalty and service quality. Zhu et al. (2002) investigated the linkage between service quality and information technology (IT) in the consumer banking sector. They suggest that SERVQUAL dimensions are directly associated with IT-based

services, while an indirect association is found between IT-based services and customer satisfaction and their perceived service quality. Lewis (1991) examined the overall satisfaction of students, while Goode and Moutinho (1995) evaluated student and normal bank customer satisfaction related to free banking (ATM services).

It has been reported that SERVQUAL in the banking industry of developing countries is given full attention. Yavas et al.'s (1997) study finds out the relationship between customer satisfaction and service quality in the Turkish banking industry. Evidence presented in their study suggests that service quality is positively associated with the bank personal. Angur et al. (1999) argued that the SERVQUAL instrument plays a vital role in determining service deficiencies than any other service measurement scale. Their investigation was conducted in the banking sector of India. One study of Wang et al. (2003) investigated the product quality and service quality antecedents on Chinese bank reputation. They concluded that both antecedents have a significant impact on Chinese bank reputation. Arasli et al. (2005) conducted another study on service quality in the banking system of small economy countries. They found that bank customers' expectations were not met and word of mouth has positive linkage with overall and customer satisfaction. Awan et al. (2011) analysed SERVQUAL and customer satisfaction in the banking sector of Pakistan. The findings of the study suggest that the relationship between customer satisfaction and service quality validates the importance of service quality aspect in the Pakistan banking sector.

More precisely, in Islamic banking, Othman and Owen's (2001, 2002) study investigated service quality by using SERVQUAL dimensions. Their study proposed an insight view on how to improve service and developed a model, called CARTER. Findings suggest that CARTER model is a multidimensional variable containing six different dimensions in which Islamic bank's customers emphasise on compliance dimension. In addition, Haron, Ahmad, and Planisek's (1994) findings revealed that 40% of Malaysian Muslim customers select Islamic banks due to the compliance factor. Gerrard and Barton Cunningham's (1997) findings reported that Singaporean Muslim customers are profit-oriented while selecting Islamic bank products and services, while these Muslim customers are better aware of Islamic banks compared to non-Muslims. In addition, Erol and El-Bdour (1989) investigated behaviour, attitude and Patronage factors of Jordan's Islamic bank customers. Evidence of the study suggested that the religious factor plays an insignificant role in selecting Islamic banks.

Other than the banking sector, SERVQUAL model has been used widely in other service sectors such as airport services, educational services, travel and tourism services and hospital services (Buttle, 1996; Fick & Ritchie, 1991; Lam & Woo, 1997; Lim & Tang, 2000; Oldfield & Baron, 2000).

Previously, many studies have been conducted on SERVQUAL dimensions, but past researchers suggested some criticism about this model. This criticism widely focused on the implementation and interpretation of the SERVQUAL instrument (Babakus & Boller, 1992; Buttle, 1996; Newman, 2001; Smith, 1995). Researchers pointed out the problem with dimensions of SERVQUAL instrument. These researchers have identified SERVQUAL dimensions for perceptions, expectations and gap scores. Due to this fact, the five dimensions of SERVQUAL are inconclusive (Buttle, 1996; Carman, 1990). On the other hand, many studies have adopted this model to enhance the literature on SERVQUAL dimensions and provide support to organisations in specific research need (Parasuraman et al., 1988). Despite criticisms, service quality can be better measured through the SERVQUAL model (Buttle, 1996).

In recent times, past studies have mainly focused on customer satisfaction using several different contexts. For instance, Raza et al. (2015) investigated customer

satisfaction and service quality dimensions in the Internet banking sector of Pakistan. The findings of the study suggest that customer satisfaction can be better predicted through service quality dimensions. In addition, banks should provide reliable services to attain more customer satisfaction. One study of Raza and Hanif (2013) draws our attention towards internal and external customer satisfaction for using Internet banking. Interestingly, their investigation provides evidence of the determinants of both internal and external customer satisfaction. This study also highlighted an importance of customer satisfaction in the banking sector. On the same vein, Zavareh et al. (2012) identified e-customer satisfaction using e-service quality dimensions in Internet banking services. The study suggests that the reinterpretation and reorganisation of service quality dimension are required while measuring e-service quality, specifically for the Internet banking industry. Furthermore, their findings also support the fact that service quality has a positive effect on customer satisfaction. On the other hand, Shanka (2012) highlighted customer satisfaction, service quality and customer loyalty relationship in the Ethiopian banking industry. This study argued that overall customer satisfaction has a positive and significant relationship with service quality. In addition, providing high service quality increases customer satisfaction, which further increases customer loyalty with the bank. More precisely, the scale of service quality in determining customer satisfaction seems to be limited in measuring Islamic bank customer satisfaction. In addition, customer satisfaction and service quality literature is lacking in recent investigations.

