

## **IMPACT OF INTERNET BANKING SERVICE QUALITY ON CUSTOMER SATISFACTION: AN EMPIRICAL INVESTIGATION OF CUSTOMERS IN SRI LANKA**

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### **Abstract**

Internet banking is considered as one of the major services introduced by the banking sector recently to improve the satisfaction level of the customers providing more efficient and comfortable services. However, there is no sufficient empirical evidences whether the internet banking service qualities improve the customer satisfaction. Therefore, this study attempted to explore how internet banking service qualities affect the customer satisfaction? The data were collected from the 285 customers who are using internet banking services in Bank of Ceylon, Panadura Branch for the structured questionnaire conducting face-to- face interviews. Data were analyzed using Partial Least Squares-Structural Equation Modelling.

The study tested seven hypotheses between seven dimensions of internet banking service qualities and

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### **Keywords:**

Bank of Ceylon;

Customer Satisfaction;

Internet Banking;

Service Quality.

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customer satisfaction. The results revealed that contact, efficiency, system availability and compensation have significant positive impact on customer satisfaction while fulfilment, privacy and responsiveness did not have significant effect on the level of customer satisfaction. Results further revealed that the contact and efficiency are the most effected factors which improve the satisfaction level of the customers who are using internet banking. The empirical evidences helped to understand the relative efficacy of the service qualities of internet banking which will help policy makers to develop quality dimensions to improve customer satisfaction in order to expand the customer retention of banking sector.

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## **1. Introduction**

The banking sector in Sri Lanka has been started since the 1939 and since then banking sector has been adopt many advances in computing (Jayamaha, 2008). Traditionally, all the banking activities were operated by manually and always customers had to visit to the branch (Saha & Zhao, 2005). In 1999, vast change taking place in the local banking sector with the started offering transactional level Internet Banking Services (IBS). Many factors influence bank sector to evaluate their technology and assess their electronic commerce and internet banking such as competitive costs, customer service, increase in education and income level of customers, etc. (Khan & Mahapatra, 2008). Banking sector tend to introduce IBS as a tool of current customers who are continuously use banking services and also to attract new customer base (Nimako, Gyamfi & Wandaogou 2013). Internet banking facilitates the account transfers, balance inquiries, bill payments, account information and stopped payment request. Mainly banking sector provides two ways of internet banking: banking sector provides their existing physical banking services through its website and offers internet banking in addition to the traditional

delivery channels. The others way of internet banking is internet-only bank, but the most common and popular way is the existing physical bank offering IBS (Gupta & Bansal, 2012).

Internet banking allows banking from anywhere and anytime through the bank's website (Khan & Mahapatra, 2008; Devi & Revathy, 2011). Compared to the traditional banking, internet banking involves non-human interactions between customers and online bank information system (Devi & Revathy, 2011). Providing high quality services to the customers is one of the main aspect of any institutions because service industry are consider as the customer driven and the survival of those service industries basically based on quality of the services provided by them (Afrin, 2012; Khan & Mahapatra, 2008). The banking sector consider as the major stakeholder in service sector so the customers are the major party in banking industry (Islam & Niaz (2014)). The quality of customer service can be define as how well service provided by the banks meeting the expectation of the customers (Afrin, 2012). The banks are pay more attention on service quality to gain competitive advantage (Lau, Cheung, Lam & Chu, 2013). With the introduction of internet banking the traditional customer services provide by the banks move to new dimension of service quality (Worku, Tilahun & Tafa, 2016). It implies that internet has played a fundamental role in transforming banking services into e-services (Wu, Tao & Yang, 2012).

Customer perception and preferences of service quality bring extensive impact on bank's success (Gupta & Bansal, 2012). With the better understanding of the customers perception regarding the products and services companies can determine the actions that need to fulfill the needs of the customers (Afrin, 2012). Meeting the customer's expectation regarding the particular product or services is called as the customer satisfaction (Afrin, 2012). In internet banking customer satisfaction considers as a key factor (Devi & Revathy, 2011). The practice of high service quality is a powerful generator for fulfill the customer's needs and engage with them. The ultimate aim of any industry is to improve the satisfaction of the customer because customer satisfaction is the key to improve the customer retention and firm profitability (Sharma & Malviya, 2014).

Today internet banking has become widely used in the banking services among the services provide by the banks (Saha & Zhao ,2005). Although internet banking has get the attraction of

the customers, satisfaction towards the internet banking has become an issue in a high competitive industry (Sharma & Malviya, 2014). Further, service quality in electronic markets is becoming an important issue because customers' expectations and perceptions of internet services have been constantly changing (Gupta & Bansal, 2012). Also many researchers has been identify as the internet banking quality is a key issue to maintain customer satisfaction (Sharma & Malviya, 2014). Some researchers argued that though the banks adopt internet bank as an initiative to face high competitive there is an argument that internet banking technology does not meet the customers' need and quality (Bebli, 2012). According to the Saha & Zhao (2005), managing the service quality which hold important place in customer satisfaction is one of the key challenge of internet as a service delivery channel.

