

# Impact of e-banking service quality on e-loyalty in pandemic times through interplay of e-satisfaction

E-banking  
service quality

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## Abstract

**Purpose** – This study aims to empirically explore e-banking service quality and its impact on the e-banking loyalty through a mediating impact of e-banking satisfaction. The account holders of three domestic systemically important banks of Pakistan were surveyed during COVID-19 to examine the electronic services provided by these banks.

**Design/methodology/approach** – The data was collected through an adapted questionnaire by using emails and messaging applications. The database of a local marketing company in Pakistan was used, and 976 responses were included in the analysis. The structured equation modeling was used to test the propositions of study.

**Findings** – The findings delineate that reliability and website design proved to increase e-banking loyalty, particularly during COVID-19. The link between e-banking privacy and security and e-banking loyalty was proved as fully mediated by e-banking satisfaction; however, indirect effect of the reliability and website design with e-banking loyalty was partially mediated.

**Practical implications** – In strategic planning of e-banking mechanisms and the associated consumer behavior, the results of this study can be helpful for policymakers. In case of similar epidemics and natural calamities, consumers may depict similar behavior as shown during the lockdown and social distancing during COVID-19; hence, the study can help regulatory bodies in preparing their safety roadmap.

**Originality/value** – The mediating effect of e-banking satisfaction between privacy & Security and e-banking loyalty implies that customer give importance to secure e-banking platforms. There can be a variation in their loyalty because of privacy concerns. The application of cognitive–motivational–relational (CMR) theory in a relationship between e-banking service quality and e-banking loyalty with a mediating role of satisfaction is an emotional response to capture the behavioral changes during COVID-19. It enables researchers to understand the CMR theory concerning COVID-19 and e-banking perspective.

**Keywords** E-banking service quality, E-banking satisfaction, E-banking loyalty, CMR theory, COVID-19, Domestic-Systemically important banks, Domestic systemically important banks, e-banking loyalty, e-banking satisfaction, e-banking service quality

**Paper type** Research paper



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## Introduction

The advancement in information and communication technologies (ICT) has transformed way of doing business. Technology plays a bridging role in information and business processes. Along with other business entities, banks are also taking benefit of ICT since long. In almost every field, ICT is playing its role, e.g. business (Versteeg and Bouwman, 2006; Yi and Thomas, 2007), marketing (Qirici *et al.*, 2011; Vilaseca-Requena *et al.*, 2007), entrepreneurship (Malik *et al.*, 2020) etc. We have seen transformations in the banking systems every other day and conventional banking is reducing. Digital banking is always a preference for account holders nowadays (Singh *et al.*, 2017). It is pertinent to mention here that customer experience is always an important consideration for organizations (Mansoor *et al.*, 2020). A recent pandemic (COVID-19) was also one of the uncertain situations which helped customers, employees and public in large realize changes in business models (Seetharaman, 2020). Banks noticed consumer's shift towards digital or electronic banking during the pandemic times (Baldwin and Mauro, 2020; Wójcik and Ioannou, 2020). There were rumors about spread of virus from cash notes which also became an important reason to tilt people toward e-banking (Auer *et al.*, 2020; SivaKumar *et al.*, 2020). The spread of this virus was very rapid (Novel, 2020), as it killed numberless people in nearly eight months (till August 2020). Along with the spread of virus, the fear termed as a social stigma and the real pandemic (Aslam *et al.*, 2020) was noticed. The pandemic originated from China in the end of December (Zhu *et al.*, 2020) and slowly shifting its epicenter from China to USA, then to Europe was reported. Multiple studies predicted the outbreak (Awan and Aslam, 2020) using different tools and techniques and gave policy recommendations which can be helpful (Aslam *et al.*, 2020).

The foundation of banking services lies in the trust factor among the banks and consumers with an ultimate goal to provide quality services on lesser transaction costs (Shankar and Jebarajakirthy, 2019). Trust and loyalty holds great importance in electronic environments (Chaudhry *et al.*, 2009). In pandemic situation, this importance amplifies dramatically as ICT is aimed toward not only new developments but also customer retention. This became of challenge for the banking industry also, especially in less developed countries, and role of knowledge management in commercial banks increased, which is termed as very important (Khokhar *et al.*, 2010). Similarly quality of services was also termed as important in not only banking but also in other industries, e.g. restaurants (Malik *et al.*, 2020; Malik *et al.*, 2013; Safi and Awan, 2018), construction (Al-Momani, 2000; Love *et al.*, 2000), education (Joseph and Joseph, 1997; Latif *et al.*, 2019), etc.