2.5. *Research hypotheses*

Based on past empirical findings, the research hypotheses of the present study are as follows:

H1: Compliance dimension of service quality will have a positive impact on customer satisfaction.

H2: Assurance dimension of service quality will have a positive impact on customer satisfaction.

H3: Reliability dimension of service quality will have a positive impact on customer satisfaction.

H4: Tangible dimension of service quality will have a positive impact on customer satisfaction.

H5: Empathy dimension of service quality will have a positive impact on customer satisfaction.

H6: Responsiveness dimension of service quality will have a positive impact on customer satisfaction.

3. Methodology

Figure 1 shows the conceptual model of our study. The SERVQUAL measurement model comprises six dimensions such as compliance, assurance, reliability, tangibles, empathy and responsiveness. These dimensions are used to measure service quality in Islamic banks of Pakistan. In addition, based on the past literature, Figure 1 further illustrates the relationship between service quality and customer satisfaction.

3.1. *Measurement instrument*

The SERVQUAL five dimensions are suggested by Parasuraman (1998), Jabnoun and Hassan Al-Tamimi (2003) and Othman and Owen (2001, 2002), which are further modified
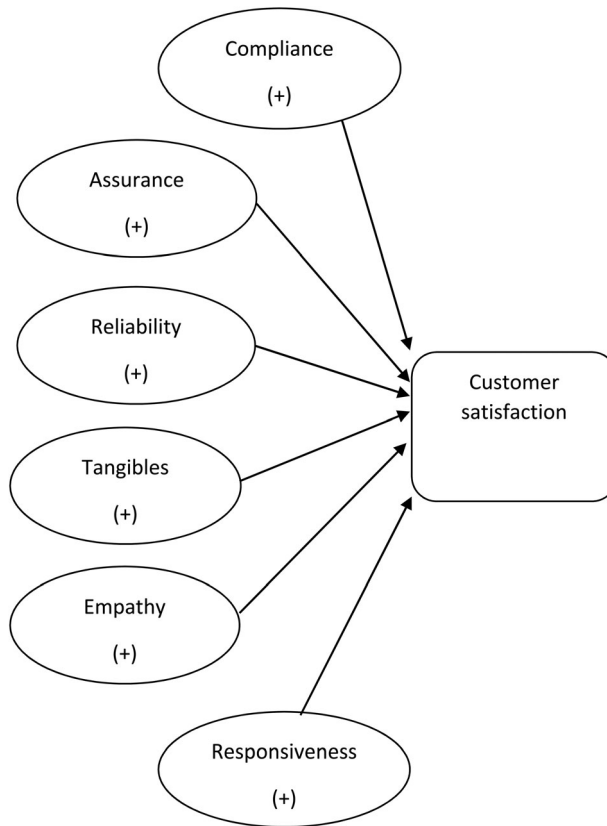
Figure 1. Modelling framework. Source: Authors' construction.

and adapted by this study. Questionnaire items were modified and substituted carefully in the service industry, specifically Islamic banks of Pakistan. All items in the instrument were translated into English, whereas their content validity was confirmed by an academic and market expert. A pilot study was also conducted and the questionnaire was distributed to academic and market professionals who have an Islamic bank account. It is therefore confirmed that all items are relevant and it is convenient to understand the instrument.

A 5-point Likert scale ranging from (1) 'strongly disagree', (2) 'disagree', (3) 'neutral', (4) 'agree' and (5) 'strongly agree' was used to measure the perception of service quality in Islamic banks. In addition to service quality for Islamic banks, Jabnoun and Hassan Al-Tamimi (2003) and Othman and Owen (2001) studies were used to adapt the appropriate items and incorporated into our research. Furthermore, items for customer satisfaction in Islamic banks were identified from past literatures (Fornell, Johnson, Anderson, Cha, & Bryant, 1996; Levesque & McDougall, 1996b). These items reflect the level of customer satisfaction with Islamic bank products and services. Lastly, demographic information is also collected from the respondents of our study.