There are many studies conducting to measure the impact on service quality dimensions on customer satisfaction in a conventional banking environment but relatively limited researches were conducted to measure service quality dimensions of IBS and it's impact of customer satisfaction (Saha & Zhao, 2005). Zeithaml, Parasuraman & Malhotra (2000) suggested that there is need of more research which determine the e-service quality dimensions. In Sri Lanka also extended publish researches does not much contribute to literature regarding the effect of IBS quality on customer satisfaction (Tharanikaran, Sritharan & Thusyanthy, 2017). So in this study attempted to explore the impact of IBS quality dimensions on customer satisfaction.

## **2. Theoretical Background**

**Internet Banking:** Internet banking is a system that facilitate bank customers to access accounts and general information of the bank products and services through a personal computer or any other electronic internet enabled devices such as mobile phones (Wijayarathne, 2015). It offers banking from anywhere, anytime and is used for transactions, payments over the internet through a bank's website (Devi & Revathy, 2011). According to Premarathne & Gunathilake (2016), internet banking are defined as a set of technological tools that offers by financial institutions for its customers to do banking transactions via computers using an internet connection. Internet banking is an integrated system that provides customers flexible, convenient and inexpensive platforms with an integrated services of online personal banking such as online checking and

saving accounts, money market accounts, certificate of deposit, investment services and other related financial services (Bhattacharjee, 2001).

**Service Quality:** Service quality can be defined as the customer judgment about a service providers overall excellence (Jelena, Natalja & Konstantins, 2013). It is considered as a critical factor that can use to make a different from other competitors (Nagabhushanam, 2011). In late eighties, service quality is defined as the degree of different between customer's normative expectation and their perception of service performance (Parasuraman, Zeithamal & Berry, 1985). Tikto et al. (2012) pointed out that the service quality judgment is result of the difference between customer expectation and perception of the actual performance. Islam & Ahamed (2003) stated that there is significant difference between expected and perceived service quality of banks. According to Nagabhushanam, (2011), customer service is a dynamic interactive process which need continuous improvements. Further, he explained that quality plays a significance role in selling a product and it is a factor that influence the buying behavior of the customer.

**E- Service Quality:** E- Services facilitate electronic communication, information gathering, transaction processing and data interchange within business and between the business across the time and space (Featherman & Pavlou, 2003). Originally e-service quality define as the ability to which a web site can facilitate efficient and effective shopping, purchasing and delivery of products and services (Zeithaml et al. 2000). They develop 11 dimensions regarding the e-service quality. The proposed e- service quality dimensions in their study are: Reliability, Responsiveness, Access, Flexibility, Ease of navigation, Efficiency, Assurance, Security, Price knowledge, Site aesthetics and Personalization. In 2002, they further modify their model by introducing 7 dimensions of e- service quality as efficiency, Reliability, fulfillment, privacy, responsiveness. Broadly e- service quality means “encompass all phases of customer's interactions with a web site (Zeithaml, Parasuraman & Malhotra, 2005).

Parasuraman et al. (2005) develop a model for e- service quality scale introducing dimensions as Efficiency, Fulfillment, System availability, Privacy, Responsiveness, Compensation and contact. Among those e-service quality dimension efficiency, fulfillment, system availability and

privacy as core dimensions and other three dimensions are the recovery part of e- service quality. The e- recovery service quality dimensions are only applicable when there is a problem or issue for customers regarding the e- service process. Parasuraman et al. (2005) defined efficiency as the ease and speed of assessing the site, fulfillment as the extent to which the site's promises servicers are fulfilled, System availability as the correct technical functioning of the site, privacy as the degree to which site is safe and protects customer information, responsiveness means handling problems effectively through the site, compensation as degree to which the site compensate customers for problems and contact as the availability of assistance through the telephone or online representatives.

