



The impact of digital service quality dimensions on customer satisfaction and customer loyalty of digital banking in Sri Lanka

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Abstract

Digital banking is one of the major services introduced by the banking sector recently to improve the satisfaction level and the loyalty of the customers by providing more efficient and comfortable services. However, sufficient evidence is not available on whether the digital banking quality dimensions improve customer satisfaction and loyalty. Therefore, this study attempted to explore how digital banking service quality dimensions affect customer satisfaction and loyalty. The study was positivistic, and a deductive approach was deployed. Moreover, a multi-stage systematic random sampling technique was used as the sampling technique. The data were collected from the 300 customers who are using digital banking services (Sampath -Vishva digital banking service) in Sampath Bank, Galle Branch. Data were collected by conducting face-to-face interviews using a structured questionnaire and analyzed using SPSS software. Results revealed that digital banking quality factors such as tangibility, responsiveness, privacy, and system availability are the factors that most affected the satisfaction level of the customers who are using digital banking. Accordingly, it was concluded that customer satisfaction is needed to create customer loyalty. Moreover, it was concluded that digital quality dimension cannot directly impact on customer loyalty. Empirical evidence helped to understand the importance of service quality dimensions of digital banking. These findings will help policy makers and financial institutions to develop quality dimensions to improve customer satisfaction and to expand customer retention in the banking sector.

Keywords: Customer satisfaction, Digital banking, Risk management, Service

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Introduction

Digital technologies have fueled digital transformation, forcing changes in the structure of the services and products in the banking industry. A successful transition from the old world to the new one requires a focus on multilevel governance (Leal Filho et al. 2020; Awan et al. 2020). The digital transformation has shifted the traditional process to a digital-systematized process, giving rise to a new face in the banking sector. However, using modern equipment and software is only one aspect of digital transformation in banking, as it also involves reviewing management methods, communications, and organizational culture. Internet banking, innovative software, and databases ensure 24-hour customer transaction services, enhancing the pace of competition in the sector. Many traditional banks around the world are now digital banks dominated by digital trends. With this increased dissemination of technology, populations are forced to use digitalized banking for their routine transactions. Although this might be seen by some as having various benefits, it is a disruption to the norm to which a bank customer has to become accustomed. This variance means that customers need to make some changes to their routine, changes that constitute a risk to maintaining customer satisfaction at previous levels.

In the simplest of terms, the digitalization of the banking business means that the traditional services offered by banks are now offered through digital means. Amongst these services are transferring funds from one bank account to another, viewing and managing bank account details, requesting information on transactions carried out, checking bank account balances, managing loans, paying bills, etc. Digital banking is expected to provide a convenient, easy, and secure way of carrying out banking services in Sri Lanka from the comfort of home, any time, from the personal computer or laptop and using the bank's mobile app on your smartphone or tablet. This increases the speed of completing tasks (Japparova and Apoga, 2017). Digital banking involves the digitization of every program and activity carried out by financial institutions and their customers.

The banking sector tends to introduce Internet Banking Services as a tool for current customers who continuously use banking services and to attract a new customer base (Nimako, Gyamfi & Wandaogou 2013). Internet banking facilitates fund transfers, balance inquiries, bill payments, account information and stopped payment requests. There are many studies to measure the impact of service quality dimensions on customer satisfaction, but relatively limited research was conducted to measure service quality dimensions of digital banking services and its impact on customer satisfaction (Saha & Zhao, 2005). Moreover, literature suggested that there is a need for more research which determine the e-service quality dimensions (Zeithaml, Parasuraman & Malhotra, 2000). Therefore, this study measured the influence of digital banking quality dimensions on customer satisfaction and loyalty.

In this dynamic financial world, many banks try to enrich their market share and customer base. To achieve these objectives, a lot of banks have launched their digital products to these markets. Just launching a digital product to the market is not effective and banks need to always concern about the quality expected by their customers. The researchers have argued that though the banks adopt digital banking as an initiative to face high competition internet banking technology does not meet the needs of the customers and the desired quality (Bebli, 2012). According to Saha & Zhao (2005) managing the quality of the services, which holds an important place in customer satisfaction, is one of the key challenges of the Internet as a service delivery channel. Sri Lankan

customers are very much concerned about the security of their transactions and with the growth of digital banking, the risk of cyber-attacks and fraud also increases and that has created a kind of hesitation to indulge in digital transactions. Hence, banks need to invest in robust cyber security measures to protect customer data and maintain trust in their digital services by enhancing the quality of their digital platforms.

The competitive advantage depends on many aspects such as providing a hassle-free, personalized, and cyber-secure experience, economic aspects, and the needs of society at large. Moreover, banks need to be concerned about how to convert satisfied customers into loyal customers. Therefore, there is a need to understand the intensity of the digital service quality factors that influence customer satisfaction for digitalized banking services and products in Sri Lanka to provide a better-quality service for its customers. Moreover, Zaidi and Apoga (2021) pointed out that the banking industry in Sri Lanka needs to strengthen and ensure the availability of quality web-based technological services to meet the competition and, at the same time, address customer needs. More importantly, customers are interested in having a frequent customer support system and many customers still prefer personal assistance or face-to-face interactions. Therefore, digital banks need to provide adequate customer support channels.

Moreover, In the Sri Lankan context limited studies have reported the effect of the quality of digital banking services on customer satisfaction (Tharanikaran, Sritharan & Thusyanthy, 2017). Therefore, there is a need for further investigations. Accordingly, this study explored the impact of the quality of digital banking services dimensions on customer satisfaction. Finally, commercial banks and financial institutions operating in Sri Lanka will benefit from these findings.