Sample data are used and data collection is done via survey method. This study aims to target those customers who have at least an Islamic bank account. Data collection is based on a 5-point Likert scaling questionnaire which was adopted in the previous literature. The present study was conducted in January – March 2015, and a non-probability sampling technique (convenience sampling) was applied. According to Bank and Financial

Institution Act 1989, financial institutions are responsible for non-disclosure of customers' information (Ramayah, Leen, & Siron, 2003, Ramayah, Md-Taib, & Ling, 2006). Therefore, this method is preferable for data collection due to the above restriction. To determine the sample size of our study, we have used the guidelines provided by Comrey and Lee (1992), suggest that, a sample of 50 as poor, 300 as good, 500 as very good and 1000 as excellent for factor analysis. In this study, we have used these guidelines and a sample of total 477 respondents who are Islamic bank customers based in Karachi, Pakistan. The total number of items is 25, which satisfies the minimum requirement of items in a questionnaire suggested by Hair, Black, Babin, Anderson, and Tatham (2006). Out of 477 responses, only 450 responses were used in the analysis, whereas 27 were ignored due to incomplete responses, missing data or lack of participation by respondents. During the data collection time, all respondents were requested politely to participate in the study on voluntary basis, and informed that their information will be kept confidential. In addition, the questionnaire is based on service quality dimensions (independent variables) such as compliance, assurance, reliability, tangibles, empathy and responsiveness, whereas customer satisfaction (dependent variable) is tested with these service quality dimensions.

The basic regression model service quality dimensions and customer satisfaction are written as follows:

$$y_n = \alpha + \beta x_n + \varepsilon_n, \tag{1}$$

where y denotes a dependent variable (customer satisfaction) and α denotes the intercept term. x represents explanatory variables (compliance, assurance, reliability, tangibles, empathy and responsiveness), while β represents the regression coefficient. The basic functional form of the study model is as follows:

$$\text{Customer satisfaction} = f \text{ (compliance, assurance, reliability, tangibles,} \\ \text{empathy and responsiveness).} \tag{2}$$

From the above discussion, the following regression model is used in this study:

$$\text{CS}_n = \alpha + \beta_1\text{COM}_n + \beta_2\text{ASR}_n + \beta_3\text{REL}_n + \beta_3\text{TAN}_n + \beta_3\text{EMP}_n + \beta_3\text{RES}_n \\ + \varepsilon_n, \tag{3}$$

where CS represents customer satisfaction, COM denotes compliance, ASR represents assurance, REL is reliability, TAN shows tangibles, EMP reflects empathy and RES denotes responsiveness, while ε is the error term. The conceptual model of this study is presented in Figure 1.

4. Estimations and results

The respondents' profile in our study is presented in Table 1. This table provides the overall description of sampled respondents. In this table, 73% of the respondents were male and 27% of the respondents were female. The majority of the respondents were married, that is, 63%, whereas 37% participated in our study as single. During the data collection time, most of the respondents were between 31 and 40 years of age (42%), followed by 41–50 (27%), 20–30 (20%), less than 20 (6%) and 50 and above (5%).

Table 2 presents the test of correlation between all independent variables. Multicollinearity issue in our model is tested by using correlation matrix. Therefore, the

Table 1.   Profile of respondents.

Demographic items	Frequency	Percentile (%)
Gender		
Male	329	73
Female	121	27
Marital status		
Single	168	37
Married	282	63
Age		
Less than 20	26	6
20–30	92	20
31–40	189	42
41–50	121	27
50 and above	22	5

Source: Authors' estimation.

Table 2.   Correlations between independent variables.

Independent variables	COM	ASR	RES	TAN	EMP	REL
COM	1.00					
ASR	0.32	1.00				
RES	0.07	0.08	1.00			
TAN	0.25	0.38	0.15	1.00		
EMP	0.32	0.43	0.05	0.25	1.00	
REL	0.35	0.44	0.07	0.32	0.55	1.00

Source: Authors' estimation.

model suffers multi-collinearity problem only if the variables are correlated at equal to or greater than 0.80. Our results from the correlation matrix indicate that no multi-collinearity exists in our model due to a weak correlation between the all independent variables.

4.1.   *Reliability analysis*

Table 3 presents the test for reliability and Cronbachs' α value. Reliability test is essential for data validation (Nunnally, 1978), whereas it highlights the consistency between the two measures. Alpha value is considerable for Likert-type scale data for composite

Table 3.   Results of reliability analysis.