The COVID-19 has changed the way people live, interact and make purchase decisions. The fear of COVID-19 is life threatening for people around the world (Mamun and Ullah, 2020). Particularly, students, these days are restricted to take a class online (Basilaia and Kvavadze, 2020), teachers and officials need to have online meetings (Basilaia *et al.*, 2020; Sahu, 2020), and buyers and sellers are focusing on electronic means too (Hall *et al.*, 2020; Rovetta and Bhagavathula, 2020). It's quite identical in the banking sector that digital means are getting popular as account holders are already much leaned toward online banking. Unpredictably, where COVID-19 has shutdown business around the world and put a huge number of people below the poverty line, ample opportunities are created e.g. for information technology businesses, telehealth care and security firms. Traditional banking has declined during the COVID-19, and consequently, increase in e-banking platforms is observed. Thus, the empirical potential to evaluate the banking services is needed to understand the behavioral changes. The noticeable boost has been observed toward e-banking practices during pandemic times in Pakistan too. Electronic banking built an efficient flow of services provided with reduced operational and fixed costs with more safety

features incorporated. People in Pakistan are more leaned toward dealing with their banking needs through online means as they were not allowed to visit their bank branch. The debate of research moves around the remedies of research questions mainly dealing with how service quality and its dimensions are associated with the e-satisfaction and e-loyalty of banking system and how e-satisfaction mediates the relationship of service quality and e-loyalty.

This study heavily supported the emerging concept of different e-banking services quality (EBSQ) characteristics under COVID-19 as compared to normal conditions. The horizon of this area of research is quite large as studies on multiple contexts e.g. retail industry (Kim *et al.*, 2009; Ziaullah *et al.*, 2014), healthcare (Gummerus *et al.*, 2004), tourism (Kim *et al.*, 2011), online shopping (Collier and Bienstock, 2006; Santouridis, 2009) etc. were found but there is less literature available in banking context, and very scarcely e-banking in the pandemic times is discussed in literature. This study adds into literature the EBSQ during this pandemic and captures dynamic user's behavior via cognitive–motivational–relational (CMR) theory.

## Theoretical foundations and literature review

### *Cognitive–motivational–relational theory*

This study is theoretically backed by CMR theory as it connects the process of analyzing different perspectives and emotional responses of humans toward evaluation (Kemper, 1992; Lazarus, 1993; Lazarus and Lazarus, 1991). Emotion stimulates almost all the events which are significant in our lives moreover how to respond to them influences too (Kemper, 1992; Mansoor *et al.*, 2020). Demographic traits determined the occurrence of cognitive orientation such as values, beliefs and personal objectives resulted in a significant repose toward an event within an environment (Shankar and Jebarajakirthy, 2019). There are multiple instances in literature where CMR theory is used to connect the mechanism of aspects of individual response and the quality of services (Bowen and Chen, 2001; Brady and Robertson, 2001; Shankar and Jebarajakirthy, 2019; Sivapalan and Jebarajakirthy, 2017); however, usage in COVID-19 contributes into the CMR literature differently. The response to environment or an event (COVID-19 in case of this study) elucidates the loyalty of customers in e-banking, which can be termed as an addition in the theoretical aspects.

### *E-banking service quality and e-banking loyalty*

It is extensively discussed in literature that loyalty depends on EBSQ (Hussien and Aziz, 2017; Shankar and Jebarajakirthy, 2019). There are four dimensions of EBSQ, namely, reliability, privacy and security, website design and customer service and support of e-banking. The first dimension, reliability in e-banking holds great importance as response of customers is crucial. Reliability is one of the factors which can influence responses, however timely processing of banking transactions with zero errors is often taken essentially in judging the reality of e-banking service providers (Blut *et al.*, 2014; Liang and Pei-Ching, 2015; Saccani *et al.*, 2014). The second dimension, privacy and security expresses the extent to which an e-banking user confidently shares personal information on an e-banking platform (Muturi *et al.*, 2013). E-banking creates serious privacy issues for the users as there is no in-person interaction (Kim *et al.*, 2009; Shankar and Jebarajakirthy, 2019). However, the trust factor surged toward service providers and the desired customer satisfaction response can be achieved through trust (Safi and Awan, 2018). The better code of conduct for privacy and safety results in higher loyalty (Orel and Kara, 2014; Thaichon *et al.*, 2014). The third dimension of EBSQ, website design is defined as various interactive features of the e-banking service helps provide consumers with structure of transaction during and