Customer Satisfaction: In present, customer satisfaction consider as main concerning factor by all industries especially in service industries (Wei, 2013). Customer satisfaction is related to the people who paid for a products or services and use those products and services (Ling, Ferna, Boona & Huat, 2015). Kotler (2000) define the customer satisfaction as the person's feeling of pleasure or disappointment occurred due to comparing a product or service perceived performance and customers personal expectation regarding the particular product or service. In another way customer satisfaction refers to the extent to which customers are happy with the products or services provided by a business (Worku et al. 2016). Che- Ha & Hasim (2007) define the customer satisfaction as consumers response difference between the customers' expectation and the actual performance of product or services consumed. The customers expectation can be define as the predictions made by the consumers about what is likely to happen during impending transaction or exchange (Zethaml & Berry, 1988) and the perceived performance define as the customers' perception of the ability of products or service to fulfill the consumers' needs and wants (Saha & Zhao, 2005). Yi (1990) defined the customer satisfaction as a collective outcome of perception, evaluation and physiological reactions to the consumption experience with a product or service. Chen, Hsiao & Hwang (2012) introduced a model for measure the customer satisfaction in 2012. The have propose mainly six factors for their model which influence customer satisfaction. The model introduced based on past literature, by Chen et al. (2012), proposed six dimensions to evaluate customer satisfaction; content, accuracy, format, ease of use, timeless, and safety.

### 3. Research Model and Hypotheses

The conceptual research model is developed based on previous literature regarding customer satisfaction and IBS qualities. Seven dimensions of IBS qualities represent the independent variables while customer satisfaction signifies the dependent variable. Based on the conceptual research model, seven hypotheses have been developed as follows.

**Efficiency and customer satisfaction:** According to Zethaml et al. (2002) efficiency means ability of the customers to get the web site, find the desired product and information within a minimum effort. Saha & Zhao (2005); Wu et al. (2012); Sakhaei, Afshari & Esmaili (2014); Tharanikaran et al. (2017); Gupta & Bansal (2012) suggest that the efficiency can make a positive influence on satisfaction level of the customers. Also Kumbhar (2011) hypothesized that the efficiency has a significant positive effect on customer satisfaction. Hence, the study make hypothesis that;

*H1: There is a significant positive relationship between efficiency and customer satisfaction*

**System availability and customer satisfaction:** Availability of up-to-date equipment and physical facilities are the main features in system availability (Kumbhar, 2011). Ling et al. (2015) pointed out web site is an important factor in connecting with customers hence system availability play an important role in process of customer satisfaction (Tharanikaran et al. 2017). Kumbhar (2011) postulated that the availability of system positively influence on customer satisfaction. Therefore, study proposes the following hypotheses as;

*H2: There is a significant positive relationship between system availability and customer satisfaction*

**Fulfillment and customer satisfaction:** Fulfillment incorporate with accuracy in services promises, having the product and delivering the product in promised time (Zethaml et al, 2002). This process will lead to improve the customer satisfaction (Saha & Zhao, 2005; Khan & Mahapatra, 2009; Tharanikaran et al. 2017). Fulfilment considers as a significant predictor of customer satisfaction (Kumbhar, 2011). Hence, this study develop the following hypothesis as:

***H3: There is a significant relationship between fulfillment and customer satisfaction***

**Privacy and customer satisfaction:** Privacy implies that information and data are not shared and those are secure (Zethaml et al, 2002). Privacy concern as important factor that always consider by customers and customers believe that bank has ability to protect the personal and financial information especially when customers do transactions via internet banking (Ling et al. 2015). privacy or confidentiality during the transaction emerged consider as the fundamental quality attribute in any bank (Parasuraman et al., 1985). Maintaining privacy of customers personal information affect the satisfaction and it voluntary lead to use of e-commerce systems (Molla & Licker, 2001). Further, Saha & Zhao (2005); Tharanikaran et al. (2017); Gupta & Bansal (2012); Sakhaei et al. (2014) have exposed privacy has strong influence on customer satisfaction. Therefore, this study hypothesises that;

***H4: There is a significant positive relationship between privacy and customer satisfaction***

**Responsiveness and customer satisfaction:** Responsiveness is defined as the willingness to help customers and provide prompt service ((Parasuraman et al., 1988). Most researchers explain that responsiveness has more ability to improve the satisfaction level of customers (Saha & Zhao, 2005; Khan & Mahapatra, 2009; Gupta & Bansal 2012; Nagabhushanam, 2011; Wu et al. (2012). Lau, Cheung, Lam & Chu 2013; Ijaz & Ali 2013; Kumbhar, 2011, also considered responsiveness as one of most frequent dimension as main source of satisfaction or dissatisfaction. Further, Sakhaei et al. (2014) and Munusamy, Chelliah & Mun (2010) concluded that the responsiveness has significant impact on customer satisfaction. So this study also develop hypothesis as follows;

***H5: There is a significant positive relationship between Responsiveness and customer satisfaction***

**Compensation and customer satisfaction:** According to the Zethaml et al. (2002), compensation involves receiving money back and return the cost. The more ability of compensate has direct influence on improve customer satisfaction (Tharanikaran el al. 2017). Also compensation dimension consider as the significant factor of customer satisfaction which customers expect from bank (Kumbhar, 2011). So this study also hypothesises that;