The objectives of this study are diverse, and the researcher mainly concentrated on gaining a clear insight into the different digital service quality factors of digital banking influencing customer satisfaction in Sri Lanka. The effect of various service quality factors of digital banking on customer satisfaction was measured for quantitative analysis. The impact of customer satisfaction on customer loyalty (CL) and how customer loyalty is influenced by digital service quality dimensions was quantified. Finally, the research focused on formulating recommendations for an effective and efficient digital banking service in Sri Lanka.

Relationship between digital service quality factors and customer satisfaction

The connection between factors affecting the quality of digital services and customer satisfaction in internet banking differs significantly from traditional banking. Internet banking enables customers to interact with a website rather than a human, resulting in cost savings for the banking system and improved customer relationships. As a result, the design of the e-banking website plays a pivotal role in creating a user-friendly interface that meets customer expectations, ultimately helping the bank thrive in the competitive online business landscape (Subahudin et al., 2023). Additionally, according to Ling et al. (2016), internet banking facilitates more convenient and efficient transactions for customers on the bank's website. Customers evaluate the quality of service based on their experiences and the information they receive from their surroundings (Wang, 2014). The quality of service is a critical factor influencing customer satisfaction. In the realm of electronic banking, superior service quality can significantly enhance customer satisfaction, as customers can utilize it for various financial activities. Therefore, we formulated the first hypothesis as follows:

(H1) - Digital service quality dimensions have a significant impact on customer satisfaction

Relationship between tangibility and customer satisfaction

According to Toor et al. (2016), tangibility is concerned with the look of tangible resources such as buildings, machinery, people, and communication systems. Examples of this facet in banking include how bank statements look, how websites are designed, how the equipment is kept up to date, and how employees interact with customers. The degree of customer satisfaction can be increased through continuous communication between the employee and the customer (Lau et al. 2013).

Amin (2016) studied the effectiveness of internet banking services and showed how these factors affect consumer happiness and loyalty. According to the study, consumer satisfaction is positively correlated with each of website efficiency, user-friendliness, site organization, and personal needs fulfillment characteristics. Furthermore, Chong et al. (2010) experimentally investigated the characteristics that influence the uptake of online banking in Vietnam and found that elements including trust, perceived utility, and government assistance had a substantial impact on customer satisfaction. Based on the results above, the following hypothesis was formed.

(H1A) - Tangibility has a significant impact on customer satisfaction with digital banking

Privacy and customer satisfaction

According to Zethaml et al. (2002), privacy indicates that information and data are protected and not shared. Customers always view privacy concerns as a significant aspect, and they feel that banks can protect their personal and financial information, especially when they do transactions via internet banking (Ling et al. 2015). According to Parasuraman et al. (1985), the fundamental quality attribute in any bank is privacy or confidentiality during the transaction. The satisfaction of customers is impacted by the privacy of their personal information, which leads to the voluntary use of e-commerce systems (Molla & Licker, 2001). Additionally, research by Saha and Zhao (2005), Tharanikaran et al. (2017), Gupta & Bansal (2012), and Sakhaei et al. (2014) has shown that privacy has a significant impact on consumer satisfaction. Accordingly, the second hypothesis was as follows.

(H1B) - Privacy has a significant impact on customer satisfaction with digital banking

System availability and customer satisfaction

The primary characteristics of a system's availability are the availability of modern equipment and physical infrastructure (Kumbhar, 2011). According to Ling et al. (2015), having an online presence is crucial for connecting with customers, and system uptime is crucial for customer satisfaction (Tharanikaran et al. 2017). According to Kumbhar (2011), system accessibility has a beneficial impact on customer satisfaction. As a result, the research suggested the following hypothesis:

(H1c)- System Availability has a significant impact on customer satisfaction with digital banking

Efficiency and customer satisfaction

According to Zethaml et al. (2002), efficiency refers to the feasibility for a customer to access a website, identify the required product, and get information with the least effort. According to Wu et al. (2012) and Sakhaei, Afshari & Esmaili (2014), efficiency can have a favorable impact on customer satisfaction levels. Additionally, effectiveness can have a favorable impact on the level of satisfaction of the customers. Efficiency has been shown by Tharanikaran et al. (2017) and Gupta & Bansal (2012) to have a significant impact on customer loyalty and satisfaction. Moreover, Kumbhar (2011) proposed that efficiency has a sizable favorable impact on consumer satisfaction. As a result, the main premise of the study is that e-banking must use web portals when offering management solutions.

(H1d) - Efficiency has a significant impact on customer satisfaction with digital banking

Responsiveness and customer satisfaction

Rijwani et al. (2017) found a direct link between service quality and customer satisfaction and mentioned two categories in service quality, namely mobile banking customer service quality and mobile banking application quality. Responsiveness is defined as the willingness to assist customers and provide prompt service (Parasuraman et al., 1988).

According to most scholars (Saha & Zhao, 2005; Khan & Mahapatra, 2009; Gupta & Bansal, 2012; Nagabhushanam, 2011; Wu et al. 2012), responsiveness has a greater capacity to increase customer satisfaction levels. According to Lau, Cheung, Lam, and Chu (2013) and Ijaz & Ali (2013), responsiveness is one of the most common dimensions to be the primary cause of satisfaction or discontent. Additionally, Sakhaei et al. (2014) and Munusamy, Chelliah & Mun (2010) showed that responsiveness has a considerable impact on customer satisfaction. Accordingly, this study developed the following hypothesis.