summary afterwards the structure of processing a transaction and more (Wolfenbarger and Gilly, 2003). Higher level of satisfaction can be achieved through an updated website (Kim *et al.*, 2009) and enhanced interactive experience. The traits of interactive websites enhances trust, satisfaction and loyalty toward the e-banking results (Lee *et al.*, 2006). The fourth dimension, customer service and support can be explained as the rapidity of retort toward any delinquent reported by user during or after service experience. The users here can be referred as both individuals and organizations (Blut *et al.*, 2015). Similar to the individual users, organizations are also much concerned, which sometimes also have a deeper impression on employees as well (Awan *et al.*, 2017). The support provided by the banking professional are considered more secured and assured while any trouble is faced in India (Shankar and Jebarajakirthy, 2019) and similar case is expected in Pakistan as well. The adaptation in website design leads consumers to trouble (Thaichon *et al.*, 2014) while the quick and effective solution provided on time to user results into higher satisfaction leading to loyalty in electronic environments generally (Chaudhry *et al.*, 2009) and in e-banking more specifically (Shankar and Jebarajakirthy, 2019). Resultantly, all four dimensions are hypothesized as follows for empirical testing.

- H1. Reliability in e-banking services positively influences e-banking loyalty.
- H2. Privacy and security in e-banking services positively influence e-banking loyalty.
- H3. Website design in e-banking services positively influences e-banking loyalty.
- H4. Customer service and support in e-banking services positively influence e-banking loyalty.

#### *E-banking service quality and e-banking satisfaction*

The relationship of EBSQ and satisfaction remains a great academic debate (Esengun *et al.*, 2006; Haider *et al.*, 2014; Shankar and Jebarajakirthy, 2019; Wang and Ma, 2010; Shankar and Jebarajakirthy, 2019). Contradictory findings and views of researchers can be noted, as some argued EBSQ as an antecedent of e-banking customer satisfaction (Shankar and Jebarajakirthy, 2019). Older studies termed satisfaction as antecedent of service quality (Cronin *et al.*, 2000; Cronin and Taylor, 1992; Dick and Basu, 1994; Parasuraman *et al.*, 1985) and the findings of these classical studies cannot be neglected even if the service quality is now read as electronic service quality and digital aspect is also attached to satisfaction and loyalty. An empirical analysis of customer perception of US banks on service quality reports higher quality of EBSQ leads to satisfaction (Foroughi *et al.*, 2019). Website attributes undoubtedly play a vital role in improving customer satisfaction (Amin, 2016; Roy *et al.*, 2012) however variety of attributes have different impressions on the minds of consumers (Bressolles *et al.*, 2014). This vividly demonstrated the relationship between website design and e-banking customer satisfaction. Support services provided during e-banking should be less technical as satisfaction among users varies because of technicality of services (Black *et al.*, 2014). Thus customer service and support need to be smooth and favorable for achieving higher satisfaction (Shankar and Jebarajakirthy, 2019). To achieve satisfaction and for greater customer loyalty, privacy and navigation interface must be focused (Bressolles *et al.*, 2014). The service providers especially in e-banking are strictly advised to ensure focus on high level of secure information, confidentiality and transaction privacy (Brun *et al.*, 2014; Yu *et al.*, 2015). Significant impact of EBSQ on customer satisfaction in e-banking is also reported in this context (Kassim and Abdullah, 2010). Hence, below hypothesis are formulated to empirically test in e-banking during COVID-19.

*H5.* Reliability in e-banking services positively influences e-banking satisfaction.

*H6.* Privacy and security in e-banking services positively influence e-banking satisfaction.

*H7.* Website design in e-banking services positively influences e-banking satisfaction.

*H8.* Customer service and support in e-banking services positively influence e-banking satisfaction.

