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ES-QUAL model and customer satisfaction in online banking: evidence from multivariate analysis techniques

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Keywords: *ES-QUAL model; customer satisfaction; financial performance; Internet banking; Normal theory method; bootstrapping method; Structural Equation Modeling, SEM*

Abstract

Research background: The commercial banks are adopting online services for their transactions to stay competitive and fulfill the customers' needs. There is a dire need to satisfy online customers in a competitive environment. Thus, this paper employed the ES-QUAL model and two medi-

ating variables and outlined the recommendations to the management of the online banking industry to develop effective strategies.

Purpose of the article: The undertaken research aimed to examine the electronic banking service quality and customer satisfaction. For this purpose, we employed the ES-QUAL model and examined the direct impact of ES-QUAL dimensions and customer's satisfaction. The secondary task of this paper is to investigate the mediation effect of customer's trust and the perceived value in an association between the ES-QUAL model and customer satisfaction. Finally, we examine and check whether customer satisfaction translates into the business performance of commercial banks or not.

Methods: To achieve the overall goal of this research, SEM-based multivariate approach has been used, including confirmatory factor analysis, exploratory factor analysis, and multiple approaches (normal theory, and bootstrapping) to examine the moderation between the exogenous and endogenous variables. For the validation of hypotheses and results, a financial analysis has been performed simultaneously with the primary analysis. The research is done for a sample of 910 respondents of the account holders of five top commercial banks of Pakistan.

Findings & Value added: The outcomes of the direct investigation revealed an affirmative, and potent impact of ES-QUAL dimensions on customer's satisfaction. The outcomes of the indirect relationship exhibited that the perceived value and trust mediate ES-QUAL dimensions and customer satisfaction. The secondary data of selected five commercial banks and ratios analysis validated the results of the ES-QUAL model, and it is concluded that the results are linear with the outcomes of customers' satisfaction of primary analysis.

Introduction

The existing literature emphasized the significance and the vital role of service quality in different services sectors for the last two decades (Parasuraman & Zeithaml, 2002; Fisk *et al.*, 1993, pp. 61–103). Conventionally, the multifaceted construct tool, the SERVQUAL model, and modified forms of this model have been employed to examine the customers' satisfaction and perceived quality. According to Devaraj *et al.* (2002, pp. 316–333), the dimensions of the SERVQUAL instrument have been useful tools to gauge customer satisfaction for the services industries. The interactive digital media has increased the utility of the SERVQUAL model because now people move increasingly towards online shopping. Therefore, the modification in SERVQUAL dimensions will inevitably examine the electronic service quality (e-SQ) in virtual markets. As identified by Parasuraman *et al.* (2005), customers have assessed online or electronic service quality (e-SQ) and its effectiveness and concerns more directly. Thus, they have developed a new multiple-item instrument to examine the electronic service (e-SQ) in real-time transactions mode. The fundamental SERVQUAL instrument contains five conventional measurements, for instance, empathy, assurance, responsiveness, tangibility, and reliability, which consist of 22 items. Parasuraman *et al.* (2005, pp. 231–233) have derived two modified measuring scales for capturing the E-SQ and customer satisfaction from the traditional SERVQUAL model, which comprises of 22 items

with 4 dimensions, for instance, system availability, fulfilment, privacy, and efficiency. The basic E-SQ model examines the different online service aspects; such as efficiency assess the ease and speed of the online system utility. Fulfilment examines the implementation of website promises. However, the system availability is relevant to measuring the technicality and correctness of the websites, and finally, privacy taking care of the customers' information. As the Internet has become an essential and powerful tool for merchandising goods and services; therefore, there is an increasing trend in organizations to utilize this medium as a virtual market. According to Rodgers *et al.* (2005, pp. 313–331) and Vinayek and Jindal (2011, pp. 63–31), besides the system quality and information, the service quality has been a vital component for measuring the information system's success and an essential element of customer satisfaction in online shopping arena.

The Pakistani banking sector is successfully competing for the worlds' developed banking systems and has implemented innovative approaches in online banking operations to satisfy its customers. According to Ahmed *et al.* (2017, pp. 974–1004) and Malhotra and Singh (2004, pp. 890–896), Pakistani and Indian banks have adopted modern online services and transformed from a conventional slab to click and portico systems of banking. The online banking channel is an efficient, effective, and efficacious channel that reduces cost, intensifying geographic reach, revenue growth, and effectively serving customers, thus, snowballing share of the market (Gardener *et al.*, 1999, pp. 83–100; Polatoglu & Ekin, 2001, pp. 156–165). Hence, without implementing the comprehensive system of online banking, it is impossible to compete in today's competitive environment. It is essential to provide the utmost quality via online banking services to generate an opinion of excellence in customers' minds. Undoubtedly, excellent online services lead to customer satisfaction, retention, and a satisfied customer might be a good source of positive word of mouth for the organizational image and augmented customers (Parasuraman *et al.*, 1988, pp. 12–40; Cronin & Taylor, 1992, pp. 55–68; Caruana, 2002, pp. 811–828). A substantial amount of literature also confirmed that this phenomenon is vital for all kinds of online services provided via the Internet (Santos, 2003, pp. 233–246; Vinayek & Jindal, 2011, pp. 180–184; Shankar *et al.*, 2003, pp. 153–175; Mahajan *et al.*, 2002, pp. 474–486). Therefore, in a competitive environment, it is essential to validate and evaluate the service quality regularly and intensify its online services while providing online banking services to customers. Thus, keeping to this perspective, the current study examines how banking customers are evaluating the online banking service quality in an online atmosphere, and what their antecedents of satisfaction are. Thus, the undertaken research may offer a better understanding of the

customers' perceived values while they are using online banking products, based on findings and recommendations. The banking industry can further refine itself to compete with other banks in Pakistan.

Particularly in the banking industry, the consumers' loyalty is paramount while measuring customers' online satisfaction (Methlie & Nysveen, 1999, pp. 375–386; Leverin & Liljander, 2006, pp. 232–251; Ribbink *et al.*, 2004, pp. 446–456; Vinayek & Jindal, 2011, pp. 63–71). Ribbink *et al.* (2004, 446–456) demonstrated that it is further challenging to keep consumers motivated and satisfied while doing transactions online. Therefore, customer satisfaction becomes more difficult and imperative to retain and loyal online customers. According to Methlie and Nysveen (1999, pp. 375–386), it is even more severe if the competitor snatches your customer, but it is tough to take away the satisfied customer. The prime objective of the bank is to know how the customer could be satisfied and how the online banking sector can play an essential role in customer satisfaction. However, there are immense advantages like exponential productivity and cost-effectiveness in online banking, yet the challenges are also multidimensional because of the easy switching of customers. According to Santos (2003, pp. 233–246), as the switching cost is minimal at the online medium because the customer has multiple options to compare the services and offerings of different banks, thus it makes the customer changes its service provider at a lower cost. The banks should provide augmented products and the best electronic services quality (e-SQ) to retain their customer in the long run. Electronic service quality needs high acquaintance of online dimensions of service quality; therefore, the ES-QUAL measurements have become very crucial to gain a competitive edge over rival banks. The current literature is still debating on the dimensions of online service quality and customer satisfaction. Khalifa and Liu (2002, pp. 31–50) have demonstrated that electronic service quality (e-SQ) has a powerful and positive impact on customers' satisfaction in different service industries. In the case of the banking sector, it is pertinent to understand how the customer should be motivated and satisfied in an online environment, particularly concerning electronic service quality (e-SQ).