Variables	Items	Cronbach's alpha
Compliance	4	0.64
Assurance	3	0.60
Responsiveness	4	0.77
Tangibles	3	0.64
Empathy	6	0.84
Reliability	5	0.75
Customer satisfaction	4	0.67
Overall	29	0.87

Source: Authors' estimation.

scores (Raza et al., 2015). Further, our estimations indicate that for all items Cronbachs' α values ranging from 0.60 to 0.84 support the minimum criteria of 0.60 (Hair, Anderson, Tatham, & Black, 1998).

4.2. *Kaiser–Meyer–Olkin and Bartlett's tests of sampling adequacy*

In Table 4, Kaiser–Meyer–Olkin (KMO) and Bartlett's tests have been performed to check the sampling adequacy of our research. The value of KMO for all items is 0.847, that is, 84.70%, indicating that our sampling adequacy is satisfactory compared with 0.5, that is, 50% of benchmark (Leech, Barrett, & Morgan, 2005, p. 82). Bartlett's test of sphericity confirms the significant differences in the properties of the correlation matrix and identity matrix. If the probability value of this test is less than 0.05, then it shows the significant difference in the properties of the correlation matrix and identity matrix, which is desirable (Leech et al., 2005, p. 82). In our findings, the value of Bartlett's test of sphericity shows significance at the 1% level, which implies that our sample data are appropriate for factor analysis (Bartletts, 1954).

4.3. *Total variance explained*

For the explanation of variance partition among the potential variables, total variance explained is used. The usefulness of a factor can be determined by the general criteria of Eigenvalues, which must be greater than 1.0 for all factors. The measure of variance explained is usually determined by Eigenvalues. Our analysis show that the Eigenvalue is greater than 1.0 which confirms the usefulness our factors. Thus, Table 5 presents the results of total variance explained. In this table, the cumulative variance explained by all seven factors is 70%, which is very good and considerable.

4.4. *Factor analysis*

To validate the construct of dependent and independent variables, factor analysis is used which has the characteristics to minimise large set of information into small factors. In this study, we have used the Principal component method with Varimax rotation. Tabachnick

Table 4. Results of KMO and Bartlett's tests.

KMO measure of sampling adequacy	0.847
Bartlett's test of sphericity approx. chi-square	3522.707
Degree of freedom	300
Probability	.000

Source: Authors' estimation.

Table 5. Results of variance explained.

Items	COM	ASR	RES	TAN	EMP	REL	CS
Variance explained by each factor in percentage	20	13	11	10	8	7	7
Cumulative variance explained in percentage	20	33	44	54	62	69	76

Source: Authors' estimation.
Note: Extraction method: principal components analysis.

and Fidell's (1996) study suggests that factor analysis can be useful to examine a theory of the underlying process of nature. In addition, several methods can be applied for a rotation such as Quartimax, Oblimin and Varimax. Thus, we have used a Varimax rotation, which is widely used by previous researchers (Ali & Raza, 2015; Ali, Raza, & Chin-Hong, 2015; Amin, 2012; Raza & Hanif, 2013; Raza et al., 2015). A total of 29 questionnaire items related to SERVQUAL and customer satisfaction in seven groups of items have been categorised. In addition, factor loadings in our case for all items are greater than 0.50, which is practically significant and is considerable for analysis (Kaiser, 1974). The results of factor analysis are reported in Table 6.

4.5. *Structural equation modelling*

The most direct application of SEM is a confirmatory modelling strategy. The SEM approach is used to assess how well the model fits the data set. If the proposed model has an acceptable fit to whatever criteria are applied, the researcher has not proved the proposed model, but only confirmed that it is one of several possible acceptable models (Hair et al., 2006).

Table 6   Results of principal components analysis.

Items	Compliance	Assurance	Responsiveness	Tangibles	Empathy	Reliability	Customer satisfaction
COM1	0.598						
COM2	0.627						
COM3	0.740						
COM4	0.688						
ASR1		0.528					
ASR2		0.702					
ASR3		0.631					
RES1			0.767				
RES2			0.745				
RES3			0.755				
RES4			0.811				
TAN1				0.793			
TAN2				0.753			
TAN3				0.505			
EMP1					0.706		
EMP2					0.656		
EMP3					0.720		
EMP4					0.759		
EMP5					0.765		
EMP6					0.644		
REL1						0.701	
REL2						0.716	
REL3						0.728	
REL4						0.550	
REL5						0.500	
CS1							0.719
CS2							0.769
CS3							0.738
CS4							0.613

Source: Authors' estimation.