(H1E) - Responsiveness has a significant positive impact on customer satisfaction with digital banking

Customer satisfaction and the customer loyalty

When someone is loyal, he makes regular purchases based on his decision-making process. Customer satisfaction in Pakistan was found to have a favorable and significant impact on customer loyalty in research conducted by Javed in 2017. According to subsequent research by Tripathi (2018), consumer loyalty was positively and significantly impacted by satisfaction in the restaurant industry in Delhi, India. Where it discussed the word-of-mouth factor, which is the capacity to persuade patrons to provide favorable reviews of this restaurant and spread the word about it to others. As a result, customer satisfaction increases because the visitor is pleased with the restaurant's food and wants to return. Haq (2012) also investigated the connection between customer loyalty and customer satisfaction in his research and showed a direct and substantial correlation between customer happiness and loyalty. Additionally, Aprilia et al. (2020) stressed

that brand loyalty increases with consumer satisfaction. According to research, trust has a positive and noteworthy impact on consumer satisfaction. Customers think that the bank makes them feel comfortable and offers solutions to all their difficulties.

Accordingly, H₂ hypothesis was developed as follows:

(H₂) - Customer satisfaction has a significant impact on customer loyalty to a digital banking platform

Digital service quality factors and customer loyalty

Griffin (2005) asserts that loyalty has the following four traits: regular repurchasing, purchasing goods or services from the same location, referring, or endorsing to others, and resistance to being persuaded to switch by the competition. As a result, prior studies have undertaken a lot of research on loyalty. According to Ali and Reza's (2015) study on the impact of service quality on client satisfaction and loyalty in Pakistani Islamic banks, client happiness and loyalty are influenced by service quality.

Further, it was determined by Kamran et al. (2017), Breugelmans (2015), Kang & Alejandro (2015), Liu & Mattila (2016) that customer loyalty is significantly impacted by quality service factors, as opposed to Kadimpully et al. (2015), who came to the opposite conclusion. Considering this, the H₃ hypothesis was formulated as follows:

(H₃) - Digital service quality factors have a significant impact on customer loyalty to a digital banking platform

Customer satisfaction working as mediator between digital service quality and customer loyalty.

The mediation effect of customer satisfaction has been widely addressed in research studies related to service quality and customer loyalty. More precisely, Solimun and Fernandes (2018) emphasized that the effect of service quality on customer loyalty can be mediated by customer satisfaction. Moreover, studies conducted by Caruana (2002), Zeitham et al. (1998), and Cronin et al. (2000), state that customer satisfaction tends to be a mediator in the relationship between service quality, service orientation, and the marketing mix strategy and customer loyalty; thus, customer loyalty will be the key to success, not only in the short term, but also in a sustainable competitive advantage. More appropriately, further studies done by Yadav et al, (2019) also proved that customer satisfaction provides a directional influence on the relationship of service quality and customer loyalty. The connection of service quality, customer satisfaction and customer loyalty become important factors for a company. Customer satisfaction can be raised because of good service quality which can also influence customer loyalty (Florese et al.2020). The following hypothesis was developed as per the above justifications:

(H₄) - Customer satisfaction works as a mediator between digital service quality and CL.

Methodology

The conceptual model of this study was developed by combining the variables used in previous studies (Tharanikaran et al, 2017; Sakhaei et al. 2014; Kamran et al. 2017). Those studies reveal that customer satisfaction and loyalty is affected by the quality of digital banking service and that customer satisfaction works as a mediator between digital banking service quality (DBSQ) and customer loyalty (CL).

