

# Customer's Perspectives on Internet Banking based on E-S-Qual Model

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## **Abstract**

*In Sri Lanka, the credit growth the banking system improved in 2020 compared to 2019 regardless of the adverse economic effects caused by the ongoing pandemic and nationwide and district-wide lock-down periods. A significant increase was noticed in the usage of internet banking as people were considerably confined to their homes. Consequently, this study focuses on recognizing the view of customers on internet banking based on the E-S-Qual model. This model was established to measure the quality of e-service. Both exploratory and confirmatory factors analyses are classified into three independent factors namely, (i) System availability & fulfilment (ii) Efficiency and (iii) Privacy as common factors of internet banking. Respondents between the ages of 20 to 30 have shown positive perceptions on these three internet banking factors according to the cross-tabulation results. It was also revealed that the female respondents show a higher positive perception (76.9%) in comparison to males (23.1%) on the privacy of internet banking.*

**Keywords:** *Customer Perception, E-S-Qual Model, Internet Banking*

## **1. Introduction**

Information technology is taking over modern-day industries, including the banking sector. The internet provides a convenient channel for people to access services and for businesses to connect with their customers, especially since the use of personal computers to access the internet and the World Wide Web have risen significantly. The trend of providing services through the internet has significantly risen in recent times. This kind of banking is known as Internet Banking (Altun, 2012) (Semantics). Internet banking originated in the early 1990. This beginning of Internet Banking created a phenomenal system, Internet banking (Semantics). This system allows banking customers

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to access their accounts, carry out transactions or simply obtain banking information through the internet (Rajesh, 2007).

The main contributor to economic growth in Sri Lanka is the service sector. The financial institutions mainly dominate the service sector. The financial sector is accountable for 72.5% of the total assets within the financial system as per the end of 2020 data (Central Bank of Sri Lanka - CBSL, 2020). By the end of the year 2020, the banking system of Sri Lanka consisted of 24 Licensed Commercial Banks (LCBs) and 6 Licensed Specialized Banks (LSBs), adding up to 30 banks in total. The banking sector promotes financial inclusion by widening banking services and the banking network, supporting the financial intermediation of the economy. In 2020, due to the restrictions imposed on travelling to banks to obtain their services, banks introduced products and services accessible through technology-based mediums to facilitate financial inclusion (CBSL, 2020). In Sri Lanka, banking customers are moving steadily towards internet banking due to the on-going pandemic. According to the Central Bank of Sri Lanka (2020), significant growth was seen in internet usage as a result of travel restrictions and work-from-home engagements imposed due to the COVID-19.

Thus, with the rise of internet banking, there is a clear requirement to study how consumers evaluate e-services and develop e-loyalty. The main determinant of success or failure of e-commerce is the quality of service. As practitioners focus mainly on improving usability automated services have lagged behind (Santos, 2003). In order to reap the benefits of internet banking to promote economic growth of a country, Nupur (2010) highlighted the importance of better quality and increased internet access, designing and developing new features for internet banking, developing a solid legal and regulatory framework and promoting domestic internet usage. The popularization of internet banking has led to the creation of service quality (SERVQUAL) dimensions to measure customer satisfaction. SERVQUAL developed by Zeithaml (1988), is extensively utilized to measure customer satisfaction. According to Mols (2000), the wide use of SERVQUAL results from the belief that home banking will bring a drastic change in how banks maintain their relationship with customers. The E-S-QUAL model proposed by Parasuraman et al. (2005) is a more refined and extended version of SERVQUAL. According to this model, efficiency, fulfilment, system

availability and privacy are the four parameters to measure the quality of e-services.

**Efficiency** – The main advantages of online shopping are perceived to be saving time and convenience; thus, efficiency is a vital factor in e-commerce (Ranganathan & Ganapathy, 2002). Efficiency, in simple terms, is the speed and the ease with which the site can be accessed.

**Fulfilment** – The extent to which the offers on order delivery or the availability of items are fulfilled. Since maintaining promises made to customers and delivering accurate items are explicitly linked with customer satisfaction, fulfilment is a vital deciding factor of the quality in an online shop (Yang & Fang, 2004).