The purpose of the undertaken study is to investigate the ES-QUAL model and its different dimensions, particularly concerning the online banking service quality in Pakistan and to examine the effect of the ES-QUAL dimension on customers' satisfaction concerning the online banking sector. We have also examined the impact of mediation of perceived value and customer's trust in a relationship of ES-QUAL dimensions and customer satisfaction. Lastly, we have validated the customer satisfaction

through financial analysis to check whether customer satisfaction translates into the financial performance of commercial banks or not.

The prominence of the undertaken study is multifaceted because we used both primary and secondary analysis of the data. We have taken five top commercial banks of Pakistan and collected a sample of 910 respondents of the account holders of considered commercial banks. We used three multivariate models approaches, such as Normal theory, and bootstrapping methods to check the mediation, and direct relationship. We also employed SEM-based multivariate procedures such as exploratory and confirmatory factors analysis for the primary survey. Another important significance of this research is the validation of customer satisfaction through the financial performance of these five commercial banks and an analysis whether this customer satisfaction has translated into the financial performance of these banks or not. The secondary data has been used for further analysis, such as ratios analysis, to investigate the financial health of the banking sector in Pakistan.

The rest of the paper consists of section 2, which discusses the previous literature, and development of hypotheses, section 3, which contains research methodology. Section 4, on the other hand, demonstrates the results and findings, and section 5 comprises of discussions and conclusion of the paper.

Literature review and hypotheses development

Online banking is the non-conventional banking in which the customers do transactions via Internet portals for different banking services, for instance, online fund transfer, balance inquiry, cheque status, banking instruments request, payment of utility bills, online shopping through debit cards, and use of E-Purse facility, etc.

The online banking in Pakistan

The Pakistani banks are employing diverse online strategies that offer an affirmative change in the Pakistani banking industry. The rising of an electronic transaction by 16% in volume and 4% in value transactions exhibited greater awareness and utilization of online banking channels in the financial year 2015–2016. According to the State Bank of Pakistan (SBP), the actual and effective real-time online banking businesses also increased by 135.5 million in volume and PKR32.3 trillion in value, which shows a growth of 19% in the volume and 2% in the value, respectively in FY-

2015–2016. The use of a stand-in transfer and delivery tools such as the point of sale terminals (POS), and automated teller machine (ATM), moreover, the Internet and mobile banking transactions exhibited a rising trend of 22% in volume and 16% in value till June 2016. The points of sales (POS) transactions have tremendously increased from 32.1 million to 39.2 million in volume, and PKR172 billion to PKR200 billion in value during one year time period (Shadman, 2016). Similarly, online banking and mobile banking also showed strong growth, and online banking registered the growth of 18% in volume and 10% in value. However, mobile banking has recorded a growth of 8% in volume and 5% in value during this period. There is a significant increase in the number of banking branches, and a jump from 11937 to 13179, and the growth in new ATMs is also tremendous, from 9597 to 11381 during FY–2015–2016. As far as the points of sales (POS) are concerned, there is enormous increase by 9586 POS in the system, to reach 50769 till June 30, 2016 (Shadman, 2016). According to the State bank of Pakistan, significant growth has been recorded in key performance indicators of the online banking sector in FY–2015–2016. This was aligned with the vision of the SBP that consistent growth in digital/electronic channels has been seen, and significant value transactions through RTGS have been increased up to 930501 in volume and PKR231.7 trillion in value showing the growth of 21% and 29% respectively during FY–2015–2016. It is also interesting to know that the paper-based traditional transactions have been decreased by 6%, and continue to drop and comprises of 38% volume of total retail transactions.

At the same time, the SBP has been working on the two-pronged strategy to promote real implementations of digital transactions, in which bank customers are being motivated to do their transactions electronically or online. The first part of this strategy is to improve the infrastructure at three levels, 1) banking instruments like wallets and cards, 2) increase the access points including POSs mobile devices and ATMs, and 3) enhances the central transaction processors including gateways and switches. The second part of the strategy is to strengthen the regulatory affairs, which are relevant to the reliability and safety of these transaction frames that ultimately enhance the confidence and trust of customers in electronic banking transactions (Shadman, 2016).

Online or electronic service quality and customer satisfaction

Grönroos (1984, pp. 36–44; 1998, pp. 322–338; 2001) is known as the pioneer for giving conception of service quality. He was the first to give the concept and a comprehensive description of service quality as "the service

quality is a set of perceived judgments resulting from an appraisal process where customer match their expectations with the service they perceive to have received." Another important explanation of service quality demonstrated that it is the judgment of a customer amidst anticipation and requirements from the service provider, and actual service obtained (Parasuraman *et al.*, 1985, pp. 41–50).

Because of the importance of service quality, this study is an effort to evaluate what constitutes an online banking quality of service, and how the customers estimate it in the Pakistani context. According to Parasuraman *et al.* (1988, pp. 12–40), the most extensively employed approach was the SERVQUAL instrument for examining how the customer observes and perceives the service quality. However, the SERVQUAL instrument does not fulfil online service quality requirements. Few research studies have attempted to develop a useful model to gauge the online quality of services, for instance, Zeithaml *et al.* (2002, pp. 362–375), Wolfinbarger and Gilly (2003, pp. 183–198), Vinayek and Jindal (2011, pp. 63–71), and Santos (2003, pp. 233–246). However, the most effective and comprehensive models were ES-QUAL, E-TailQ, and WebQUAL, which were used in reported studies.

According to Zeithaml *et al.* (2002, pp. 362–375), the electronic service quality is an amount in which a website eases efficient and effective purchasing, shopping, delivery of services and goods. The definition provided by the Zeithaml (2002, pp. 135–139) has a comprehensive meaning that revolves around the facets of the service regarding the customers' experience, before using the website, experience during usage of the website, and post-experience after the transaction has made.

Santos (2003, pp. 233–246) has given another definition that states, "Electronic service quality (e-SQ) is a customer's overall assessments of e-service offerings in the virtual market." Online banking is highly concerned because of an online or electronic service providing entity. Thus, electronic service quality (e-SQ) is highly related to this industry (Vinayek & Jindal, 2011, pp. 63–71).

Numerous researchers have meticulously reviewed the Internet or online banking service quality. These studies uncover the customers' insight concerning the online banking quality of service. Moreover, previous literature elaborated on the measurements of online quality of service from the perspective of the online banking sector (Sohail & Shaikh, 2008, pp. 58–72; Ibrahim *et al.*, 2006, pp. 475–493; Bauer *et al.*, 2005, pp. 153–175; Kenova & Jonasson, 2006; Jun & Cai, 2001, pp. 276–291). However, the previous literature was relevant to the international scenario except for the few studies, for instance, Ahmed *et al.* (2017, pp. 974–1004), Khan *et al.* (2009, pp.