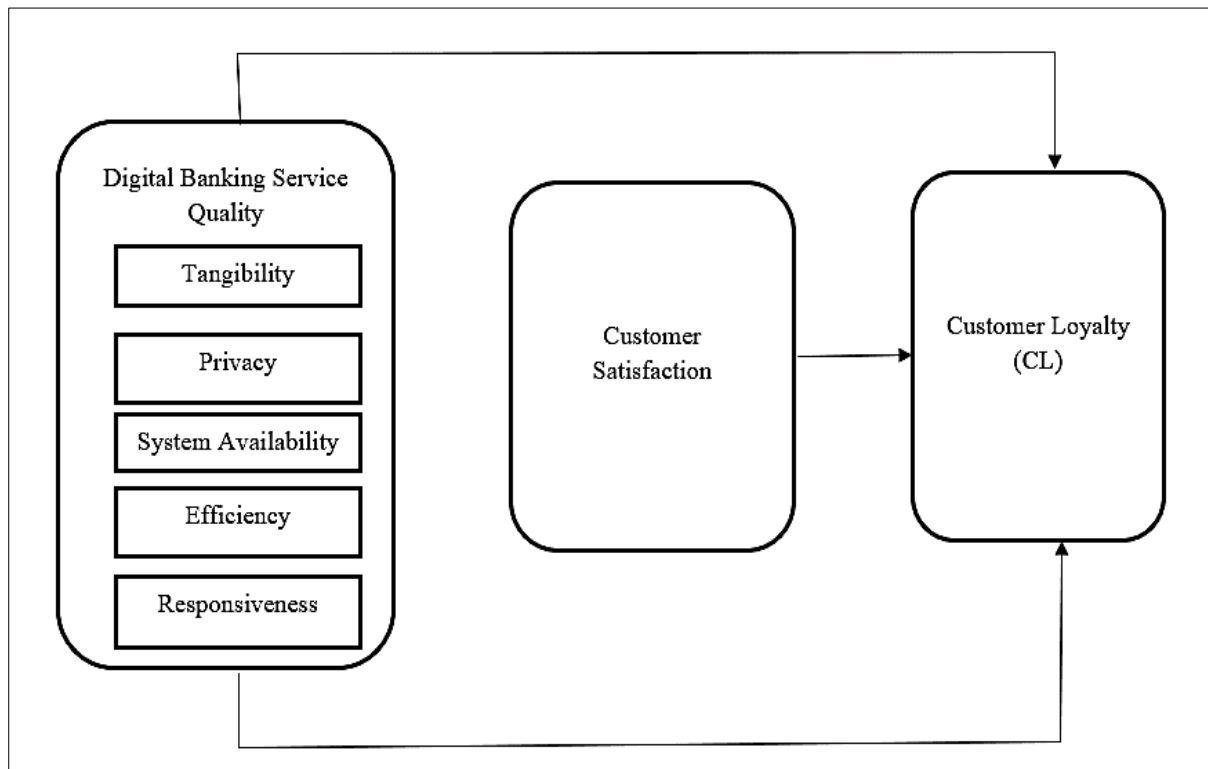


Figure 1: Conceptual Framework of the Study

The goal of the current study was to uncover the various quality factors that influence satisfaction and loyalty of Sri Lankan customers with digital banking. Through this investigation, specific research hypotheses were formulated by accurately pinpointing associations and impacts. The chosen research philosophies were positivism and the deductive approach, which align with the research objectives. The reliability was assessed using quantitative approaches and trustworthy tools from past studies. The samples for the investigation were chosen using a multi-stage systematic random sampling technique. First, the district was selected randomly out of the 25 districts and then the branch was selected deliberately after considering the customer base (highest digital banking users in the district). Finally, the digital banking users were chosen using systematic random sampling by selecting a random point of digital banking users. The main objective of this study was to gather first-hand data from consumers utilizing a standardized structured questionnaire and asking preset questions via interview method. The deductive method, explanatory research design, and positivistic research philosophy shaped the foundation of this study. By putting the proposed links to the test, the study aimed to quantify how the digital banking quality dimensions affect customer satisfaction and loyalty. Customers from a reputable private national bank in Sri Lanka who first began using internet banking in 2010 made up the study population. The sampling frame consisted of 3160 consumers who regularly use digital

banking services in Galle, Sri Lanka. The Sampath Bank account holders who regularly use digital banking services in the chosen branch were selected as the sample population. As a result, 300 digital banking users were chosen using the sample determination formula created by Kerjic & Morgan (1970). Data was collected from the 300 customers using a structured questionnaire by conducting personal interviews.

The questionnaire was divided into four sections. Part A of the survey was questions about the demographic characteristics of the respondents, while Part B included questions related to digital service quality and Part "C" included questions related to customer satisfaction. Further, Part "D" was about customer loyalty. Utilizing indicators, the study collected information on five digital banking service quality characteristics. A variety of dimensions were used to measure service quality (Table 1). In this study, the service quality was evaluated by developing a model based on the evidence of literature (Kumbhar,2011; Tharanikaran et al.2017). Moreover, a model was developed and every question to measure variables on the structured questionnaire was graded on a 7-point Likert scale, starting from strongly agree to strongly disagree. (1=Strongly agree, 2=Agree, 3=Slightly agree, 4=Agree nor Disagree, 5=Slightly Disagree, 6=Disagree, 7=Strongly Disagree)

Table 1: Measurements of the impact of digital banking quality dimensions customer satisfaction and customer loyalty

Variable	Indicator	Implications
Tangibility	(T1)- Digital equipment are up to date	(Rashed,2019)
	(T2) – The digital software works properly without causing breakdowns	(Stefano,2015; Akbaba ,2006)
	(T3)-The network of the website and app is well-equipped	(Shrestha,2021; Rashed,2019)
	(T4)- The physical layout of digital equipment is comfortable for customers to interact with the staff	(Shrestha,2021)
Privacy	(P1)-My personal information is secured and protected in my bank's site	(Sohail and Shaikh ,2008; Alawneh et al,2013)
	(P2)-E-Banking service provides high protection for my banking transactions	(Alawneh et al, 2013; Toor et al,2016).
	(P3)-The bank will not misuse my personal information	(Kim and Lim 2001; Yang et al. 2004; Parasuraman et al. 2005)
	(P4)-E-Banking service is secured and safe from any fraud or hacking	(Featherman and Pavlou 2003; Yang et al. 2004; Rod et al. 2009; Zarei 2010)
	(P5) -My E-Banking site does not share my personal information with other sites.	(Featherman and Pavlou 2003; Toor et al, 2016)
System Availability	(S1)-The web site contains useful help facility	(George, 2014 ;)
	(S2)-The service delivered through the internet banking pages is quick	(Franz, 2012; George, 2014)
	(S3)-The internet banking part of website is always available for business when the internet banking section promises to do something by a certain time	(Franz, 2012; George, 2014; Mazaheriasad, 2016)
	(S4)- Quickly complete transaction through the bank's website	(Franz, 2012; George, 2014)