We apply a confirmatory factor analysis (CFA) model to examine the measurement model by using Stata 12. The purpose of a measurement model is to describe how well the observed indicators serve as a measurement instrument for the latent variables. The estimates of standard factor loadings were used to determine the validity of the SERVQUAL dimensions. The factor loadings in the CFA ranged from 0.54 to 0.83 for the SERVQUAL dimensions. Because each factor loading on each dimension is more than 0.50, the convergent validity for each dimension of the SERVQUAL scale was established and provided evidence of construct validity (Hair et al., 1998).

A structural model of Islamic banking service quality was conducted to estimate the parameters. In this model, there were six independent variables (tangible, reliability, responsiveness, assurance, empathy and compliance), and one dependent variable (customer satisfaction). The dimension of tangible was measured by three indicators, reliability by five indicators, responsiveness by four indicators, assurance by three indicators, empathy by six indicators and compliance by four indicators. The objective of conducting the structure model was to test that Islamic banking service quality is a multidimensional construct consisting of six sub-dimensional and each dimension has a positive relationship with Islamic banking service quality. The results of goodness-of-fit statistics are reported in Table 7. Results indicate that our model is statistically good fit and the RMSEA, PCLOSE, CFI and TLI values meet their threshold level. The results show that 29 indicators of the CFA model of Islamic banking service quality were fit to the sample data.

Table 8 reports the results of standardised parameter estimates and significant values for the hypothesised relationships. The findings suggest that all dimensions of service quality have a positive and significant impact on customer satisfaction in Islamic banks of Pakistan. Past empirical findings also suggest that service quality has a significant impact on customer satisfaction. Our findings are in line with past studies (Amin & Isa, 2008; Anderson & Sullivan, 1993; Arasli et al., 2005; Arasli, Mehtap-Smadi, & Katircioglu, 2005; Awan et al., 2011; Cronin Jr & Taylor, 1992; Haron et al., 1994; Levesque & McDougall, 1996b; Othman & Owen, 2001, 2002; Parasuraman et al., 1988; Raza et al., 2015; Taylor & Baker, 1994). The coefficient value of compliance dimension is the highest (0.411) among the all the dimensions of service quality, which supports Haron et al.'s (1994) findings as well. This means that in Pakistan, Islamic bank customers' satisfaction is linked to the perception that Islamic bank products and services are running within the Sharia principles. One explanation of compliance dimension could be that respondents of this study may have believed and have faith in Islamic banks' consistency with the Sharia rules and the operations of Islamic banks. For Pakistani Islamic banks, compliance dimension is the key driver of service quality followed by tangibles (0.389), responsiveness (0.367), assurance (0.367), reliability (0.133) and empathy (0.019), as reported in Table 8.

Overall, our findings confirm that all the hypotheses, that is, *H1−H6*, of our study are accepted. Hence, the six dimensions of the SERVQUAL model have a positive and significant impact on customer satisfaction. The results of hypothesis testing are reported in Table 8.

Table 7. Model fit statistics.

Goodness-of-fit measures	CFI	TLI	RMSEA	PCLOSE
Threshold values	≥0.95	Close to 1	≤0.05	>0.05
Measurement model	0.907	0.915	0.04	0.370
Structural model	0.975	0.989	0.001	0.991

Note: Measurement model = 29 items; Structural model = 29 items.

Table 8.   Standardised regression weights for the research model

Hypothesis	Variables	Regression path	SRW	*p*-Value
H1	Compliance	COM → CS	0.411	.000***
H2	Assurance	ASS → CS	0.367	.000***
H3	Reliability	REL → CS	0.133	.000***
H4	Tangibles	TAN → CS	0.389	.000***
H5	Empathy	EMP → CS	0.019	.022**
H6	Responsiveness	RES → CS	0.367	.000***

Notes: SRW = Standardised regression weights. Dependent variable = customer satisfaction (CS).
**$p < .05$.
***$p < .001$.