30–46), and Sohail and Shaikh (2008, pp. 58–72). Hence, the findings and recommendations cannot be appropriate in the Pakistani context; moreover, most of the mentioned studies employed SERVQUAL or SERVPERF models. These two models are ideal for offline service quality arrangements but not suited for online service quality measurement because online service quality has unique features. Therefore, the current study is unique in a way to gauge the online service quality in the banking sector by using ES-QUAL dimensions in the Pakistani context.

The customers' satisfaction concerning the Internet or electronic setting is known as online customer satisfaction (Zeithaml, 2002, pp. 135–139; Zeithaml *et al.*, 2002, pp. 362–375). Further, to fulfil the requirements and anticipations of a customer in online marketplaces, which changes over time because of novel experiences and knowledge of online customers. According to Szymanski and Hise (2000, pp. 309–322), electronic or online satisfaction is the customers' evaluation of online transaction as compared to the traditional offline transaction. As identified by Evanschitzky *et al.* (2004, pp. 239–247), the significant distinction amidst online retail and conventional service is the human-to-human and human to machine dealing, respectively. Thus, the innovative and modified approaches are needed to satisfy the online customers; this gap bridging is known as online customer satisfaction. Schaupp and Bélanger (2005, pp. 95–111), and Lee *et al.* (2009, pp. 7848–7859) have produced a substantial work on electronic satisfaction; they have identified several factors such as technology, shopping, and products' characteristics for online customer satisfaction. Technology is vital for website characteristics and functionalities, whereas shopping factors deal with the customers' opinions during and after shopping. The product factors belong to the features of goods or services.

Theoretical framework and hypotheses

We have developed a theoretical framework and hypotheses for an undertaken study constructed on previous studies about our considered ES-QUAL measurements, for instance, privacy, system availability, efficiency, and fulfilment as independent variables and dependent variable, i.e., customers' satisfaction. Moreover, considered mediating variables, for instance, customers' perceived value and trust.

Parasuraman and Zeithaml (2002) have introduced this model in 2002, and the ES-QUAL model is much parallel to the SERVQUAL model. Still, it has devised explicitly for evaluating the online quality of service. Parasuraman *et al.* (2005, pp. 213–235) have revisited their model, and a revised version was proposed in 2005. According to Zeithaml *et al.* (2002,

pp. 362–375), first, they checked this model with a limited focus group in a qualitative setting. Then they asserted that the e-SQ dimensions were outstandingly reliable across the groups. They concluded that the results of electronic service dimensions are similar regardless of products or services appraised on the Internet marketplace. Initially, they developed 11 dimensions such as responsiveness, reliability, efficiency, privacy/security, trust/assurance, flexibility, price knowledge, ease of navigation, customization/personalization, access, and site aesthetics. They further evaluated and presented the ES-QUAL model alongside four specific dimensions, for instance, efficiency, privacy, fulfilment, and system availability with 22 items, the description of 4 precise measurements as presented below:

- *The dimension of efficiency*: the dimension of efficiency is defined as the speed and easiness of website and user-friendly attribute of the website as well.
- *The dimension of fulfilment*: it elaborated as the fulfilment of promised items relevant to delivery systems.
- *The dimension of privacy*: the safety and protection of customers' information and transactions.
- *The dimension of System availability*: the technicality and functionality of the website.

Chang *et al.* (2009, pp. 423–443) have modified the ES-QUAL model to establish the association amongst service quality, customer satisfaction, and loyalty of a customer. They concluded that electronic service has a positive association between customers' satisfaction. Similarly, Chen and Hitt (2002, pp. 255–276) have studied the relationship of electronic service quality (e-SQ) and online customers' satisfaction. They exhibited that the precise electronic service quality (e-SQ) features to decrease the customers' switching and erosion. According to Sun *et al.* (2009, pp. 242–245), electronic quality of service has a potent and affirmative influence on customer's satisfaction, electronic customers' perceived value and loyalty. Al-Hawari and Ward (2006, pp. 127–147) have concluded the same results and established a positive and persuasive association amidst electronic quality of service, and customers' satisfaction.

Similarly, Kassim and Abdullah (2010, pp. 351–371), and Yen and Lu (2008, pp. 127–146) have concluded that the ES-QUAL dimensions positively affect customer satisfaction. According to Boddewyn and Iyer (1999, pp. 161–184), theories and instruments like ES-QUAL, which measure the e-SQ, must be validated further and applied according to the needs of different cultures across the world. For example, in the UK setting, credibility, website characteristics, access, attention, and trust are the most critical dimensions (Jayawardhena, 2004, pp. 127–138). However, in the case of

Hong Kong, security, credibility, problem handling, and efficiency are the essential dimensions (Noel & Siu, 2005, pp. 99–116). Similarly, efficiency, credibility, security, fulfilment, privacy, website aesthetics, and system availability are crucial dimensions in the case of Sweden (Kenova & Jonasson, 2006). Customization, website aesthetics, privacy, compensation, efficiency, contact, fulfilment, and system availability, are vital dimensions in Taiwan (Wu *et al.*, 2008, pp. 1446–1450). Hence, the similarities and dissimilarities have been observed in ES-QUAL dimensions from country to country. Following hypotheses are developed on the basis of previous literature:

H₁: The efficiency dimension of the ES-QUAL instrument will have a strong and positive influence on customers' satisfaction.

H₂: The fulfilment dimension of the ES-QUAL instrument will have a strong and positive influence on customers' satisfaction.

H₃: The privacy dimension of the ES-QUAL instrument will have a strong and positive influence on customers' satisfaction.

H₄: The system availability dimension of the ES-QUAL instrument will have a strong and positive influence on customers' satisfaction.

Customers' satisfaction and perceived value

According to Ahmed *et al.* (2017, pp. 974–1004), the importance of affiliation amid perceived service quality and service performance is much apparent in marketing and management. The psychological evaluation of a customer regarding the service and product alongside the anticipations of a particular service or product is known as the perceived value. According to marketing researchers, the benefit of quality and satisfaction is an immense competitive advantage of organizations (Birgelen *et al.*, 1997, pp. 1255–1271). Parasuraman *et al.* (1988, pp. 12–40) have argued that the customers' perceived value is an imperative affecting factor for customers' satisfaction. Several studies have proven the impact of customer's perceived value and concluded that this is an essential factor that influences the customers' buying behavior (Dodds & Monroe, 1985, pp. 85–90). According to Patterson and Spreng (1997, pp. 414–434), there is a cogent and affirmative association amidst customers' satisfaction and perceived value. According to Sweeney and Soutar (2001, pp. 203–220), the perceived value has more than one direction; for example, it has been categorized into three

dimensions; for instance, emotional, social, and economic benefits. If the cost of the service or the product is comparatively lower than the competitors, then the economic dimension of perceived value creates a positive impact on consumers' minds, and customers' satisfaction gets higher. If customers make purchase decisions based on feelings, which were generated because of the previous buying, then emotionally perceived value fulfills the customers' satisfaction. The social dimension is all about the service sensation capability that increases the self-concept, and thus, the socially perceived value has a strong and positive impact on customers' satisfaction. Hence, the following hypotheses have been proposed that were based on previous literature that established an affirmative and strong association amidst customers' satisfaction and perceived value:

H2A: The Perceived value will mediate the efficiency dimension of the ES-QUAL model and customer satisfaction.