**System availability** – Related to the proper technical functioning of the online site. Customers are often disappointed by missing links or buttons that do not work. Then the retailer loses their opportunity to build customer loyalty (Wachter, 2002).

**Privacy** – The extent to which the site protects customer information. The risk of maltreating customer information stops people from purchasing goods and services online. However, online retailers are becoming more aware of the importance of establishing consumer privacy (Ranganathan & Ganapathy, 2002). Privacy is a strong determinant of customer intention to purchase goods and services online (Loiacono et al., 2002), of customer satiation (Szymanski & Hise, 2000) and the quality of the overall site (Yoo & Donthu, 2001).

Consequently, this study's objective is to determine customers' perspective on internet banking based on E-S-QUAL model.

## **2. Literature Review**

The core capabilities of banks: products, channels and advice are promoted through the internet. Then the banks entered the market of e-commerce as providers of their products. Some banks did not establish internet banking initially as they failed to see the benefits it brought. According to Polatoglu and Kin (2001), the average transaction cost of internet banking is a mere one-twentieth of a teller transaction.

According to Rajesh (2007), the use of internet banking was stagnant during 1996 and 1998 as less than 10% of the market was using the service.

According to Ho and Wu (1999), five factors that determine customer satisfaction. These factors are: logistic support, technical characteristics, features of information, presentation of the home page and product personality (Ho & Wu, 1999). Due to the lack of confidence in technology-based services, the utilization of internet banking has been rejected by most customers (Ho & Wu, 1999).

Situating service quality and customer satisfaction within the internet banking domain introduces a whole perspective to finding answers to the research question of customer perspective on internet banking in Sri Lanka. Customer's perception of internet banking, together with preferred service quality, are major determinants of a bank's success (Gupta & Bansal, 2012). Customer satisfaction, in simple terms, is meeting the level of expectations of a customer for a given good or service (Afrin, 2012). Customer satisfaction is considered a key factor in the field of internet banking (Devi & Revathy, 2011). Establishing a high-service quality is a key contributor to generating high levels of customer satiation. As customer satisfaction is vital to establishing customer retention and profitability of the firm, the final goal of all firms is to improve the level of customer satisfaction (Sharma & Malviya, 2014). Many studies have been conducted to measure the impact of service quality on customer satisfaction in a typical banking environment; however, the studies that focus on the impact of service quality on customer satisfaction in the e-banking sector are limited in number (Saha & Zhao, 2005). According to Zeithaml, et al., (2000), more research needs to be conducted on the quality dimensions of e-services. Consequently, this study attempts to identify customers' perspectives on internet banking.

### **3. Methodology**

Banking customers whose bank provides e-banking services and who have access to the internet and are proficient in utilizing the internet were the target population. The sample that was taken to conduct the survey included customers from the Western Province. Hundred banking customers from different banks and diverse localities were surveyed. Out of the 100 respondents, 85 replied to the online questionnaire. The profile of the respondents who participated in the study is demonstrated in Table 1.

Table 1: Respondent’s profile

Characteristics	Categories	N	Percentage
Gender	Male	36	58
	Female	49	42
Age	20 – 30 years old	38	45
	30 – 40 years old	32	38
	More than 40 years old	15	18
Education Level	A/L	21	25
	First Degree	22	26
	Postgraduate Degree	13	15
	Professional Qualification	29	34
Type of the Bank	Government	10	12
	Private	56	66
	Semi-government	19	22

Source: Survey Data, 2022

The conceptual research model is developed based on the E-S-QUAL model, proposed by Parasuraman et al. (2005). The conceptual framework of the study can be illustrated based on that model. The study measures efficiency fulfilment, system availability and privacy of internet banking under 20 dimensions. Explanatory and Confirmatory factor analyses were carried out to achieve the objective of this study.

#### 4. Results and Discussion

##### 4.1 Use of Exploratory Factor Analysis (EFA)

The significance of Bartlett’s Test of Sphericity (Table 2) ratified that the observed correlation matrix is significantly different from the identity matrix, and thus, common factors due to inter-correlation can be investigated.