#### *Mediating role of e-banking satisfaction*

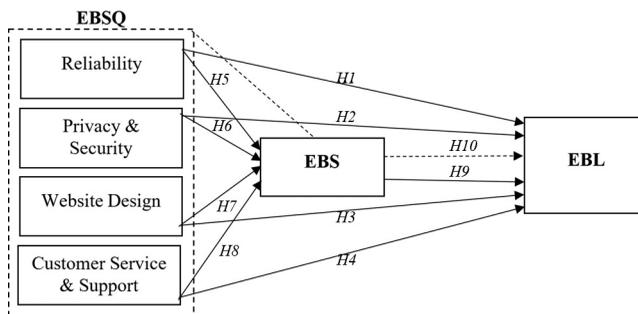
Generally, businesses always strive for higher customer satisfaction, being a core element. Beyond doubt, loyalty of customers can be attained by provision of higher levels of satisfaction to them. In tourism, satisfied tourists happily convert into loyal ones (Mahadin *et al.*, 2020). E-satisfaction leads toward attitudinal loyalty consequently leaving a positive impact on behavior. E-satisfaction in banking can lead to more usage of banking services with higher possibilities of e-loyalty (Giao *et al.*, 2020; Suariedewi and Suprapti, 2020). The internet speed and connectivity often influence satisfaction and impact loyalty also (Chaudhry *et al.*, 2009). E-trust and e-satisfaction mediate the relationship between the services service quality (Giao *et al.*, 2020). In recent literature, studies have been discussed the strong relationship between e-satisfaction and e-loyalty however, in the context of pandemic scarce literature measured impact of e-banking satisfaction and e-banking loyalty. Hence, the below empirical propositions were formulated and tested in this study. The framework in figure 1 shows all hypotheses.

*H9.* E-banking satisfaction positively influences e-banking loyalty.

*H10.* E-banking satisfaction positively mediates the relationship between e-banking service quality and e-banking loyalty

#### **Methodology**

The data was collected from the users of three domestic systemically important banks (DSIBs) as per the recent listing of State Bank of Pakistan, namely, National Bank of Pakistan, Habib Bank Limited and United Bank Limited. A structured questionnaire was adapted questionnaire was used to collect responses through convenience sampling. Online



**Figure 1.**  
Conceptual framework

link was sent to the account holders of DSIBs using emails and messaging applications. The data of 3000 account holders was purchased from a local email and messaging marketing company. A total of 1,102 responses were received and 976 deemed usable for further analysis and remaining 126 being incomplete were discarded.

The scale was adapted according to the e-banking in pandemic needs with special attention to that meaning of constructs did not changed. Two experts in the DSIBs and one university professor verified the scale which was then used in the questionnaire. The demographics information was also collected in the same questionnaire in a separate section. The four components of ESBQ were measured using different scales; reliability was measured by four items (Jayawardhena, 2004; Muturi *et al.*, 2013), privacy and security was operationalized by three items (Quach *et al.*, 2016), website design was measured by four items (Jayawardhena, 2004) and five items were used to measure customer service and support (Quach *et al.*, 2016; Wolfenbarger and Gilly, 2003). The other two variables EBS and EBL were measured using five and four items respectively (Amin, 2016). The responses were measured on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

## Results

### *Demographics analysis*

The surveyed bank account holders had a larger ratio of males (72.23%) as compared to females (27.77%). Most of them (699) were young adults, with an age range 18–27 years, which makes 71.61% of the total followed by 214 respondents with age range 28–37 years. The least (39) were in the age range 48–57 years. The monthly income ranged from a minimum of 30,000 or lesser to 91,000 or higher considering much variations in the remuneration system in Pakistan, as well as the reason data was taken from people from all professions. The respondents with a salary of 30,000 or lesser encompassed around 45% of the total which shows that either they are working on low wage rate in the private sector. Least of them (13) fall under the income level ranging from 71,000 to 80,000. More than half of the respondents (58 %) are working in private sector and least (1 %) were self-employed in the sample. There was also a representation of students (274) in the sample. Most of the bank account holders (81.45%) frequently uses e-banking platform and nearly 94% believed e-banking is more useful than the conventional banking particularly because of lockdown restrictions, time and cost-effectiveness. As they believed e-banking is useful for them and saves money and time too, trust showed on e-banking during COVID-19 is significant. The detailed demographic information of the sample is provided in [Table 1](#).