***H6: There is a significant positive relationship between compensation and customer satisfaction***

**Contact and customer satisfaction:** Need of customers to be able to speak a live customer agent online or through the phone consider as the contact (Zethaml et al, 2002). Contact dimension has positive influence towards customer satisfaction because contact agents regarding problems were highly expected by customers. (Wu et al. 2012, Tharanikaran et al. 2017). Similarly, Kumbhar (2011) pointed out that contact is important factor which contribute to customer satisfaction. Therefore, the study assumes that;

***H7: There is a significant positive relationship between contact and customer satisfaction***

#### **4. Research Method**

This study mainly focuses to identify impact of the internet banking service quality on customer satisfaction in Sri Lankan banking industry. Therefore, the study endeavors to quantify the impact of IBS quality dimensions on customer satisfaction through testing the hypothesized relationships. This research study will be conducted according to deductive approach applying quantitative method. The study population for this study comprised of customers in a reputed public bank in Sri Lanka which is started to use the internet banking in 2015. The sampling frame was 1100 customers who are currently using the internet banking facility in a branch of the selected public bank. The account holders in the selected branch of the public bank consider as the sample frame. Out of sampling frame, sample size i.e. 285 of customers who are using IBS, were selected using the sample determining formula developed by Kerjic & Morgan (1970). Sample were selected using simple random sampling method.

A structural questionnaire were developed to collect data. The questionnaire was prepared based on the past literature. The questionnaire consist with two parts. Part A consist with question regarding the e- service equality while part B includes customer satisfaction. The study gathers data regarding seven dimensions of e-service quality and these dimensions consist with sub questionnaire items. The researcher collect data regarding the customer satisfaction using six criteria and all these six criteria include sub questionnaire items. Before conducting the survey, a pilot survey has been done. Result of the pilot survey indicated that there is no difficulties to

understand and filling the questionnaire hence the researcher collected the data. Data was collected by researchers by directly meeting respondents and having face-to-face interviews.

In measuring service quality many researcher has adopt many dimensions. In this study, the service quality is measure based on the E-SQUAL model that introduced by Parasuraman et al, (2005) further this e-service quality model also adopted by Kumbhar (2011), Tharanikaran et al. (2017) in their studies. All questionnaire items were measured using the 5 point likert scale ranging from strongly disagree to strongly agree.

**Efficiency:** The efficiency is defined as the ease and speed of accessing and using the site (Parasuraman et al. (2005)). In this study, efficiency is measured by using eight questionnaire items adopted by Parasuraman et al. (2005); Kumbhar (2011); Tharanikaran et al. (2017). **System availability:** Parasuraman et al. (2005) define the system availability as the correct technical functioning of the site. System availability can be measured using four questionnaire items and these items were adopted based on the criteria consider by Parasuraman et al. (2005); Akinci, Atilgan-Inan & Aksoy (2010); Tharanikaran et al. (2017). **Fulfillment:** Fulfillment is refered to the extent to which the site's promises about order delivery and items availability are fulfilled (Parasuraman et al. 2005). To measure the fulfilment, the study adopted four questionnaire items based on past literature (Zethaml et al. 2002, Parasuraman et al. 2005, Saha & Zhao, 2005, Akinci et al. (2010) and Tharanikaran et al. (2017)). **Privacy:** Privacy means the degree to which the site is safe and protects customer information (Parasuraman et al. 2005). The study used three questionnaire items to measure the privacy dimension and those items were adopted by based on studies of Zethaml et al. (2002), Parasuraman et al. (2005), Saha & Zhao, (2005) and Tharanikaran et al. (2017). **Responsiveness:** Responsiveness means the ability of handling the problems and returns effectively through the site (Parasuraman et al, 2005). Responsiveness mainly can be measure using three items which adopted by Parasuraman et al. (1985), Zethaml et al. (2002), Parasuraman et al. (2005), Saha & Zhao, (2005), Akinci et al. (2010)and Tharanikaran et al. (2017). **Compensation:** The compensation refers to the degree to which site compensates customers for problems (Parasuraman et al, 2005). In order to measure compensation two questionnaire items were adopted based on the criteria adopted by Parasuraman et al. (2005), Tharanikaran et al. (2017). **Contact:** The contact dimension define as the availability of assistance through telephone or online representatives (Parasuraman et al, 2005). Moreover,

contact include communication between bank and customers via e-mail, SMS, Phone, interactive website, postal communication, fax. Kumbhar (2011). The study used three questionnaire items to measure the contact based on items adopted by Parasuraman et al. (2005), Kumbhar (2011) and Tharanikaran et al. (2017).