Table 2: Results of adequacy statistics for FA

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</b>		<b>0.854</b>
Bartlett's Test of Sphericity	Approx. Chi-Square	121.555
	DF	21
	Sig.	0.000
Cronbach’s alpha coefficient		0.931

Source: Survey Data, 2022

Results in table 2 also indicated that the KMO statistic (0.854) is greater than 0.6, confirming that data satisfying sample adequacy for EFA. Cronbach’s alpha coefficient of 0.931 confirmed that there is good internal consistency in data. All these results confirmed that the data set is suitable for FA.

**4.2 Eigen Analysis for Correlation Matrix Analysis**

Eigen analysis for the correlation matrix indicated that four eigenvalues are greater than one. Thus, according to Kaiser’s rule (Kaiser, 1960), three factors can be used to explain the observed correlation matrix of twenty variables. However, the variable “The bank’s site gives information on command rather than all at once” is not loaded highly in the rotated factor loadings. Thus initial 20 variables were reduced to 19. According to the newly rotated factor analysis using Principal Component Extraction Method (PCF), the initial 19 variables can be reduced to a 3-D system with 93% of the total observed variance.

**4.3 Extraction and Rotation of Factors**

The factors were extracted using the PCF method and were rotated using Varimax. The corresponding factor loadings are shown in Table 3.

Table 3: Factor loadings of the 3- factor model (PCF & Varimax)

Variables	Factors		
	1	2	3
The site is simple to use	-.078	<b>.975</b>	-.122
requires minimum of information to be input by the customer	-.078	<b>.975</b>	-.122
The speed of login of your account is fast	.572	<b>.812</b>	.114
The site does not confuse you in what you want to do with the pages	<b>.878</b>	.364	.262
The bank’s site does not have fine print that is difficult to read and hard to find	<b>.878</b>	.364	.262
The bank’s web site makes easy to get anywhere	.018	<b>.973</b>	-.218
The bank’s web site enables to complete a transaction quickly	.296	<b>.829.</b>	.096
The bank’s web site delivers services when promised	<b>.977</b>	-.147	-.007
Records at bank’s web site are always accurate	.673	.150	<b>.716</b>

Bank's web site makes accurate promises about delivery of service	<b>.840</b>	-.397	.176
Bank's web site promptly informs about important situations (payments, balance and etc.)	-.327	-.329	<b>.882</b>
The bank's web site is always available for business	<b>.789</b>	.245	.563
The bank's web site launches and runs right away	.639	-.323	<b>.698</b>
The bank's web site does not crash	.018	<b>.973</b>	-.218
Pages at the bank's web site do not freeze after enter order information	<b>.878</b>	.364	.262
The bank protects information about the web-shopping behavior	.153	-.121	<b>.981</b>
The bank does not share the personal information with other sites	.258	-.406	<b>.876</b>
The bank's web site protects information about the credit card	.258	-.406	<b>.876</b>
The bank's site does not use banner ads with cookies to collect	<b>-.778</b>	-.599	-.052
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.			

a. Rotation converged in 5 iterations.