Efficiency	(E1)-I find it easy and simple to use digital device for my banking purposes	(Sohail and Shaikh 2008; Mazaheriasad,2016; Alawneh et al, 2013).
	(E2)-Easy options for canceling transactions are provided	(Sohail and Shaikh 2008)
	(E3)-Internet Banking website of my bank always satisfy all my service needs	(Jun and Cai 2001; Yang et al. 2004)
	(E4)-The use of E-Banking services are time saving	Alawneh et al (2013)
Responsiveness	(RS1) - The bank offers all services within the promised deadlines.	(Shabani,2022; Parasuraman et al.,1988; George,2014)
	(RS2) – I feel safe conducting any transaction that I make within the bank.	(Shabani,2022; Parasuraman et al .,1988; George,2014)
	(RS3) - The advertisements for the services offered by the bank are real and show the reality.	(Shabani,2022; Parasuraman et al.,1988; George,2014)
	(RS4) - The bank always offers error-free services	(Shabani,2022; Parasuraman et al.,1988; George,2014)
Customer Satisfaction	(CS1)- Companies that implement digital CRM services always meet my expectations.	(Demokaan ,2022; Shrestha,2021; Sikdar et al,2015)
	(CS2)- I am satisfied with the service quality of companies implementing digital CRM.	(Demokaan ,2022; Shrestha,2021; Sikdar et al,2015)
	(CS3)-I recommend the companies that apply digital CRM to my friends.	(Demokaan ,2022; Shrestha,2021; Sikdar et al,2015)
	(CS4)- I plan to use companies that implement Digital CRM services	(Demokaan ,2022; Shrestha,2021)
Customer Loyalty	(CL1)-I visit this bank regularly	(Shabani,2022; Shrestha,2021)
	(CL2)-I rarely think of changing this bank to another.	(Shabani,2022; Shrestha,2021)
	(CL3)-I use this bank whenever I need to make a financial transaction.	(Shabani,2022; Shrestha,2021)
	(CL4)-I consider this bank as my favorite choice.	(Shabani,2022; Shrestha,2021)
	(CL5)-Whenever I want to make a financial transaction, this bank is my first choice.	(Shabani,2022; Shrestha,2021)

Source: Compiled from literature

Results & Discussion

The main objective of the current study was to determine how various aspects of digital service quality impact customer satisfaction and loyalty among Sri Lankan customers. Accordingly, data were analyzed using SPSS software. The validity and reliability were tested prior to the other analytical steps.

Test of Validity

Validity shows that the ideas and items used to measure the variable are more accurate. The validity might be the most crucial element of the quality of a test. Thus, validity was assessed before performing the analytical tests (Table 2).

Table 2: Summary of the measurement of validity

Variable	Chi-square value	Significance <0.05	KMO value>0.5	Composite reliability >0.7	Average variance extracted (AVE) >0.5	Discriminant Validity						
						Tangibility	Privacy	System availability	Efficiency	Responsiveness	Customer satisfaction	Customer loyalty
Tangibility	208.913	.000	.760	.702	.648	0.804						
Privacy	323.649	.000	.698	.721	.592	.466	0.769					
System availability	287.353	.000	.716	.890	.729	.328	.478	0.853				
Efficiency	692.259	.000	.873	.809	.675	.518	.538	.337	0.821			
Responsiveness	341.659	.000	.728	.704	.602	.579	.521	.327	.570	0.775		
Customer satisfaction	441.559	.000	.721	.699	.621	.431	.233	.455	.632	.632	0.778	
Customer Loyalty	875.632	.000	.755	.843	.664	.595	.553	.385	.598	.558	.664	.599

The sample adequacy for all the variables was met, the coefficients are larger than zero ($P > 0.05$), and convergent validity was utilized to assess the validity. Because ($CR > AVE$) and the shared variance values are lower than the average variance extracted (AVE), discriminant validity was also guaranteed. The criteria used were the Fornell-Larcker criteria. Hair et al. (2014) explained that the square root value of AVE must be greater than the correlation value between variables. The above table shows the results of discriminant validity.

Reliability Test

Table 3: Test of reliability

Variable	Cronbach's Alpha	Comment	No of Items
Tangibility	0.766	Accepted	4
Privacy	0.769	Accepted	5
System Availability	0.815	Accepted	4
Efficiency	0.849	Accepted	4
Responsiveness	0.754	Accepted	4
Customer Satisfaction	0.768	Accepted	4
Customer Loyalty	0.816	Accepted	5

Reliability was ensured since the Cronbach Alpha (α) value of each variable was higher than 0.7 (Table 3). Thus, it fulfilled the need of having the internal consistency of the measurement.

Correlation Analysis

Table 4: Correlation Analysis

		Tangibility	Privacy	System availability	Efficiency	Responsiveness	Customer satisfaction	Customer loyalty
Tangibility	Pearson Correlation	1	.652**	.539**	.525**	.478*	.846**	.390**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	300	300	300	300	300	300	300
Privacy	Pearson Correlation	.652**	1	.550**	.489**	.505*	.575**	.366**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	300	300	300	300	300	300	300
System availability	Pearson Correlation	.539**	.550**	1	.463**	.512*	.424**	.161**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.001
	N	300	300	300	300	300	300	300
Efficiency	Pearson Correlation	.525**	.489**	.463**	1	.549*	.433**	.515**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	300	300	300	300	300	300	300
Responsiveness	Pearson correlation	.478**	.505**	.512**	.549**	1	.407**	.316**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	300	300	300	300	300	300	300
Customer satisfaction	Pearson Correlation	.846**	.575**	.424**	.433**	.407*	1	.372**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	300	300	300	300	300	300	300
Customer loyalty	Pearson correlation	-.690**	-.366**	-.161**	-.215**	-.316*	-.372**	1
	Sig. (2-tailed)	.000	.000	.001	.000	.000	.000	
	N	300	300	300	300	300	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

All independent factors have a positive relationship with customer satisfaction and customer loyalty to digital banking in Sri Lanka (Table 4). System availability has the highest positive

correlation with customer satisfaction (Pearson correlation = 0.81) whereas responsiveness has the highest positive correlation with customer loyalty (Pearson correlation = 0.79).

Testing Hypothesis

Multiple regression analysis was used to test the first hypothesis.

(H1) - Digital service quality dimensions have a significant impact on customer satisfaction
Under the above main alternative hypothesis following alternative hypotheses were tested.

(H1_A) - Tangibility has a significant impact on customer satisfaction with digital banking

(H1_B) - Privacy has a significant impact on customer satisfaction with digital banking

(H1_C) - System availability has a significant impact on customer satisfaction with digital banking

(H1_D) - Efficiency has a significant impact on customer satisfaction with digital banking

(H1_E) - Responsiveness has a significant impact on customer satisfaction with digital banking

Multiple linear regression analysis was used to test the research hypothesis.