5.   Conclusion and discussion

The aim of this study is to examine the relationship between service quality and customer satisfaction in the context of Pakistani Islamic banks. This study has also aimed to measure service quality and customer satisfaction by using the modified SERVQUAL model and adding compliance dimension in the basic model. A survey questionnaire has been adopted and modified carefully, which comprises a total of 29 items. In this study, we have used a sample of total 477 respondents who are Islamic bank customers based in Karachi, Pakistan. After the data collection process, we have applied various statistical tests in order to examine the relationship between service quality and customer satisfaction in Islamic banks of Pakistan. The results of this study confirmed that all six dimensions (compliance, assurance, responsiveness, tangible, empathy and reliability) of service quality are distinct constructs. These dimensions have a positive and significant impact on customer satisfaction in Islamic banks of Pakistan. The findings indicate that service quality with the six dimensions of our study has suitable reliability, whereas each dimension is positive and significantly associated with Islamic bank service quality. In general, our estimations highlight that Pakistani Islamic bank customers are more satisfied with the compliance dimension. They believe that Islamic banks in Pakistan are consistent with the Sharia principles and the operations and mechanism are running under Sharia compliance.

5.1.   *Recommendations and policy implications*

Based on our findings, it is recommended that Islamic banks should provide more products and services to attract more customers and the Sharia advisory board need to supervise and assist the compliance aspects. By keeping in view of other dimensions of service quality, Islamic banks may require to focus on strategic choice and provide innovative products to gain competitive advantage. Nowadays, potential target market for Islamic banks is available where they have no choice other than to develop, attract and retain customer satisfaction. In addition, the present study also pointed out the service quality perception and customer satisfaction, particularly in Islamic banks of Pakistan. In fact, this study makes a unique contribution to the Islamic banking industry of Pakistan and laid a foundation towards a SERVQUAL model by introducing the compliance factor. However, customers of Islamic banks in Pakistan were found to be more satisfied and support the service quality level of Islamic banks. But, our newly introduced variable attracts our attention mainly and recommends Islamic bank managers to consider a compliance element in providing service quality. Islamic banks should promote the compliance dimension of the SERVQUAL model and apply strategic decisions to gain a greater market share.

Currently, Islamic banks in Pakistan realised about the potential market of Islamic bank customers. Therefore, availability of highly competitive products and services with Sharia compliance may be considered as a differentiation strategy to enhance customer satisfaction level.

Since the employee–customer relationship is considered as highly interactive in nature, the banking sector of Pakistan should ensure service excellence by conducting a training programme for its employees. This employee skill and service culture programme may assure the highest level of customer satisfaction, specifically with regard to front-line officers. In addition, the training programme should also focus on employee's interpersonal communication skills and customer care so that they understand the need of personalised services. This will help Islamic banks to treat their customers in a professional and desired manner. Service failure will be promptly recognised and recovered. Hence, delivery of the promised service will be fulfilled, which in turn will result in greater customer retention and satisfaction in the Islamic banks of Pakistan. Islamic banks in Pakistan must also reassess what level of service quality is expected by their customers in terms of products and services. Overall, the SERVQUAL dimensions in our study model are positive and significant, which implies that the Islamic bank managers and policy-makers should apply the diagnostic information of this study in order to detect the gaps in the service quality of Islamic banks.

5.2. *Limitations and future research of the study*

The main limitation of this study is related to sample which is only collected from the biggest city in Pakistan, that is, Karachi. Another limitation is the potential of existence of inaccurate data collection as the questionnaires were distributed through the branch managers in the banking working hours. During working hours, most of the clients are in the rush because of their other work assignments and there are the chances of inaccurate filling of the questionnaires. For further research, future researchers need to increase the number of banks involved in the research study and the number of respondents, and the research should represent whole Pakistan by taking the sample from different major cities, instead of only from the big city, Karachi. Future researchers may also conduct their research to investigate the impact of the SERVQUAL model on the specific Islamic banking products, for instance, Musharakah financing, Mudarabah financing, Personal financing and Ijarah financing.

5.3. *Contribution of the study*

This study contributes to the literature on service quality and customer satisfaction. Prior empirical studies have been conducted in other services industries such as hospital, higher education, consumer goods, and travel and tourism sectors in Pakistan. Few studies in conventional banks have been conducted, but specifically Islamic banks were inconclusive. Therefore, this research contributes to the existing body of knowledge by providing substantial knowledge over service quality and customer satisfaction in Islamic banks of Pakistan. In addition, a comprehensive measurement scale is developed, including SERVQUAL dimensions, in order to measure service quality and customer satisfaction.

Disclosure statement

No potential conflict of interest was reported by the authors.

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