H2B: The Perceived value will mediate the fulfillment dimension of the ES-QUAL model and customer satisfaction.

H2C: The Perceived value will mediate the privacy dimension of the ES-QUAL model and customer satisfaction.

H2D: The perceived value will mediate the system availability dimension of the ES-QUAL model and customer satisfaction.

Customers' satisfaction and customers' trust

If the consumers' expectations meet or exceed the anticipated features and benefits of a product and service and promises of the organization continuously encountered, then the customers' trust will be developed between the organization and customer (Mayer *et al.*, 1995, pp. 709–734). The trust is a dominant point of relationship marketing, besides the trust, some other factors have also augmented the relationship such as commitment, productive, and effective relational exchanges in comparison of ineffective and unproductive (Morgan & Hunt, 1994, pp. 20–38). The virtual marketplace on the Internet has always relied on customers' trust because trust plays a pivotal role in online transactions where uncertainty is prevailing, and very difficult to gauge product or service quality before buying (Palvia, 2009, pp. 213–220; Ba, 2001, pp. 323–336). Mainly, in online banking, it is pertinent to persuade customers to carry out the transactions at online media. Thus, customers' trust becomes more vital for online banking (Ba,

2001, pp. 323–336). Online banking has unique customers' trust dimensions because of the careful sort of online atmosphere, the widespread usage of technology, and the inherent uncertainty of open transactions' infrastructures (Yousafzai *et al.*, 2009, pp. 591–605). Dimitriadis *et al.* (2011, pp. 5–13) demonstrated that there are several elements, which further construct the customers' trust for online banking such as perceived privacy, perceived trustworthiness, and perceived security, etc. Trust is a multidimensional concept, and particularly in online banking, the trust and customers' satisfaction have important theoretical and practical implications (Godwin *et al.*, 2010, pp. 481–492; Ahmad & Al-Zubi, 2011, pp. 50–65). The online banking transactions have faceless interaction between the customer and the bank; moreover, all these transactions take place because of the customers' trust. Therefore, the importance of customers' satisfaction is solely dependent on the trust value. If it slightly breaks, then banks have to pay hefty prices in the form of customer forfeiture (Siam, 2006, pp. 1999–2004). We have developed the following hypotheses based on previous literature and the above discussions:

H3A: The customers' trust will mediate the efficiency dimension of the ES-QUAL model and customers' satisfaction.

H3B: The customers' trust will mediate the fulfillment dimension of the ES-QUAL model and customers' satisfaction.

H3C: The customers' trust will mediate the privacy dimension of the ES-QUAL model and customers' satisfaction.

H3D: The customers' trust will mediate the system availability dimension of the ES-QUAL model and customers' satisfaction.

Research methodology and data

The model of the research study

Based on previous literature and derived theoretical framework, the following conceptualized model of our research has been constructed and shown in Figure 1.

Data and methodology

We have selected five top commercial banks of Pakistan; for the survey analysis, we employed a 5-point Likert scale and adapted a questionnaire in which we incorporated original ES-QUAL dimensions as independent variables. We have used the perceived value and trust as mediating variables and the customers' satisfaction as a dependent variable. We have used 22 constructs in our questionnaire and collected responses from the account holders of the following mentioned commercial banks of Pakistan. We received 925 responses, but only 910 responses were found complete and appropriate. Therefore, the total sample of 910 was used for the undertaken study. For the financial performance, we have taken secondary data of ratios analysis from the official website of the State Bank of Pakistan for the period 2011 to 2015 of five commercial banks, for instance, 1) MCB Bank Limited (MCB), 2) Habib Bank Limited (HBL), 3) Bank AL-Falah Limited (BAL), 4) United Bank Limited (UBL), and 5) Allied Bank Limited (ABL). We used reliability and validities analysis, structural equation modeling, factor analysis such as Principal component analysis, Bartlett's technique, KMO analysis, anti-image correlation matrix, total variance explained, and confirmatory factor analysis. For direct and indirect relationships, we employed the Normal theory (Sobel, 1982; pp. 290–312; 1986, pp. 159–186), and bootstrapping (Hayes, 2013; Ahmed *et al.*, 2010, p. 439) methods. For the secondary analysis, we used financial ratios as financial analysis from the secondary data.

Results

Sample description

We have collected a total of 925 responses, but only 910 responses were found complete; thus, we have taken respondents as a sample. The requirement of SEM-based modeling is around 383, as mentioned in earlier studies, and our received sample is reasonably high than the adequate sample (MacCallum *et al.*, 1999, pp. 84–99; Anderson & Gerbing, 1988, pp. 411–423). The profile of 910 respondents comprises of 580(63.74%) males, and 330(36.26%) females. In terms of marital status, there were 521(57.25%) respondents were married, whereas, 309(33.96%) respondents were unmarried. In addition, 75(8.24%) respondents were divorced. We have selected 201(22.09%) respondents for the age bracket of 18–30 years, 322(35.38%) respondents are in 30–40 years age brackets, 276(30.33%) in

40–50 years age bracket, and 231(25.38%) respondents are within 50–60 years age bracket. As far as the experience is concerned, 319(35.05%) respondents have 1–5 years' experience, 287(31.54%) respondents have 5–10 years' experience, 197(21.65%) respondents have 10–15 years of working experience, 177(19.45%) respondents have 15–20 years' experience. However, 167(18.35%) respondents have more than 20 years of experience. In terms of the qualifications of our respondents, 210(23.08%) have high school diploma (HSC), 229(25.16%) respondents have graduation qualification, 199(21.87%) respondents have post-graduation qualification, whereas the rest of 122(13.41%) respondents have any professional qualification. We have calculated monthly income in Pakistani rupee (PKR), we have selected 278(30.55%) respondents, with the income of (10–30) thousand PKR, 299(32.86%) respondents were within the income bracket of (30–50) thousand PKR, and 201(22.09%) respondents were in the income bracket of (50–70) thousand PKR . However, 156(17.14%) respondents have the income of (70–90) thousand PKR, and finally, 101(11.10%) respondents have more than 90 thousand PKR of income per month.

Descriptive statistics of initial constructs

For employing SEM-based modeling, the normality of the sample data is the pre-requisites (Huang *et al.*, 2004, pp. 598–614). Therefore, the cases have been converted into z-scores, and outcomes exhibited that all the cases lay between ± 3 ; hence, we have retained all the cases. Additionally, we measured standard deviation, kurtosis, and skewness, which showed the results range is between ± 1.5 that is the prescribed range. Thus, this further authenticated the normality pattern of the collected data (Rutherford *et al.*, 1988, p. 484; Byrne, 2009).