### *Measurement model assessment*

To ensure the reliability and validity among constructs, measurement analysis is recommended (Hair *et al.*, 2010). Convergent and discriminant validity were examined through factor loadings, average variance extracted (AVE) and composite reliability (CR) values (Cheah *et al.*, 2018). The cutoff point for each measure varies, factors loading value must be greater or equal to 0.70 or 0.50, and Cronbach's alpha and CR values falling between 0.60 and 0.70 are acceptable (Hair *et al.*, 2010). The acceptable AVE values should be 0.50 or greater (Cheah *et al.*, 2018) by comparing diagonal values with the correlation coefficients for each construct in the relevant rows and columns (Hair *et al.*, 2010). [Table 2](#) depicts that all the values are in range, except three items which were deleted because of lower factor loadings and further analysis was performed. The values of all constructs indicated good

Category	No. of Respondents	(%)
<i>Gender</i>		
Male	705	72.23
Female	271	27.77
<i>Age</i>		
18–27 Years	699	71.61
28–37 Years	214	21.92
37–47 Years	48	4.91
48–57 Years	39	3.99
<i>Monthly Income (PKR)</i>		
30,000 or Less	440	45.08
31,000 – 40,000	138	14.13
41,000 – 50,000	154	15.77
51,000 – 60,000	107	10.96
61,000 – 70,000	60	6.14
71,000 – 80,000	13	1.33
81,000 – 90,000	28	2.86
91,000 or Higher	60	6.14
<i>Profession</i>		
Government Employees	126	12.9
Private Employees	566	57.99
Self-Employed	10	1.02
Students	274	28.07
<i>Bank Account</i>		
HBL	330	33.81
UBL	307	31.45
NBP	339	34.73
<i>E-banking Usage Frequency</i>		
Frequent User	795	81.45
Not a Frequent User	181	18.55
<i>E-banking Usefulness</i>		
Useful	914	93.64
Not Useful	62	6.26
<i>E-banking Cost and Timesaving</i>		
Yes	878	89.95
No	98	10.05
<i>E-banking Mobile Application's Trustworthiness</i>		
Yes	633	64.85
No	343	35.14

**Table 1.**  
Demographics of  
respondents

validity, consistency and accuracy of the measurement model. The graphical representation of measurement model assessment is provided in [Figure 2](#).

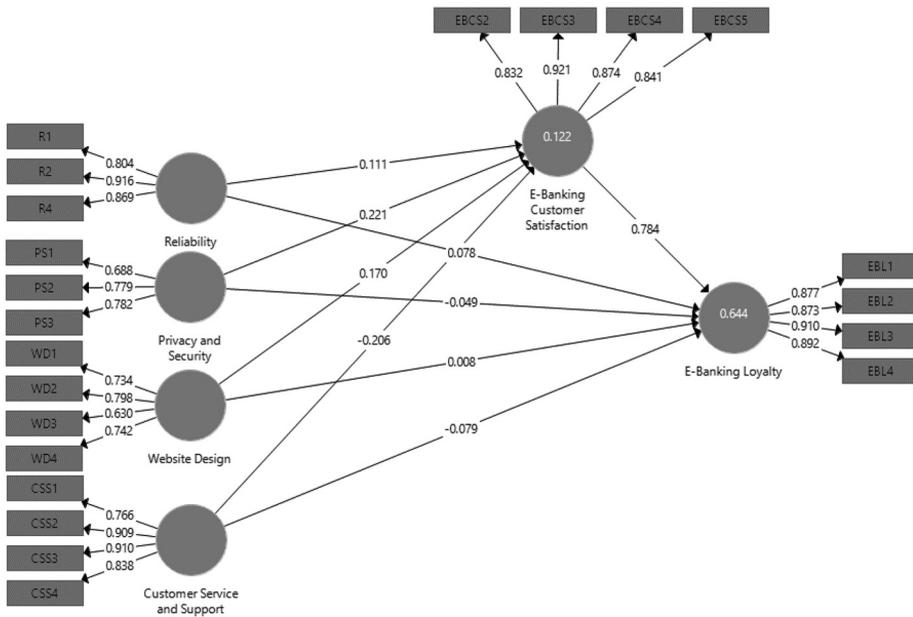
The discriminant validity was then examined using the Hetrotrait–Monotrait (HTMT) ratios under the prescribed criteria ([Franke and Sarstedt, 2019](#)). As shown in [Table 3](#), all the ratios are within range. The convergent validity was confirmed through Fornell–Lacker criterion and all the values were within the range and defined criteria. The values were found within the range and are depicted in [Table 4](#).