Customer satisfaction was measured using the model introduced by the Chen et al. (2012). They have introduced six dimensions to measure the customer satisfaction with respect to internet banking and all the items were measured using the 5 point likert scale. Content: Content refers to whether an internet banking website can provide sufficient, precise information content to fulfil customers' needs (Chen et al, 2012). To measure the content the study used four questionnaire items which are mainly adopted by Chen et al. (2012) and Tharanikaran et al. (2017). Accuracy: Accuracy means the data accuracy and the customer's satisfaction with it (Chen et al, 2012). The study implemented two questionnaire items to measure the customer's satisfaction regarding accuracy based on the studies of Chen et al. (2012) and Tharanikaran et al. (2017). Format: format concerned with the presentation of report information and customer's satisfaction with the format (Chen et al, 2012). To measure the format attribute study used two questionnaire items which were adopted by Chen et al. (2012) and Tharanikaran et al. (2017). Ease of use: Satisfaction regarding ease of use implies that the satisfaction of the customers that the internet banking system has a user- friendly interface and the interface is easy to use (Chen et al, 2012). Two questionnaire items were adopted by Chen et al. (2012) and Tharanikaran et al. (2017) to measure the ease of use. Timeliness: Timeliness indicate the internet banking system provides a quick response and up-to-date information and customer satisfaction with it (Chen et al, 2012). To measure the timeliness researcher used two questionnaire items which used by the Chen et al. (2012) and Tharanikaran et al. (2017). Safety: Safety is related to the security and trust concern in transaction and customer satisfaction regarding the safety (Chen et al, 2012). The study measured the safety based on the studies of Chen et al. (2012).

The collected data were analyzed and evaluated using Partial Least Squares-Structural Equation Modelling (PLS-SEM) to determine the relationship between independent variable and dependent variable. The measurement model is assessed by testing validity and reliability of each construct of the measurement model and structural model is evaluated by assessing; collinearity

issues, significance of path. Efficiency of structural model is evaluated using R2, f2 and Q2. The smartPLS (version2) software was used to analyze data.

## 5. Results and Discussion

Based on PLS-SEM measurement of outer model, first, the study evaluated reliability and validity of six dimensions relating to customer satisfaction. Table 1 presents the indicator reliability, internal consistency reliability and convergent validity of six dimensions of customer satisfaction. The table 1 that the all indicators of customer satisfaction were meet the condition of indicator reliability. It further shows that standardized factor loadings were above than the minimum threshold criterion 0.7 confirming the indicator reliability of reflective constructs. In addition, the all the factor loadings were statistically significant at 0.05 significance level. The Cronbach's  $\alpha$  was higher than the required value of 0.7 and composite reliability was higher than the recommended 0.7 value. Higher value of the Cronbach's  $\alpha$  and the composite reliability confirm the convergent validity of the constructs. Further, Average Variance of Extract (AVE) value of each indicators were higher than the 0.5 level. It confirm the convergent validity (see table 1). According to the result, none of inter-constructs correlation values were higher than the square root of AVE. Accordingly constructs of customer satisfaction fulfils the condition of discriminate validity.

**Table 1: Analyze the Reliability and Validity of Dependent Variable**

Construct	Indicator Reliability		Internal Consistency Reliability		Convergent Validity
	Loading	t-statistic	CR	$\alpha$	AVE
<b>1. Content</b>			<b>0.81</b>	<b>0.65</b>	<b>0.595</b>
The information content of internet banking meets the user needs	0.722	15.48	<b>4</b>	<b>7</b>	
Internet banking provides transaction reports that seem to be just about exactly what the user need	0.754	37.26			

Internet banking provide sufficient information that need	0.724	29.20			
<b>2. Accuracy</b>			<b>0.87</b>	<b>0.71</b>	<b>0.777</b>
The data in internet banking are accurate	0.881	57.13	<b>4</b>	<b>3</b>	
The users are satisfied with the accuracy of data in internet banking	0.882	62.33			
<b>3. Format</b>			<b>0.85</b>	<b>0.66</b>	<b>0.749</b>
The output of internet banking is presented in a useful format	0.859	51.72	<b>7</b>	<b>6</b>	
The report information extracted from internet banking is clear	0.872	58.36			
<b>4. Ease of Use</b>			<b>0.89</b>	<b>0.75</b>	<b>0.803</b>
Internet banking is user friendly	0.897	78.25	<b>1</b>	<b>5</b>	
Internet banking is easy to use	0.895	76.01			
<b>5. Timeliness</b>			<b>0.84</b>	<b>0.64</b>	<b>0.735</b>
The user get the information in time from Internet banking	0.865	53.27	<b>7</b>	<b>0</b>	
Internet banking provides up-to-date information	0.850	43.84			
<b>6. Safety</b>			<b>0.84</b>	<b>0.72</b>	<b>0.645</b>
The users are satisfied with the security of internet banking systems	0.712	43.84	<b>5</b>	<b>5</b>	
The adoption of security mechanism of internet banking will increase the data security on transactions	0.725	34.78			
The users are satisfied with the security mechanisms of internet banking	0.735	22.91			

Source: Survey data, 2017.