Table 5: Model summary

Model summary				
Model	R	R ²	Adjusted R ²	Std. error of the estimate
1	.768 ^a	.772	.774	.36750

^a Predictors: (Constant), Tangibility, Privacy, System availability, Efficiency, Responsiveness, Customer satisfaction.

Table 5 shows the summary of the regression analysis. The explanatory power (R²) illustrates the degree to which extent the variance of the dependent variable is explained by the independent variables. Looking at adjusted R², it can be concluded that 76% of the mediating variable, customer satisfaction is explained by the independent variables.

Table 6: ANOVA Table

ANOVA ^a						
Model		Sum of squares	Df	Mean square	F	Sig.
1	Regression	80.386	5	12.077	42.530	.000 ^b
	Residual	136.780	615	.306		
	Total	197.186	620			

^a Dependent variable: Customer satisfaction

^b Predictors: (Constant), Tangibility, Privacy, System availability, Efficiency, Responsiveness

ANOVA determines whether the developed model is significant or not (Table 6). Accordingly, it can be concluded that the developed model in Table 5 is significant since the $P < 0.05$.

Table 7: Coefficient of the multiple regression analysis

Model		Unstandardized		Standardized	t	Sig.
		coefficients		coefficients		
		B	Std. Error	β		
1	(Constant)	1.048	.162		6.681	.000
	Tangibility	.274	.059	.270	2.957	.015
	Privacy	.452	.058	.450	2.613	.029
	System availability	.269	.060	.237	4.486	.000
	Efficiency	.416	.050	.414	8.402	.067
	Responsiveness	.358	.112	.346	5.672	.000
	Customer satisfaction	.240	.056	.238	.721	.000

Multiple regression analysis was conducted to test how digital banking quality dimensions influence customer satisfaction with digital banking in Sri Lanka. The multiple models can be mentioned as $Y = 1.048 + 0.270 (X1) + 0.450(X2) + 0.237(X3) + 0.346 (X5)$ where it revealed tangibility, privacy, system availability, and responsiveness have a positive impact towards customer satisfaction with digital banking and only efficiency was not significant since the P value of efficiency is greater than 0.05. Accordingly, H1_A, H1_B, H1_C, and H1_E are accepted, and H1_D is rejected.

Rejection of Hypothesis-H1_D

Contrary to the literature, the present findings revealed that efficiency as a quality dimension has no significant impact on customer satisfaction. Thus, H1_B was rejected for not meeting the expected criteria. Moreover, Wu et al. (2012) and Sakhaei, Afshari & Esmaili (2014) proved that efficiency is a worthwhile factor that shapes customer satisfaction. However, the present result was contradictory to the findings in the past literature, and it is interesting to find why efficiency is not a factor that decide customer satisfaction.

Simple linear regression analysis

Simple linear regression analysis was used to examine the 2nd and 3rd hypotheses.

H₂. Customer Satisfaction has a significant impact on customer loyalty

Table 8: Model Summary

Model Summary				
Model	R	R ²	Adjusted R ² s	Std. Error of the estimate
2	.623 ^a	.388	.386	.828

^a Predictors: (Constant), customer satisfaction

The above model (Table 8) shows the summary of a single regression analysis. The explanatory power (R²) illustrates the degree to which extent the variance of the dependent variable is

explained by the independent variable. Looking at adjusted R^2 , it can be concluded that 38% of the variance of the dependent variable, customer satisfaction is explained by the independent variable digital banking quality dimensions.

Table 9: ANOVA Table

ANOVA ^a						
Model		Sum of squares	df	Mean square	F	Sig.
2	Regression	122.047	1	122.047	178.024	.000 ^b
	Residual	192.644	281	.686		
	Total	314.692	282			
^a Dependent variable: customer loyalty						
^b Predictors: (Constant), customer satisfaction						

ANOVA test was used to determine whether the regression model is significant, if the output significance value is less than 0.05 at a 95% confidence level. Since the significance value is less than 0.05, it can be concluded that the fitted model of this study is significant.

Table 10: Coefficients of the Simple Linear Regression

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	β		
2	(Constant)	2.645	.200		13.217	.000
	Customer satisfaction	.497	.037	.623	13.343	.000
^a Dependent variable: Customer loyalty						

Coefficient (β) for customer satisfaction is 0.497. It indicates that increasing one unit of customer satisfaction causes an increase in customer loyalty by 0.497 units while other independent variables remain constant. The p value is 0.000 at 95% of confidence level. The model can be written as $Y=2.645+0.497(x_2)$

Moreover, the third alternative hypothesis was tested using the simple linear regression analysis.

H₃: Digital service quality dimensions have a significant impact on customer loyalty

Table 11: Model Summary

Model Summary				
Model	R	R ² s	Adjusted R ² s	Std. Error of the estimate
2	.623 ^a	.388	.386	.82799
^a Predictors: (Constant), Digital banking quality dimensions				

Table 11 shows the summary of single regression analysis. The explanatory power (R^2) illustrates the degree to which extent the variance of the dependent variable is explained by the independent variable. Looking at adjusted R^2 , it can be concluded that 38% of the variance of Dependent

variable, customer loyalty is explained by independent variable Digital service Quality Dimensions.

Table 12: ANOVA Table

		ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	122.047	1	122.047	178.024	.000 ^b
	Residual	192.644	281	.686		
	Total	314.692	282			
a. Dependent Variable: Customer loyalty						
b. Predictors: (Constant), Digital banking quality dimensions						

ANOVA test was used to determine whether the regression model is significant. If the output significance value is less than 0.05 at a 95% confidence level, the model was considered as significant. Since the significant value is less than 0.05 (Table 12) it was concluded that the fitted model of this study is significant.