Reliabilities and AVE of constructs

Table 1 exhibited the results of composite reliabilities, average variance extracted (AVE), Cronbach's alpha, and factor loadings. According to Burt (1976, pp. 3–52), Anderson and Gerbing (1988, pp. 411–423), and Bollen (1989), the factor loading (FL) can be assessed through the following formula:

$$FL = [\lambda^2] \text{Var}(X) \quad (1)$$

where: in Eq. (1) the term 'Var' is denoted for variance; λ is known for the path coefficient that joining the path amidst X with x, which also referred

to the loading of item x on X . The individual, as well as composite reliabilities for all constructs, are more than 0.7. The reliability is to be considered acceptable if $\alpha \geq 0.70$, good $\alpha \geq 0.80$, and excellent $\alpha \geq 0.90$ (Leech *et al.*, 2011), which is pre-requisite for confirmatory factor analysis. Cronbach's alpha (α) could be estimated from the following equation:

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum_{i=1}^k \rho_i(1-\rho_i)}{\sigma_x^2} \right) \quad (2)$$

where: in Eq. (2), the number of items denoted by k , $-\sigma_x^2$ is indicated for sample variance.

The outcomes regarding the squared root mean of AVE showed that the values for all considered constructs are higher than the value of 0.50, which is also the fundamental prerequisite for the confirmatory factor analysis (CFA). The values of AVE for all the constructs > 0.50 also validated the convergent validities of the constructs (Fornell & Larcker, 1981, pp. 39–50; Leech *et al.*, 2011). The AVE of indicators $x_1, x_2, x_3, \dots, x_n$ can be calculated from the following formula:

$$AVE = \frac{\sum [\lambda_i^2] \text{Var}(X)}{\sum [\lambda_i^2] \text{Var}(X) + \sum [\text{Var}(\varepsilon_i)]} \quad (3)$$

where: in Eq. (3), λ_i represents for loading of x_i on X ; however, Var indicates the variance, and ε_i is known for the expected error measurement of x_i (Fornell & Larcker, 1981, pp. 39–50). The Composite reliability (CR) could be measured from the Eq. (4) as follows:

$$CR = \frac{[\sum \{\lambda_i^2\} \text{Var}(X)]^2}{[\sum \{\lambda_i^2\} \text{Var}(X)]^2 + \sum [\text{Var}(\varepsilon_i)]} \quad (4)$$

where: in Eq. (4), $[\sum \{\lambda_i^2\} \text{Var}(X)]^2$ is sum of squared of factor loadings, and $\sum [\text{Var}(\varepsilon_i)]$ is known as the sum of variance for the error terms.

Discriminant and convergent validities

The outcomes of Table 1 exhibits that the factor loadings of all the items are ranging between 0.50–90, thus, the requirement of discriminant validities is met (Mishra, 2016, p. 529–549; Huang *et al.*, 2004, pp. 598–614). Discriminant validity is an essential condition for SEM-based modeling (Rutherford *et al.*, 1988, pp. 484; Hsieh & Hiang, 2004, pp. 43–58). The outcomes of Table 4 exhibit that inter-correlation of factors and items is greater than 0.50; hence this also met the requirement of convergent validities. Similarly, the values of average variance extracted of each construct are more than 0.50, which also justified the condition of convergent validity, as shown in Table 1 (Kline *et al.*, 2000, pp. 401–421; Fornell & Larcker, 1981, pp. 39–50).

Kaiser-Meyer-Olkin (KMO) and Bartlett's tests

There are two crucial tests. The first one is to measure the sampling adequacy. This test is known as the Kaiser-Meyer-Olkin (KMO) test. The second test is to check the sphericity, and also termed as Bartlett's sphericity approach. Outcomes of Table 2 demonstrated that the KMO value for all the constructs is 0.850 or simply 85.0%, which is greater than the threshold value of 0.50 (Leech *et al.*, 2011). In Bartlett's sphericity test, as the results are shown in Table 2, the probability is less than 0.05, and the Chi-square value is significantly above the benchmark. Thus, these results demonstrated that the factor analysis should be the preferable method for this research study (Hussain *et al.*, 2019, pp. 555–577).

Ant-image correlation matrix

We can select and deselect the variables through the anti-image correlation matrix (AICM) process. We examine the elements on the diagonal of AICM; if the distinct factors' measures of sampling adequacy (MSA) are higher than 0.50, then we incorporate all those variables in the study, which will have $MSA > 0.50$ (Ahmed *et al.*, 2020, p. 439). Otherwise, we drop all other variables that have $MSA < 0.5$ values. This is a stepwise method; first, we have to eliminate those variables which have the lowest value, and then again repeat the factor analysis, again check the lowest MSA values variables and remove them. This process will continue until all the variables have the $MSA > 0.50$ value. The results of Table 3 exhibited all the variables taken have $MSA > 0.50$ in a diagonal. Thus we have considered all the variables for our study.

Principal component analysis

We used factor analysis to condense our considered variables and items. For this purpose, we employed the Principal component analysis (rotated component matrix) method (Ahmed *et al.*, 2020, p. 439). In our questionnaire, we have a total of 22 items in ES-QUAL dimensions, dependent, and mediating variables. We have four dimensions of the ES-QUAL instrument in which 13 items have been incorporated, whereas, in two mediating variables, we have six items. However, for the dependent variable, i.e., customers' satisfaction, we have used three items. The outcomes of Table 4 exhibited that each set of variables and items has the value of more than 0.50; thus, now, we can retain all the factors and items (Kaiser, 1974, pp. 31–36).

Total Variance explanation

We have employed the principal component analysis as a part of factor analysis with the Varimax method of rotation; in this, we have applied the total variance explained the test to demonstrate the variance division among the probable variables. We gauge the effectivity of the factor through Eigenvalues; in this test, the threshold of eigenvalues should be higher than 1.0 for all the factors as a general criterion (Hussain *et al.*, 2019, pp. 555–577). The results of Table 5 demonstrated that the eigenvalue is more significant than 1.0. Hence, this validated the significance of the taken variables in the commenced study. The results of Table 5 further showed the cumulative total explained variance, which is 86.42%, and higher than the benchmark (rather good) and ideal to proceed further for the undertaken study.

Measures of fit indices

As far as measures of fit indices are concerned, there are over 20 fit indices, but still no agreement on specific indices to be reported for measuring the hypothesized model (Meyers *et al.*, 2006; Balakrishnan *et al.*, 2016, pp. 37–43). The overall measuring indices are classified into 4 major categories, for instance, 1) absolute fit-indices, 2) relative fit-indices, 3) non-centrality based indices, and 4) parsimonious fit indices (Byrne, 2009; Ryu, 2014, pp. 81). The results of fit measures for model measurement and structural model of undertaken are reported in Table 6.