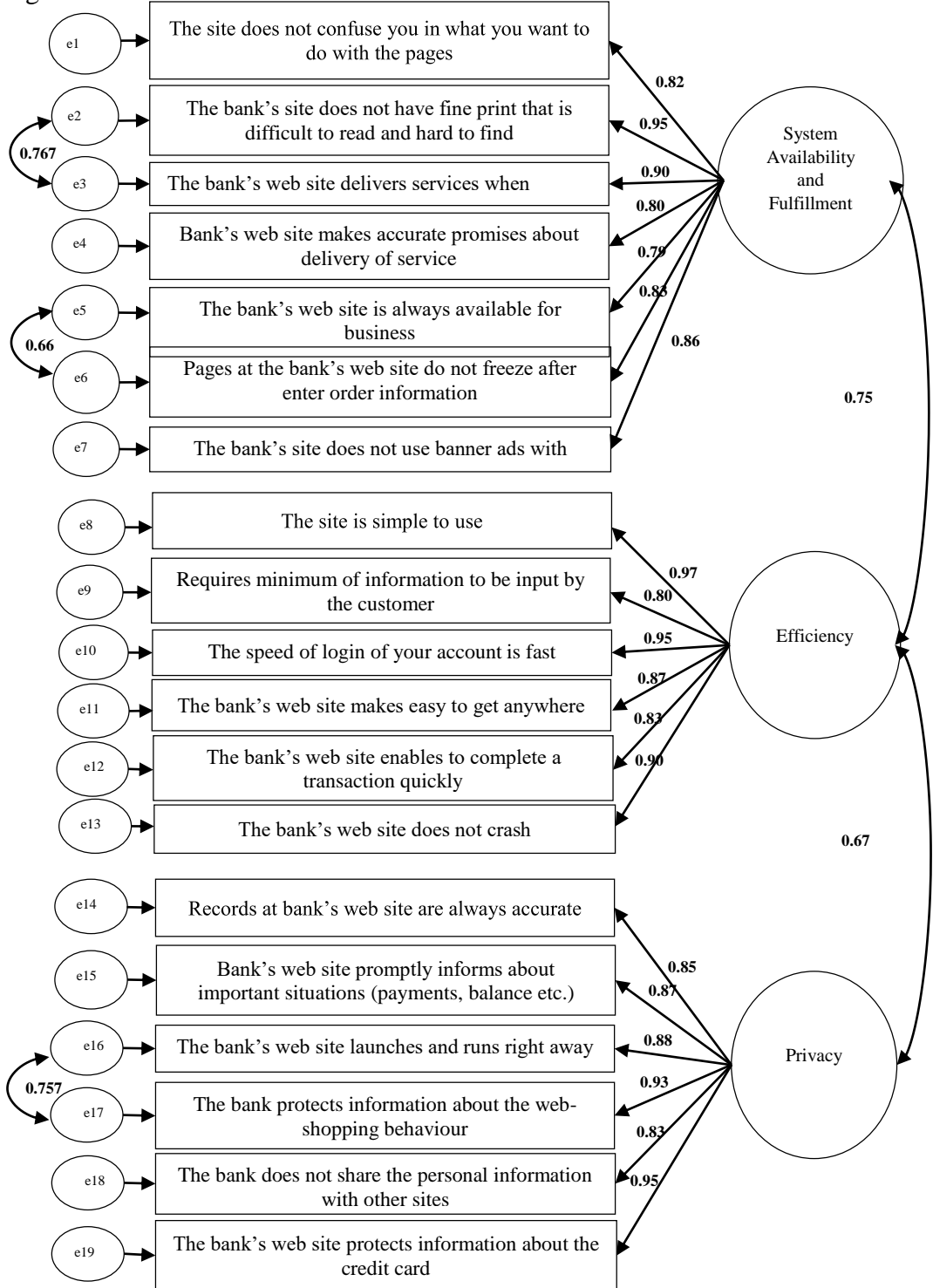
Source: Survey Data, 2022

The three factors were named as, “system availability and fulfillment”, “efficiency” and “privacy”.

#### 4.4 Confirmatory Factor Analysis (CFA)

In order to further justify the structure of the three factors identified using EFA, CFA was also carried out and results are shown in figure 1.

Figure 1: Standardized Parameter Estimates for 2 - Factor CFA



Source: Survey Data, 2022



According to figure 1, all the variables of the three factors indicated high loading values ( $> 0.8$ ). This justified the validity of the variables selected for the three factors using EFA. The statistics of the model justification are shown in table 4.

#### ***4.5 Evaluating Model Fit***

The results model chi-square statistic ( $\chi^2_8 = 253.369$ ,  $p = 0.003$ ) is significant, confirming that the hypothesized model significantly fits the data. As this test is sensitive to sample size various goodness-of-fit indices, have been suggested for the evolution of the model fit and some of the statistical indices generated from SPSS are shown in table 4.