Researchers have measured reliability and validity of seven dimensions of IBS quality. Table 2 shows that the factor loading of each variables were higher than the minimum condition of 0.7

and all the loadings are statistically significance at 0.05 confidence level. Hence, the result proves the indicator reliability of the study. Moreover Cronbach's  $\alpha$  and composite reliability (CR) of the constructs were higher than the 0.7 which indicate the internal consistency reliability. Higher value of AVE (greater than 0.5) confirm the convergent validity of the constructs. The results revealed that, none of inter-constructs correlation values were higher than the square root of AVE of IBS quality conforming the condition of discriminate validity.

**Table 2: Analyze the Reliability and Validity of Independent Variable**

Construct	Indicator Reliability		Internal consistency Reliability		Convergent Validity
	Loading	t-statistics	CR	$\alpha$	AVE
<b>1. Efficiency</b>			<b>0.90</b>	<b>0.85</b>	<b>0.696</b>
Web site makes easy to find what the user need	0.874	53.49	<b>1</b>	<b>3</b>	
Web site makes easy to get anywhere	0.887	56.82			
Web site enables to complete a transaction quickly	0.831	36.20			
Information at the web site is well organized	0.739	22.23			
<b>2. System Availability</b>			<b>0.85</b>	<b>0.74</b>	<b>0.663</b>
Web site is always available for business	0.768	19.27	<b>5</b>	<b>5</b>	
Web site launches and runs right away	0.888	56.62			
The bank's web site does not crash	0.791	25.48			
<b>3. Fulfillment</b>			<b>0.84</b>	<b>0.75</b>	<b>0.577</b>
Web site delivers services when promised	0.713	15.49	<b>5</b>	<b>4</b>	
Records at bank's web site are always	0.804	25.69			

accurate					
Web site makes promises about delivery of service	0.798	24.31			
Web site promptly informs about important situations (payments, balance and etc.)	0.718	15.78			
<b>4. Privacy</b>			<b>0.87</b>	<b>0.79</b>	<b>0.708</b>
The bank protects information about the web-shopping behavior	0.848	34.16	<b>9</b>	<b>4</b>	
The bank does not share the personal information with other sites	0.866	38.60			
The bank's web site protects information about the credit card	0.810	23.22			
<b>5. Responsiveness</b>			<b>0.81</b>	<b>0.67</b>	<b>0.600</b>
The bank's web site tells what to do if the transaction is not processed	0.816	23.95	<b>7</b>	<b>4</b>	
Web site takes care of problems promptly	0.816	21.88			
<b>6. Compensation</b>			<b>0.87</b>	<b>0.71</b>	<b>0.779</b>
Web site compensates for problems it creates	0.877	43.04	<b>6</b>	<b>7</b>	
Web site compensates when the transactions are not completed on time	0.889	49.53			
<b>7. Contact</b>			<b>0.82</b>	<b>0.67</b>	<b>0.607</b>
The bank's web site provides a telephone numbers to reach branches	0.740	18.52	<b>2</b>	<b>7</b>	
The bank's web site has customer service representatives available online as a helpdesk	0.811	27.21			
The bank's web site facilitates to speak and clarify problem with an official	0.785	27.81			

Source: Survey data, 2017.

Structural model assessment consists with five steps suggested by Hair et al. (2014). First, researchers checked the multi-collinearity issue between independent variables and then assessed the significance of path coefficients of the structural model. The study assessed the multi-collinearity between the dependent variable by using compensation as dependent variable. According to the result, table 3 shows that VIF value of the all variables were lower than the 5 and tolerance value of each variable were higher than the 0.2 hence it can be concluded that there is no multi-collinearity problems among the exogenous variables.

**Table 3: Tolerance and VIF Values**

	Collinearity Statistics	
	Tolerance	VIF
<b>Efficiency</b>	0.688	1.454
<b>Fulfilment</b>	0.637	1.571
<b>Privacy</b>	0.792	1.262
<b>Responsiveness</b>	0.733	1.363
<b>System Availability</b>	0.711	1.407
<b>Contact</b>	0.737	1.356

Source: Survey data, 2017.

Secondly, researcher has asses the structural model by examining significance of the hypothesized relationships. Table 4 shows path coefficient, t-statistics of the variables and significances of the hypothesis. Result in the table 4 indicate that efficiency, system availability, compensation, contact variables are statistically significance and fulfilment, privacy and responsiveness variables are not statistically significance. The  $R^2$  of the model is 0.425 which describes adequacy of the model. According to the  $R^2$  value 42.5% of total variation is explained by the fitted model.