Table 13: Coefficient Table

		Unstandardized coefficients		Standardized coefficients	t	Sig.
Model		B	Std. Error	β		
2	(Constant)	2.645	.200		13.217	.000
	DBQD	.497	.037	.623	13.343	.062
Dependent variable: Customer loyalty						

According to the coefficients (Table 9), the 3rd alternative hypothesis is not significant since it proves that the P value of digital banking quality services is higher than 0.05. Accordingly, it was concluded that digital banking quality dimensions have no impact on customer loyalty.

To test the mediating effect Hayes – the Process Macro method was developed.

H₄ - Customer satisfaction works as a mediator between digital banking quality dimensions and customer loyalty.

Table 14: Total effect of X on Y

Model Summary						
R	R-sq.	MSE	F	df1	df2	p
.1711	.299	.4351	11.1586	1.0000	429.0000	.0009

Outcome variable: Customer loyalty

The total effect model depicted in Table 14 indicates that the R² is 29% which indicates that the 29% of the variance of the dependent variable is explained by the independent variables, customer satisfaction and digital banking quality dimensions.

Table 15: Total model

	Model					
	coeff	se	t	p	LLCI	ULCI
constant	1.742	.177	9.85	.000	1.394	2.089
Digital Quality	.483	.055	3.340	.0609	.0782	.380
Cus. satisfaction	.348	.050	4.678	.004	.157	.412
Notes: The standardized coefficient of digital quality is .493						
The standardized coefficient of customer satisfaction is .334						

The Total model (Table 14) indicates that the standardized coefficient of digital banking quality dimensions (Independent variable) is 0.483, which does not lie between the lower level confidence interval, 0.078 and upper level of 0.380 and this is not significant since P value is not less than 0.05. Further, it concludes that DBSQ factors directly cannot impact the level of customer satisfaction. However, the standardized coefficient of customer satisfaction is 0.348 which does not lie between 0.157 and 0.412 where the P value is 0.043, which is less than 0.05. Hence, it can be concluded that customer satisfaction has a positive impact on customer loyalty. Accordingly, this mediating model illustrates that customer satisfaction may work as a mediator between digital quality dimensions and customer loyalty.

Total, direct, and indirect effects of X on Y

Table 16: Total effect of X on Y

Effect	se	t	p	LLCI	ULCI	ccs
.4058	.0547	3.340	.001	.105	.490	.161

The total effect (Table 16) indicates the cumulative effect of direct and indirect effect and it lies between the upper, 0.490 and lower level, 0.105 confidence intervals which is significant since (α) value is less than 0.05. Accordingly, the total effect is positive even when the direct effect is not significant. The reason is that the indirect effect is greater and significant under a 5% significance level.

Table 17: Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI	ccs
.112	.053	2.092	.087	.016	.207	.098

The direct effect of X on Y in Table 17 depicts that digital service quality has a 27% effect ($0.112/0.405 \times 100$) on customer loyalty. However, since the α value is higher than 0.05, the direct effect cannot be validated, and it concludes that digital banking quality dimensions cannot directly impact on customer loyalty.

Table 18: Indirect effect of X on Y

	Effect	Boot SE	Boot LLCI	Boot ULCI
DBSQ	.294	.0434	.210	.380

The indirect effect of DBSQ on customer loyalty in Table 18 depicts that DBSQ has a 73% indirect effect (DBSQ impacts customer loyalty through customer satisfaction) on the dependent variable, customer loyalty. Accordingly, it concludes that customer satisfaction is working as a powerful mediator that connects DBSQ and customer loyalty. More importantly, it concludes that the

mediating variable, customer satisfaction is a strong mediating variable since it strongly enhances the total effect.

Table 19: Completely standardized indirect effect(s) of X on Y:

	Effect	Boot SE	Boot LLCI	Boot ULCI
Similar	2595	0404	.182	.541

Notes: **. Level of confidence for all confidence intervals in output: 95. %
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

In addition to the above clarifications, the above Table 19 illustrates that DBSQ has a standardized effect of 0.259 which is 73% and it concludes that brand attitude is a strong mediator.

Discussion

The results of the study were justified by two previous research studies. Amin (2016) revealed that tangibility consists with several factors such as personal needs, user-friendliness, site organization and efficiency of websites. Moreover, it was clarified that tangibility helps in maintaining contact between the employee and customer, which ultimately helps enhance the level of customer satisfaction (Lau et al. 2013). Accordingly, Amin (2016) and Lau et al. (2013) found that tangibility has a positive relationship with customer satisfaction, which is similar to our findings. In our study, it was identified that tangibility had a significant positive impact on customer satisfaction. Thus, H1_A was accepted. More interestingly, Ling et al. (2015); Gupta & Bansal (2012) have identified privacy has a substantial effect on customer satisfaction. Our study had the same results since it revealed that privacy is a significant factor in customer satisfaction. Hence, H1_B was accepted. Further, the system availability on customer satisfaction showed a positive significant impact on customer satisfaction by 23.7 percent ($\beta = .237$) and significance at 95% confidence level. Thus, the H1_C was accepted, and this finding is justified by the previous literature (Tharanikaran et al., 2017).