Items	Statements	FL
Reliability AVE (0.75), CR (0.90) $\alpha$ (0.83)	E-banking website provides the services exactly as promised during COVID-19	0.804
	E-banking always provides the services at the promised time during COVID-19	0.916
	Using e-banking, I can retrieve the transaction details on my account during COVID-19	Del
	The information provided over the e-banking website is accurate during COVID-19	0.869
Privacy and Security AVE (0.57), CR (0.80) $\alpha$ (0.62)	My personal information is protected on the e-banking platform during COVID-19	0.688
	My financial information is protected on the e-banking platform during COVID-19	0.779
Website Design AVE (0.053), CR (0.82) $\alpha$ (0.73)	The transactions over the e-banking website are secured during COVID-19	0.782
	The e-banking website is updated regularly during COVID-19	0.734
	The e-banking website is well organized during COVID-19	0.798
	The e-banking website includes interactive features during COVID-19	0.630
Customer Service and Support AVE (0.74), CR (0.92) $\alpha$ (0.90)	The e-banking website is easy to use during COVID-19	0.742
	Customer service personnel are knowledgeable of e-banking services during COVID-19	0.766
	Customer service personnel are always willing to help me with matters relating to e-banking during COVID-19	0.909
	My queries relating to e-banking are answered promptly during COVID-19	0.910
	E-banking customer care team has customers' best interests at heart during COVID-19	0.838
E-banking Satisfaction AVE (0.75), CR (0.92) $\alpha$ (0.89)	E-banking customer care team can be accessed at any time (24/7 operating hours) during COVID-19	Del
	I am generally pleased with this bank's online services during COVID-19	Del
	I am very satisfied with this bank's online services during COVID-19	0.832
	I am happy with this online bank during COVID-19	0.921
	The website of online banks is simple to use during COVID-19	0.874
E-banking Loyalty AVE (0.79), CR (0.94) $\alpha$ (0.91)	I am satisfied with the overall online bank's products and services during COVID-19	0.841
	I will recommend e-banking to other people during COVID-19	0.877
	I prefer e-banking above other channels of banking during COVID-19	0.873
	I would like to say positive things about e-banking to other people during COVID-19	0.910
	I intend to continue using e-banking during COVID-19	0.892

**Table 2.**  
Cronbach's alpha,  
AVE and CR values

### *Structural model assessment*

The estimation of a structural model was established through path analysis. Generally, the estimation of VIF,  $R^2$ , Beta and  $f^2$  while focusing on the *t-values* are considered for structural model assessment under bootstrapping process. A bootstrap with a subsample of 5,000 to improve the statistical significance of items weightage was performed as per the statistical guidelines (Cheah *et al.*, 2018). The VIF measures the extent to which the multicollinearity issues make biases in regression outcomes. The value above 5 depicted the collinearity issues among the items of the variable (Fornell, 1994). The value of  $R^2$  exhibits the changes in the response variable because of the existence of an endogenous variable. Moreover, the higher the value of  $R^2$  it will satisfy the predictive accuracy (ranges from 0 to 1). The value of  $f^2$  confirms whether the exclusion of the predictor has any influence on the endogenous variable and is measured to check the size of effect because the *p-value* is the indicator of



**Figure 2.** Measurement model assessment

	1	2	3	4	5	6
1 Customer Service and Support						
2 E-Banking Satisfaction	0.071					
3 E-Banking Loyalty	0.127	0.843				
4 Privacy and Security	0.521	0.305	0.187			
5 Reliability	0.261	0.244	0.234	0.764		
6 Website Design	0.283	0.221	0.162	0.297	0.224	

**Table 3.** Discriminant validity (HTMT ratios)

	1	2	3	4	5	6
1 Customer Service and Support	0.625					
2 E-Banking Satisfaction	-0.119	0.775				
3 E-Banking Loyalty	-0.234	0.761	0.888			
4 Privacy and Security	0.164	0.270	0.145	0.752		
5 Reliability	-0.125	0.288	0.253	0.451	0.745	
6 Website Design	0.139	0.207	0.148	0.203	0.174	0.729

**Table 4.** Convergent validity (Fornell-Lacker criterion)

showcasing the effect only but not the size of the effect, thus  $f^2$  has significance (Ahmad *et al.*, 2019).