**Table 4: Path Coefficients and Significant**

H	Relationship	B	t-Statistics	Result
H1	<b>Efficiency-&gt;Customer Satisfaction</b>	0.224***	4.215	Supported

H2	<b>System availability -&gt; Customer Satisfaction</b>	0.173***	3.415	Supported
H3	<b>Fulfilment -&gt; Customer Satisfaction</b>	0.037	0.618	Not Supported
H4	<b>Privacy -&gt; Customer Satisfaction</b>	0.032	0.615	Not Supported
H5	<b>Responsiveness-&gt;Customer Satisfaction</b>	0.079	1.427	Not Supported
H6	<b>Compensation-&gt;Customer Satisfaction</b>	0.133**	2.527	Supported
H7	<b>Contact -&gt; Customer Satisfaction</b>	0.252***	4.465	Supported

\*\* p>0.05, \*\*\*p>0.01

The study found that efficiency has positive impact on customer satisfaction by 22.4 percent ( $\beta=0.224$ ) and according to the t statistics (t value=4.21) variable is significant at 99% confidence level so, hypothesis 1 is strongly accepted. According to Devi & Revathy (2011), Gupta & Bansal (2012) and Zhao & Saha (2005) efficiency has a significant impact on customer satisfaction. This is further verified by the result of the study. Also the system availability and customer satisfaction showed a positive impact on customer satisfaction by 17.3 percent ( $\beta=0.173$ ) and significance at 99% confidence level (t-value=3.41) thus the H2 is accepted and found the system availability and compensation has significant influence on customer satisfaction. This was further supported by the findings of Tharanikaran et al. (2017). However, Wirtz & Mattila (2004) suggest that the compensation does not enhance the satisfaction of customers.

Moreover according to the result of the study fulfilment does not effect to the customer satisfaction because  $\beta$  coefficient value is 0.037 and t-value is 0.618 it does not statistically significant, hence hypothesis 3 is rejected. Privacy and customer satisfaction does not have positive relationship because according to the  $\beta$  coefficient ( $\beta=0.032$ ) and t- statistics (t-value=0.61) hypothesis 4 is not accepted which suggests that privacy does not effect on customer satisfaction. Responsiveness also not effect on customer satisfaction since  $\beta$  coefficient ( $\beta$

=0.079) and t value (t value=1.43) does not supported to the hypothesis 5. This result was bit different than the result of other related studies but according to the Zhao & Saha (2005) fulfilment, privacy and responsiveness was found as core e-service quality dimensions in internet banking which has significant impact on customer satisfaction. Sharma & Malviya (2014), Malik et al. (2011) has identified the responsiveness as one of significant factor that effect on customer satisfaction and Afrin (2012) stated that the customers prioritized responsiveness as the most important factor of service quality.

Further compensation have a positive significant impact on customer satisfaction by 13.3 percent which means if the quality of the compensation increase by 1 percent customer satisfaction would increase by 13.3 percent. The t value of the coefficient is 2.53 and significant at 95% confidence level by accepting the hypothesis 6. Contact also has positive influence on customer satisfaction. According to the  $\beta$  coefficient ( $\beta = 0.252$ ) and t value (t value=4.46) shows that the contact and customer satisfaction positively effect on customer satisfaction. According to Ling et al. (2015) and Gupta & Bansal (2012) has identified privacy has a substantial effect on customer satisfaction. However, result of study revealed that privacy is not a significance factor for customer satisfaction.

## 6. Conclusion

The main aim of this study was to explore the effect of internet banking service quality on customer satisfaction identifying how efficiency, system availability, fulfilment, privacy, responsiveness, compensation and contact were effect on customer satisfaction. The result of the study revealed that IBS quality dimensions have higher influence on customer satisfaction. Efficacy has greater positive impact on customer satisfaction which means that customers are more satisfied when customer can reach to the bank web site easily and meet their needs within a minimum time and needs. Also the system availability has significant impact on customer satisfaction which means when bank web site available for customers without any crashes and web site always launch without any errors caused to improve the level of satisfaction level. Moreover, degree to which bank web site compensate the problems and compensate when transactions were unable to complete on time affected to improve the customer satisfaction significantly.

According to the result, fulfilment does not significantly effect on customer satisfaction it suggests that customers has awareness about that bank web site deliver the services at the promised time through the web site so it doesn't effect to improve satisfaction level. Also responsiveness and privacy does not significantly contribute to improve the satisfaction of customers. Responsiveness refers to the ability of provide the prompt services as the request of the customers and give necessary instruction regarding the non- proceed of transactions. Hence, the result pointed out responsiveness does not significantly effect on customer satisfaction. Furthermore internet banking users realized that the internet banking providers play an important role regarding privacy protecting of the people so privacy does not significantly contribute to customer satisfaction. The empirical results concludes that contact, efficiency, system availability and compensation were significantly impact on customer satisfaction while fulfilment, privacy and responsiveness were not significantly impact on level of the customer satisfaction.