More importantly, present study revealed that responsiveness had a significant impact on customer satisfaction (α value is 0.00) which is less than 0.05. Further, our findings were justified by the earlier findings in where Saha & Zhao (2005) found that customer satisfaction is positively affected by responsiveness as a versatile e-service quality dimension in internet banking. Additionally, Sharma & Malviya (2014), Malik et al. (2011) have identified responsiveness as one of the significant factors that effect on customer satisfaction. Afrin (2012) stated that customers prioritized responsiveness as the most important factor of service. Accordingly, H1_A, H1_B, H1_C and H1_E were accepted.

According to the findings of our study, customer satisfaction has a significant impact on customer loyalty. Many past studies with our findings. Haq (2012) investigated the relationship between customer satisfaction and customer loyalty. Results confirmed that customer loyalty and customer satisfaction are directly and strongly related. Further, Aprilia et al, (2020) emphasized that the higher the customer satisfaction, the higher the loyalty to the brand. Accordingly, H2 was accepted since customer satisfaction had a considerable impact on customer loyalty.

Research conducted by Ali & Reza (2015) on the influence of service quality on customer satisfaction and loyalty in Islamic banks in Pakistan concluded that customer satisfaction and

loyalty are influenced by the quality of service. Moreover, Kamran et.al (2017); Breugelmans (2015); Key & Alejandro (2015); and Liu & Mattila (2016) concluded that customer loyalty is highly impacted by quality service factors whereas Kadimpully et.al (2015) concluded that customer loyalty depends on the effectiveness and the efficiency level of quality factors. When evaluating the influence of digital service quality dimensions, our study displayed that DBSQ factors have no significant impact on customer loyalty. Our findings are very interesting since these findings contradict the findings in the literature. Surprisingly, our study proves that even though digital service quality dimensions can influence customer satisfaction, it cannot build up a considerable impact to generate customer loyalty.

The fourth alternative hypothesis (H4) of our study was that customer satisfaction mediates the relationship between digital service quality dimensions and customer loyalty. Accordingly, our study proved that customer satisfaction works as a strong mediator that connects digital service quality. These findings agree with the conclusions suggested by Solimun and Fernandes (2018). Their findings further stressed that effect of service quality on customer loyalty can be mediated by customer satisfaction. Moreover, studies conducted by Caruana (2002), Zeitham et al. (1998), and Cronin et al. (2000), stated that customer satisfaction tends to be a mediator in the relationship between service quality, service orientation, and the marketing mix strategy and customer loyalty. Hence, the study concluded if it needs to enhance customer loyalty it should be highly concerned with generating customer satisfaction first.

Conclusions

Consumer behavior is a concept coming from the behavioral approach (1997) and customer satisfaction is a concept that can help organizations expand and keep customers happy while also optimizing the organizational needs. Customer expectations are a determining factor in customer satisfaction. According to Gilbert & Veloutsou (2007), an expectation is a preconceived notion or belief about the delivery of a service that acts as a benchmark or reference for evaluating the performance of a product. Customer satisfaction is a tried-and-true idea when it comes to consumer behavior, notwithstanding its age (Joudeh & Dandis, 2018). The findings of this study have shown that the customer satisfaction idea is overwhelmingly applicable and appropriate for the study, allowing us to choose appropriate solutions. Numerous studies have been conducted on several independent factors that influence customer satisfaction. (Almohaimmed, 2020; Oladipupo, 2021). However, the model was created using internet plus digital banking service quality elements because the research context is digital service quality dimensions. The study has further developed the research model based on the information collected from literature based on empirical evidence and appropriate arguments (Eze, Ismail, Sin, & Siang, 2008; Joudeh & Dandis, 2018). Except for efficiency, all other variables showed a significant positive association with the dependent variable, customer satisfaction. The study concludes that customers do not worry about efficiency because digital devices operate at a fast rate thanks to internet service providers, and people in urban areas typically have access to fast internet speeds when using digital services. However, the study suggests that more qualitative studies should be done in this area to understand the issues in this digital environment. More importantly, the study revealed increasing customer satisfaction positively impacts customer loyalty which is quite significant when it comes to digital services as word of mouth generates positive and negative feedback and recommendations for potential customers while being loyal to their intended brand. Surprisingly,

this study proves that the digital service quality factors have no impact on customer loyalty which is contradictory to the findings in the literature. This proves that even digital service quality factors help to generate customer satisfaction that would not generate customer loyalty at once before creating customer satisfaction. This finding gives some interesting suggestions for future studies. Moreover, the mediating effect further elaborates that customer loyalty is only generated if customers are satisfied. Hence, banks should win the loyalty of the customers by satisfying them.

The study of the impact of digital service quality factors on customer satisfaction in the Southern province, Galle district of Sri Lanka provides information for managerial decision making. According to the findings of the study, there is a significant impact of DBSQ dimensions on customer satisfaction. Accordingly, findings have proven that there is a positive impact of digital banking quality factors (tangibility, responsiveness, system availability, and privacy) except efficiency on customer satisfaction. Moreover, the study proved that if a customer is satisfied it would lead to customer loyalty. However, the study further elaborated that the digital banking quality factors do not have a direct impact on customer loyalty before a customer is satisfied. It is a very important to understand that only a satisfied customer will be loyal to the product. Therefore, managers can focus on each dimension to get an idea about the behavior of those variables toward customer satisfaction and customer loyalty, which will help to determine remedies for the issue of switching behavior of customers and to attract and retain (Dharmadasa & Gunawardhana, 2017). Furthermore, with the prevailing economic condition in Sri Lanka, most people are working through the online platform for ease of their day-to-day life. Therefore, the number of digital banking customers are growing. With the busy lifestyle, managers should focus highly on how to attract and retain new customers by taking full use of the competitive advantage of digital platforms. Moreover, the study findings contribute to enriching the theories and emphasize that banks should be concerned about customer expectations and specially concerned about areas such as cyber security and customer support systems

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