Table 4: Model fit summary of finalized model

RMSEA	.050
NFI	.798
NNFI (TLI)	.886
CFI	.848
GFI	.745
AGFI	.864
PGFI	.205
PNFI	.486

*Source: Survey Data, 2022*

RMSEA is close to 0. All other indices in table 4 are higher than the critical value of the corresponding indices confirming that the hypothesized model fits the data adequately.

#### ***4.6 Association between Characteristics of Respondents and Three Factors***

The results of table 5 revealed that when the age of the respondents is increased, the positive perception on the system's availability and fulfilment, efficiency and privacy on internet banking is gradually decreased. This meant that respondents aged 20 to 30 have a high positive perception on the three factors than the other age groups.

Table 5: Association between age of the respondents and three extracted factors

Factor	Age			
		20 - 30	30 - 40	More than 40
System availability and fulfilment	N	38	14	14
	%	57.6%	21.2%	21.2%
Efficiency	N	38	14	14
	%	57.6%	21.2%	21.2%
Privacy	N	22	7	10
	%	56.4%	17.9%	25.6%

*Source: Survey Data, 2022*

Table 6: Association between educational qualification of the respondents and three extracted factors

Factor	Education qualification				
		A/L	Professional qualification	First degree	Postgraduate degree
System availability and fulfilment	N	12	24	20	10
	%	18.2%	36.4%	30.3%	15.2%
Efficiency	N	12	24	20	10
	%	18.2%	36.4%	30.3%	15.2%
Privacy	N	7	15	15	2
	%	17.9%	38.5%	38.5%	5.1%

*Source: Survey Data, 2022*

As mentioned in table 6, respondents with professional qualifications and a first degree have the highest positive perception on the three internet banking factors, respectively. Moreover, respondents with a postgraduate degree have the least positive perception than the other respondents about internet banking.

According to the results in table 7, male respondents have the highest positive perception on system availability, fulfilment and efficiency of internet banking. Furthermore, results also revealed that female respondents have the highest positive perception on the privacy of internet banking.

Table 7: Association between gender of the respondents and three extracted factors

Factor	Gender	
	Male	Female
System availability and fulfilment	N	36
	%	54.5%
Efficiency	N	36
	%	54.5%
Privacy	N	9
	%	23.1%

Source: Survey Data, 2022

Table 8: Association between Type of bank of the respondents and three extracted factors

Factor	Type of Bank	
	Government	Private
System availability and fulfilment	N	10
	%	15.2%
Efficiency	N	10
	%	15.2%
Privacy	N	0
	%	0.0%

Source: Survey Data, 2022

When considering the type of bank, table 8 indicated that private banks have the highest positive perception on internet banking factors. Also, it is evident that none of the respondents have a positive perception on the privacy of internet banking in government banks.

### 5. Conclusions

Of the 19 observed variables, three common internet banking factors were identified under the PCF and Varimax orthogonal rotations. CFA further evidence regarding the three factors suggested model concerning the factors identified via EFA. The three factors identified are (i) System availability & fulfilment, (ii) Efficiency, and (iii) Privacy. Further, cross-tabulation revealed that private banks have a high positive perception on service quality of the internet banking than government banks. Moreover, there is no considerable difference between males and females in their perception of system availability, fulfilment and efficiency on internet banking. However, female respondents have a higher positive perception on the internet banking privacy

than males. Also, it is evident that respondents with an education level up to A/L and respondents who possessed a postgraduate degree have the least positive perception on internet banking factors, while respondents aged 20-30 have high a positive perception on the three factors.

### **5.1 Recommendations**

Customers always expect economical and time-saving methods. To meet these requirements, banking websites should perform efficiently.

Lower rates and charges are an effective way to attract new customers and satisfy existing customers.

Banks must provide due attention and assistance to help customers adapt and become familiar with internet banking.

Banks should spread awareness and knowledge on internet banking and its benefits among their banking customers.

Banks should cater convenient services for customers of varied income levels by separately identifying the needs and wants of each income strata.

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