Confirmatory factor analysis (CFA)

The outcomes of CFA that were examined on the grounds of theory for all the factors and indicators are presented in Table 6 (Ahmed *et al.*, 2020, p. 439; Rutherford *et al.*, 1988, p. 484). The summary of CFA outcomes for all considered factors and indicators of model measurement and structural model followed the cut-offs of acquired indices, and the outcomes are shown in Table 6. For the online banking service quality, we have employed the structural model to measure the parameters. We have applied ES-QUAL measurements, for instance, the privacy, efficiency, fulfillment, and system availability to gauge an online banking quality of service and customers' satisfaction. We employed customers' trust and perceived value as mediating variables, and also examined the indirect effect (mediation) of these variables between ES-QUAL dimensions (independent variables) and customers' satisfaction (dependent variable). We incorporated four constructs for efficiency dimension, and three items for each fulfillment: privacy, system availability, customer satisfaction, customers' trust, and perceived value. The values of fit indices for the absolute fit indices for instance (relative Chi-square, probability, GFI), relative fit indices such as (TLI, IFI, NFI), non-centrality based fit indices (RNI, RMSEA, CFI), and parsimonious measures of fit indices for instance (PCFI, PNFI) for measurement model and structural model are reported in Table 6. The outcomes demonstrated that all the considered fit-indices follow the threshold values for both measurements and structural models.

ES-QUAL dimensions and customer satisfaction (Direct effect)

The results from Table 7 demonstrated the direct association exogenous (independent) variables (ES-QUAL measurements) and endogenous (dependent) variable (customers' satisfaction). According to the results from Table 7, the efficiency, privacy, system availability, and fulfilment dimensions of the ES-QUAL instrument have a potent and affirmative influence on customers' satisfaction. The fulfilment dimension has a coefficient value of 0.5816, which is the highest among other dimensions; thus, it demonstrated that fulfilment has the maximum influence on customers' satisfaction. However, system availability is the second one with 0.4748 effects. Privacy and efficiency have the least impact on customers' satisfaction. The results from Table 7 further validated these results of T-values ($T > 2$), and corresponding probabilities ($p < 0.05$). Hence, the hypotheses (H_1 - H_4) relevant to the ES-QUAL dimensions, and customers' satisfaction have been supported because all the hypotheses have $T > 2$, & $p < 0.05$. Thus, it is final-

ly concluded that privacy, efficiency, fulfilment, and system availability have a positive and significant impact on customers' satisfaction.

The indirect effect of mediating variables (Mediation analysis)

We have employed a multivariate testing approach to examine the mediation. We have used two approaches to explore the impact of mediating variables, for instance, 1) Normal theory, or Sobel (1982, pp. 290–312; 1986, pp. 159–186) method, and 2) multiple mediations through bootstrapping method (Hayes, 2013; Ahmed *et al.*, 2020, p. 439).

Multiple mediations through the Bootstrapping method

The results from Table 8 defined the outcomes of indirect effect for both mediating variables through the bootstrapping method (Hayes, 2013; Ahmed *et al.*, 2020, p. 439). In this method, we inferred from Table 8 that hypothesis H_{5A} relevant to the mediation of customer trust between the efficiency dimension of the ES-QUAL model and customers' satisfaction had not been supported because the zero (0) lies between BootLLCIs and BootULCIs. Hence it is concluded that the customers' trust does not mediate the efficiency dimension and customers' satisfaction. The hypothesis H_{5B} has been supported because the indirect effect (0.5287) is significant, and zero does not occur between BootLLCIs and BootULCIs. Hence, it is concluded that the perceived value mediates the efficiency dimension and customers' satisfaction. Similarly, the hypotheses, H_{6A} , H_{6B} , H_{7A} , H_{7B} , H_{8A} , and H_{8B} , have been supported, and the indirect effect has significant values, and zero does not occur between BootLLCIs and BootULCIs. Thus, privacy, system availability, and fulfilment dimensions of the ES-QUAL model and customer satisfaction are mediated by the trust and the perceived value.

The Normal theory or Sobel (1982, 1986) method

We have deduced similar results from Normal theory or Sobel (1982, pp. 290–312; 1986, pp. 159–186) method, as we have already concluded from the bootstrapping (Hayes, 2013; Ahmed *et al.*, 2020, p. 439) methods. The interpretation of the result is different, however, the final result is the same. The results from Table 8 defined the outcomes of indirect effect for both mediating variables through the Normal theory method. In this method, we inferred from Table 8 that hypothesis H_{5A} relevant to the mediating effect of customers' trust between the efficiency dimension of the ES-QUAL model and customers' satisfaction had not been supported because

of the indirect effect (0.0001) is not significant. Moreover, the value z-statistics is less than 1.96 ($Z < 1.96$), and the corresponding probability is higher than 0.05 ($p > 0.05$). Thus the efficiency and customer satisfaction are not mediated by the customers' trust. The hypothesis H_{5B} has been supported because the corresponding value of z-statistics is more significant than 1.96 ($Z > 1.96$), and probability is less than 0.05 ($p < 0.05$). Thus, it is concluded that the customers' perceived value mediates the efficiency dimension and customers' satisfaction. Similarly, the hypotheses H_{6A} , H_{6B} , H_{7A} , H_{7B} , H_{8A} , and H_{8B} have also been supported because z-statistics for all the hypotheses are higher than 1.96 ($Z > 1.96$), and probability is less than 0.05 ($p < 0.05$). Thus, privacy, system availability, and fulfilment dimensions of the ES-QUAL model and customer satisfaction are mediated by the trust and the perceived value.

Financial performance of the banking sector

Outcomes of Table 9 demonstrated that the financial performance of five selected banks of the Pakistani retail banking industry. These outcomes validated the results of the direct effect of ES-QUAL dimensions, for instance, the efficiency, privacy, system availability, and fulfilment of customers' satisfaction, structural equation modeling, mediation analysis in which we have already found in the previous section. We have already determined that the online Internet retail-banking sector has furnished the costumers' needs, and it is already established that the dimensions of the ES-QUAL model have a positive and significant effect on customers' satisfaction. Thus, we want to check and revalidate from the secondary financial data of these five banks for the last five years whether the results of the financial performances of these banks (MCB, Bank Alfalah, Allied Bank, UBL, and HBL) validate our inferences or not. For the business performance, we used financial ratios, including returns on equity (ROE), profit after tax (PAT), returns on assets (ROA), and earning per share (EPS).

Comparison of financial performance

For the validation of hypotheses and results, we have also performed a financial analysis simultaneously with primary analysis with the discussed financial ratios such as ROA, PAT, ROE, and EPS. The secondary data for selected five commercial banks and ratios analysis validated the results of the ES-QUAL model, and it is concluded from the results from Table 9 that financial performance' results are linear with the outcomes of customer satisfaction of primary analysis. It is finally established from the

results from Table 9 that the commercial banks are adopting the online services for their banking transactions to keep competitive and fulfil the customers' needs.