Usually  $\beta$ ,  $p$  - values and  $t$ -values are considered to accept or reject the hypothesis. Interestingly,  $H1$  and  $H3$  were accepted ( $\beta = 0.078$ ,  $t$ -values = 3.218 and  $p$  - value = 0.001

and  $\beta = 0.08$ ,  $t$ -values = 0.3363,  $p$ -value = 0.353) and  $H2$  and  $H4$  were rejected ( $\beta = -0.049$ ,  $t$ -values = 1.819,  $p$ -value = 0.035 and  $\beta = -0.079$ ,  $t$ -value = 3.231,  $p$ -value = 0.001). The results confirmed, two predictors (reliability and website design) influence negatively however (privacy and security and customer service and support) effect positively. These results are inconsistent with the previous literature (Shankar and Jebarajakirthy, 2019). The results of  $H5$ ,  $H6$  and  $H7$ , respectively, demonstrated  $\beta = 0.111$ ,  $t$ -values = 3.052,  $p$ -value = 0.001,  $\beta = 0.221$ ,  $t$ -values = 5.519,  $p$ -value = 0.000 and  $\beta = 0.17$ ,  $t$ -values = 5.798,  $p$ -value = 0.000, reporting the positive influence of e-banking customer satisfaction on loyalty. In contrast, in  $H8$  the negative effect on loyalty was reported ( $\beta = -0.206$ ,  $t$ -value = 5.113,  $p$ -value = 0.000). Finally,  $H9$  with  $\beta = 0.784$ ,  $t$ -value = 9.726,  $p$ -value = 0.000 confirmed the proposed hypothesis and significant positive impact was proved.

$H10$  confirmed the mediation of EBS between reliability and EBL with  $\beta = 0.087$  and,  $t$ -value = 3.058 however the tendency of 0.087,  $LL = 0.138$ ,  $UL = 0.046$  under 95% (confidence interval) boot and did not overlap the zero among certain values for mediation confirmation. Likewise, the mediation of EBS in-between privacy and security and EBL  $\beta = 0.173$  and,  $t$ -value = 5.466 however the tendency of 0.173,  $LL = 0.225$ ,  $UL = 0.133$  under 95% (confidence interval). Similarly, the mediation of EBS between website design and EBL with  $\beta = 0.133$  and,  $t$ -value = 5.778 however the tendency of 0.133,  $LL = 0.169$ ,  $UL = 0.093$  under 95% (confidence interval). The mediation effect EBS among customer service and support and EBL with  $\beta = -0.162$  and,  $t$ -value = 4.553 however the tendency of  $LL = -0.133$ ,  $UL = -0.195$  under 95% (confidence interval) boot and did not overlapped the zero among certain values but a significant negative relationship was observed, hence, mediation was approved. Moreover,  $f^2$  determines effect size, and the large, medium and low categories are classified within the range of 0.35, 0.15 and 0.02 respectively. In this study,  $f^2$  values are; one (large), seven (medium) and one (low). The detailed tabulation is given in Table 5.

## Discussion

This study was conducted not only to improve the e-banking loyalty through utilizing and offering high-quality services in e-banking environment, but also to check the behavioral changes in account holders during the pandemic times. The findings are consistent with earlier researchers (Blut *et al.*, 2015; Chaudhry *et al.*, 2009; Safi and Awan, 2018; Shankar and Jebarajakirthy, 2019) with some exceptions probably because of this hard time of COVID-19. The insignificant relationship of privacy and security and customer service and support was proved, mediation wasn't expected (Quach *et al.*, 2016). The findings are novel as people usually do not pay attention toward website design because of busy schedules; however, they are concerned about website design and reliability. The account holders need to be satisfied from the customer services and support which then becomes a source of loyalty during COVID-19. Therefore, the indirect effect of reliability and website design on EBL via EBS proved to be partially mediated however the customer service and support confirmed full mediation. The rejected indirect effect of customer service and support on e-banking loyalty via e-banking satisfaction might be the reason people did not find their problems are fully resolved by the customer service and support department during the pandemic times. The customers will never be satisfied and loyal until and unless his problem and concern will not be addressed, hence serious concern of banks and similar organizations is needed especially during the hard times same as Coronavirus pandemic. The structured responses recorded or generated through ICT or artificial intelligence applications has a limited amount of information and may not solve the problem. Hence, this study helped to enhance the literature and supported EBSQ to be used in these epidemic studies also. E-banking