Discussion

We have examined the effects of ES-QUAL dimensions on customers' satisfaction in the Internet banking sector of Pakistan. We have collected 910 responses from the customers of five commercial banks of Pakistan; this magnitude of a sample is reasonably higher, as proposed by MacCallum *et al.* (1999, pp. 84–99). Moreover, the outcomes of Bartlett's and KMO tests also validated our sample size is ideal for carrying out the study (Leech *et al.*, 2011). The results of the factor loading, AVE, and CFA showed that our model and factors are well qualified for the structural equation modeling, as confirmed by the previous theories and research studies (Ahmed *et al.*, 2020, p. 439; Fornell & Larcker, 1981, pp. 39–50). The outcomes extracted from the principal component analysis and total variance explained confirmed that our items, factors, variables, and overall model are robust, as indicated by the previous research studies (Hussain *et al.*, 2019, pp. 555–577; Kaiser, 1974, pp. 31–36).

The results of fit measures indicated that both the structural and measurement models are statistically significant and follow the requirement of structural equation modeling (Hussain *et al.*, 2019, pp. 555–577; Ryu, 2014, p. 81; Byrne, 2009). The outcomes of the hypotheses relevant to the dimensions of ES-QUAL instrument and customers' satisfaction showed that the four dimensions for instance efficiency, privacy, fulfilment, and system availability have a significant and positive impact on customers' satisfaction (Parasuraman *et al.*, 2005, pp. 213–233; Chang *et al.*, 2009, pp. 423–443; Sun *et al.*, 2009, pp. 242–245; Chen & Hitt, 2002, pp. 255–276; Al-Hawari & Ward, 2006, pp. 127–147; Lin, 2003, pp. 202–212).

The mediation results of perceived value and customers' trust between ES-QUAL dimensions and customers' satisfaction have been examined through Normal theory (Sobel, 1982, pp. 290–312; Sobel, 1986, pp. 159–186), and bootstrapping methods. The outcomes exhibited that the dimensions of the ES-QUAL model, for instance, the efficiency, fulfilment, privacy, and system availability, and customers' satisfaction mediated by the customer trust and perceived value. The results are consistent with the previous studies that also exhibited similar results (Birgelen *et al.*, 1997, pp. 1255–1271; Dodds & Monroe, 1985, pp. 85–90; Patterson & Spreng, 1997, pp. 414–434; Sweeney & Soutar, 2001, pp. 203–220). Previous literature also examined the positive effect of customer trust (Ahmad & Al-Zubi,

2011, pp. 50–65; Godwin *et al.*, 2010, pp. 481–492; Palvia, 2009, pp. 213–220; Morgan & Hunt, 1994, pp. 20–38). Finally, we have validated our results by examining the financial performances of all five banks, which showed a consistent improvement in financial ratios every year. These results also confirmed our hypotheses.

Conclusions

The outcomes of the research exhibited that the original ES-QUAL instrument is very much applicable in the electronic banking sector and online services quality in the case of Pakistan. We have used four traditional dimensions of the ES-QUAL model, such as the fulfillment, privacy, efficiency, and system availability, and concluded a significant and positive impact of these dimensions on customers' satisfaction for those customers who use the online banking facilities. Thus, it is concluded that the ES-QUAL models' dimensions are useful and have a significant positive impact while assessing the customers' satisfaction with online banking services. The outcomes of mediation established that customers' trust and perceived value have a potent mediating impact between the dimensions of the ES-QUAL model and customers' satisfaction. Finally, we have also analyzed the results of customers' satisfaction in terms of overall financial outcomes of the selected banks. We have checked whether these customers' satisfaction has also been translated into financial performance or not. Thus, the results of financial ratios established the positive association between customers' satisfaction and financial performance of considered five banks in the last five years. The financial improvement is consistent and increasing every year, which shows that apart from other factors of the banking sector, Internet banking operations also play a very vital role in the Pakistani banking industry.

The geographic scope is the most significant limitation of the undertaken study because we have taken only five of Pakistani commercial banks. Thus, the results cannot be generalized to the overall banking industry. Therefore, it is recommended to future researchers to take maximum Pakistani and regional countries banks for more comprehensive results. The SEM-based modeling is not evaluated the cause and effect between the variables. Thus, future researchers can employ cause and effect models for more robust results. Other valuable recommendation for future studies is to compare conventional and Islamic banking sectors.

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Annex

Table 1. Factor Loadings, Reliabilities, and AVE results

Variables	Constructs	Factor Loading	Cronbach's Alpha	Composite Reliability	AVE*
Efficiency	EFF1	.891	.721	.740	.696
	EFF2	.864			
	EFF3	.682			
	EFF4	.711			
Fulfilment	FUL1	.737	.712	.715	.677
	FUL2	.759			
	FUL3	.682			
Privacy	PRV1	.781	.720	.749	.597
	PRV2	.737			
	PRV3	.652			
System Availability	SA1	.757	.736	.742	.669
	SA2	.859			
	SA3	.682			
Customer trust	CT1	.581	.674	.749	.593
	CT2	.737			
	CT3	.552			
Perceived value	PEV1	.859	.692	.735	.630
	PEV2	.559			
	PEV3	.682			
Customer Satisfaction	CS1	.781	.784	.812	.712
	CS2	.737			
	CS3	.859			

Note: *Average Variance Extracted

Table 2. Outcomes of KMO and Bartlett's analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.850
Bartlett's Test of Sphericity	Approx. Chi-Square	7138.409
	Df	21
	Sig.	.000

Table 3. Anti-image Matrix

Variables	Efficiency	Fulfilment	Privacy	System Availability	Customer Trust	Perceived value	Customer satisfaction
Efficiency	.781^a	-.192	-.584	-.537	.313	.004	.349
Fulfilment	-.192	.902^a	.080	-.104	-.232	-.108	-.496
Privacy	-.584	.080	.850^a	.139	-.181	-.328	-.332
System availability	-.537	-.104	.139	.874^a	-.157	-.102	-.391
Customer Trust	.313	-.232	-.181	-.157	.531^a	-.064	.238
Perceived Value	.004	-.108	-.328	-.102	-.064	.942^a	-.275
Customer satisfaction	.349	-.496	-.332	-.391	.238	-.275	.821^a

Note: a. Measures of Sampling Adequacy (MSA)

Table 4. Principal Components Analysis (Rotated component matrix)

Variables	Const.	EFF	FUL	PRV	SA	CT	PEV	CS
Efficiency	EFF1	0.64						
	EFF2	0.71						
	EFF3	0.80						
	EFF4	0.81						
Fulfilment	FUL1		0.72					
	FUL2		0.66					
	FUL3		0.59					
Privacy	PRV1			0.82				
	PRV2			0.77				
	PRV3			0.69				
System Availability	SA1				0.78			
	SA2				0.73			
	SA3				0.83			

Table 4. Continued

Variables	Const.	EFF	FUL	PRV	SA	CT	PEV	CS
	CT1					0.67		
Customer Trust	CT2					0.74		
	CT3					0.84		
	PEV1						0.58	
Perceived Value	PEV2						0.75	
	PEV3						0.63	
	CS1							0.69
Customer Satisfaction	CS2							0.79
	CS3							0.72

Table 5. Outcomes of Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.925	19.235	19.235	6.925	19.235	19.235	6.820	18.945	18.945
2	3.446	9.571	28.806	3.446	9.571	28.806	2.639	7.330	26.275
3	2.741	7.615	45.133	2.741	7.615	45.133	2.625	7.292	40.869
4	2.458	6.827	59.484	2.458	6.827	59.484	2.567	7.130	55.287
5	2.106	5.851	78.321	2.106	5.851	78.321	2.540	7.056	76.549
6	1.908	5.299	83.621	1.908	5.299	83.621	2.529	7.025	83.574
7	1.009	2.802	86.423	1.009	2.802	86.423	1.026	2.849	86.423

Note: Extraction Method: Principal Component Analysis.