	Relationship	Std. Beta	Std. Error	t-value	p-value	UL	LL	Discussion	R <sup>2</sup>	f <sup>2</sup>	VIF
H1	R → EBL	0.078	0.025	3.218	0.001	0.04	0.12	Supported		0.078	1.38
H2	P&S → EBL	-0.049	0.026	1.819	0.035	-0.093	-0.008	Not Supported		-0.049	1.572
H3	WD → EBL	0.008	0.02	0.363	0.358	-0.025	0.04	Supported		0.008	1.111
H4	CSS → EBL	-0.079	0.025	3.231	0.001	-0.115	-0.036	Not Supported		-0.079	1.242
H5	R → EBCS	0.111	0.036	3.052	0.001	0.058	0.176	Supported	0.72	0.111	1.366
H6	P&S → EBCS	0.221	0.04	5.519	0	0.153	0.285	Supported	0.47	0.221	1.517
H7	WD → EBCS	0.17	0.029	5.798	0	0.119	0.215	Supported	0.31	0.17	1.078
H8	CSS → EBCS	-0.206	0.044	5.113	0	-0.247	-0.146	Not Supported	0.122	-0.206	1.194
H9	EBCS → EBL	0.784	0.016	9.726	0	0.758	0.81	Supported	0.36	0.784	1.139
H10a	R → EBCS → EBL	0.087	0.029	3.058	0.001	0.046	0.138	Supported			
H10b	P&S → EBCS → EBL	0.173	0.032	5.466	0	0.12	0.225	Supported			
H10c	WD → EBCS → EBL	0.133	0.023	5.778	0	0.093	0.169	Supported			
H10d	CSS → EBCS → EBL	-0.162	0.036	4.553	0	-0.195	-0.113	Not Supported			

**Table 5.**  
Hypotheses testing  
(direct and indirect  
effects)

facilities and services should be offered in a way which attract consumers with cost-efficiency as the main focus.

### **Conclusion, implications and future research**

The current circumstances progress the requirement of e-banking, had a critical influence on the usage of conventional banking and focused on the influence during the pandemic, however their preferences related to trust, safety and security, reliability, website designs and customer support, and an interesting change from previous literature is noted. The probable reason is the hard times of the ongoing pandemic (COVID-19).

This study brought an addition to the literature where CMR theory can be applied to support our framework, thus providing strength to it. This research highlights the association of CMR with COVID-19 thus contributes to the CMR literature in a divergent manner. Predominantly, the significance of DSIBs is important and no study considering the account holders was conducted. The State Bank of Pakistan thus can take benefit from this study to design policies regarding e-banking especially in the hard times of epidemics and natural calamities that can help banks retain their existing accounts holders and attract new as well. Moreover, service providers can also understand customer's perception and factors which make them more satisfied and loyal toward e-banking services. Also, this study serves as a source of understanding for customers' priorities and focuses required from e-banking services to become loyal and satisfied from the online banking platforms during the lockdown. Additionally, it assists banks in strategic decisions making for improvements in the e-banking future of Pakistan and manage COVID-19 and digitalization.

This research was limited to Pakistan's e-banking environment because of accessibility issue of respondents and time constraint as quick research is needed and appreciated in these unprecedented times. We have considered only the mediated impact of e-banking customer satisfaction moreover it was quite difficult for us to build a relationship between EBSQ dimensions with e-banking satisfaction because of relatively less literature in the similar context. Further research also can empirically verify the relationship of initial trust along with customer satisfaction in e-banking and can consider banks data from multiple nations. A comparative study of Asians with other regions can be a useful study. Also, future research should consider the combination of strategic management theories to study the relationship of EBSQ. Interestingly, at very less instances (Ul Haq *et al.*, 2020), VRIO framework is considered for empirical testing especially as a mediator. Thus, another recommendation is including the VRIO framework as a mediator will may result in some interesting findings.

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