Table 6. Model Fit Indices

The goodness of Fit Measures	Absolute Fit Indices			Relative Fit Indices			Non-centrality-based Indices			Parsimonious Fit Indices	
	χ^2/df	Probability	GFI	NFI	IFI	TLI	CFI	RMSEA	RNI	PCFI	PNFI
Measurement Model	2.14	0.0011	0.97	0.92	0.96	0.96	0.97	0.004	0.97	0.82	0.85
Structural Model	2.45	0.0023	0.98	0.94	0.99	0.97	0.98	0.003	0.96	0.86	0.89
Criterion (Threshold values)	< 5.0	<0.05	> 0.95	> 0.90	> 0.95	> 0.95	> 0.95	<0.05	> 0.95	> 0.75	> 0.75

Note. TLI=Tucker-Lewis Index; χ^2/df =Relative Chi square; GFI=Goodness of Fit Index; RMSEA=Root mean squared error of approximation; CFI=Comparative fit index; NFI=Normed fixed index; IFI=Incremental fixed index; RNI= Relative Non-centrality Index; PNFI=Parsimony-adjusted normed fit index; PCFI=Parsimonious-adjusted fit index.

Table 7. Hypotheses Testing Summary of Direct Relationship

Direct Relationship	Direct Effect (β)	SE	T*	P*	LLCI	ULCI	Decision
H ₁ : Efficiency → Customer Satisfaction	0.1865	0.0184	10.1553	0.0000	0.1504	0.2225	Supported
H ₂ : Fulfilment → Customer Satisfaction	0.5816	0.0286	20.3603	0.0000	0.5255	0.6377	Supported
H ₃ : Privacy → Customer Satisfaction	0.3593	0.0274	13.1285	0.0000	0.3056	0.4130	Supported
H ₄ : System Availability → Customer Satisfaction	0.4748	0.0268	17.7196	0.0000	0.4222	0.5274	Supported

Note: * Signifies T>2 & p<0.05

Table 8. Mediating Effects (MLR, Normal Theory & Bootstrapping Method)

Mediation	Bootstrapping Method				Normal Theory Method				Decision
	Indirect Effect (β)	Boot SE	Boot LLCI	Boot ULCI	Indirect Effect (β)	SE	Z*	Prob.**	
H _{5A} : EFF→CT→CS	0.0001	0.0007	-0.0009	0.0021	0.0001	0.0007	0.0928	0.9261	Not supported
H _{5B} : EFF→PEV→CS	0.5287	0.0327	0.4856	0.5758	0.5287	0.0213	24.8688	0.0000	Supported
H _{6A} : FUL→CT→CS	-0.0122	0.0040	-0.0218	-0.0057	-0.0122	0.0036	-3.4305	0.0006	Supported
H _{6B} : FUL→PEV→CS	0.3668	0.0248	0.3196	0.4180	0.3668	0.0242	15.1394	0.0000	Supported
H _{7A} : PRV→CT→CS	0.0047	0.0024	0.0012	0.0111	0.0047	0.0024	1.9670	0.0492	Supported
H _{7B} : PRV→PEV→CS	0.2258	0.0188	0.1896	0.2630	0.2258	0.0198	11.4270	0.0000	Supported
H _{8A} : SA→CT→CS	0.0047	0.0022	0.0012	0.0105	0.0047	0.0022	2.1151	0.0244	Supported
H _{8B} : SA→PEV→CS	0.2433	0.0197	0.2046	0.2825	0.2433	0.0198	12.2708	0.0000	Supported

Note: * denotes the values of Z>1.96 and Z>-1.96; ** denotes p<0.05; No of Boots = 5000

Table 9. Financial performance of Commercial banks

MCB (MCB BANK LIMITED)					
Financial Ratios	2011	2012	2013	2014	2015
Returns on asset (ROA)	3.18%	2.91%	2.72%	2.78%	2.62%
Returns on equity (ROE)	26.17%	24.59%	23.09%	23.83%	23.25%
Earning per share (EPS)	PKR21.12	PKR20.70	PKR19.31	PKR21.85	PKR22.96
Profits after tax (PAT) in PKR	19,424,906	20,940,696	21,495,338	24,324,756	25,550,990
ABL (ALLIED BANK LIMITED)					
Financial Ratios	2011	2012	2013	2014	2015
Returns on asset (ROA)	2.10%	2.03%	2.14%	1.90%	1.65%
Returns on equity (ROE)	29.40%	28.44%	29.96%	25.94%	23.26%
Earning per share (EPS)	PKR10.71	PKR11.22	PKR12.79	PKR13.11	PKR13.20
Profits after tax (PAT) in PKR	10,139,681	11,675,814	14,643,360	15,015,092	15,120,307
BAL (BANK AL FALAH LIMITED)					
Financial Ratios	2011	2012	2013	2014	2015
Returns on asset (ROA)	0.81%	0.92%	0.83%	0.85%	0.91%
Returns on equity (ROE)	16.36%	19.42%	18.04%	18.86%	19.00%
Earning per share (EPS)	PKR2.60	PKR3.38	PKR3.47	PKR3.55	PKR4.73
Profits after tax (PAT) in PKR	3,503,130	4,556,121	4,675,950	5,640,851	7,522,810
UBL (UNITED BANK LIMITED)					
Financial Ratios	2011	2012	2013	2014	2015
Returns on asset (ROA)	2.10%	2.10%	2.00%	2.10%	2.00%
Returns on equity (ROE)	23.50%	23.80%	22.30%	23.90%	25.70%
Earning per share (EPS)	PKR12.66	PKR14.71	PKR15.21	PKR17.91	PKR21.02
Profits after tax (PAT) in PKR	15,499,663	18,006,728	18,613,956	21,929,561	25,727,14
HBL (HABIB BANK LIMITED)					
Financial Ratios	2011	2012	2013	2014	2015
Returns on asset (ROA)	1.95%	1.42%	1.36%	1.76%	1.67%
Returns on equity (ROE)	20.44%	17.59%	16.95%	19.71%	20.64%
Earning per share (EPS)	PKR17.11	PKR16.17	PKR14.94	PKR21.21	PKR24.18
Profits after tax (PAT) in PKR	20,741,816	21,564,165	21,910,490	31,112,521	35,470,458

Source: State Bank of Pakistan and authors' calculations.

Figure 1. Conceptualized model of the Research Study