Thus, the study extends the knowledge of internet banking service quality and customer satisfaction by further inspiring content of service quality dimensions related in the context of internet banking. The study primarily contribute to enrich the existing theories. Further the empirical results provide sufficient evidence to understand the effect of IBS quality dimension towards customer satisfaction rather than the traditional service quality dimensions. Also the study contributes to enhance and improve the understanding the relative importance service quality dimensions in context of public bank.

The study identified contact as the most affected factor for customer satisfaction. Hence, policy makers and bank managers should further invest resource on improving the quality of the service providing agents. Customers contact the agents when they having issues regarding transaction or using internet banking. Providing more accuracy information and providing simple instructions for the customers who need the assistance would help to further increase the satisfaction because customers are in different level of understanding ability. This required providing training for the service staff who would be able to handle customers request promptly.

Efficiency also caused to improve the customer satisfaction of internet banking users. Customers always expect time saving and cost effective methods for their banking activities. So bank web site should be able to perform any errors and web site speed loading required. Management should focused on effective browsing of the web site.

Offering reasonable lower charges and rates for internet banking users is important way for attract customers towards internet banking and improve the satisfaction of existing customers. Cost of transaction should be moderately cheap and compensation should be done within a short time because Sri Lanka is still developing country and high proportion of people received lower income. Providing good services through internet banking will built strong and long lasting relationship with customers. To increase the internet banking user's, management should target the different income levels customers because by separately identifying the need of separate income level and providing services which match for those different income level groups will able to increase the satisfaction level of the customers. Internet banking knowledge of the customers should be develop in order to increase the internet banking usage. Bank managers should conduct programs for increase the knowledge of the customers.

## References

- Afrin, T. (2012). Quality of customer service in the banking sector of Bangladesh: an explorative study. *East West Journal of Business and Social Studies*.3
- Akinci, S., Atilgan-Inan, E., & Aksoy, S. (2010). Re-assessment of ES-Qual and E-RecS-Qual in a pure service setting. *Journal of Business Research*, 63(3), 232-240.
- Bebli, R. S. (2012). The impact of internet banking service quality on customer satisfaction in the banking sector of Ghana. School of Management, Blekinge Institute of Technology.
- Bhattacharjee, A. (2001). An empirical analysis of the antecedents of electronic commerce service continuance. *Decision support systems*, 32(2), 201-214.
- Caruana, A. (2002). Service loyalty: The effects of service quality and the mediating role of customer satisfaction. *European journal of marketing*, 36(7/8), 811-828.

- Che-Ha, N., & Hashim, S. (2007). Brand equity, customer satisfaction and loyalty: Malaysian banking sector. *International review of business research papers*, 3(5), 123-133.
- Chen, R. F., Hsiao, J. L., & Hwang, H. G. (2012). Measuring customer satisfaction of internet banking in Taiwan: Scale development and validation. *Total Quality Management & Business Excellence*, 23(7-8), 749-767.
- Devi, S. K., & Revathy, B. (2011). Customers 'satisfaction with service quality of internet banking. *International Journal of Business Policy and Economic*, 4(1), 161-176
- Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: a perceived risk facets perspective. *International journal of human-computer studies*, 59(4), 451-474.
- Gupta, K. K., & Bansal, I. (2012). Development of an instrument to measure internet banking service quality in India. *Researchers World*, 3(2), 11-25
- Ijaz, A. T., & Ali, A. (2013). Assessing service attitude: Service quality measures taken by islamic banks in Pakistan. *Journal of Business and Management*, 8, 61-68.
- Islam, M. S., & Niaz, A. Z. M. (2014). Analysis of service quality and satisfaction level of customers in banking sector of Bangladesh. *British Journal of Marketing Studies*, 2(7), 14-28.
- Islam, N., Ahmed, E. (2003). A measurement of customer service quality of banks in Dhaka City of Bangladesh. *South Asian Journal of Management*, 12(1), 37-57.
- Jayamaha, R. (2008). Impact of IT in the banking sector. *BIS Review*, 13.
- Jelena, T., Natalja, L., & Konstantins, K. (2013). Service quality in banking: developing and testing measurement instrument with Latvian sample data. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*. 11(2), 507-515.
- Jiang, L., Jun, M., & Yang, Z. (2016). Customer-perceived value and loyalty: how do key service quality dimensions matter in the context of B2C e-commerce?. *Service Business*, 10(2), 301-317.

- Kadir, H. A., Rahmani, N., & Masinaei, R. (2011). Impacts of service quality on customer satisfaction: Study of Online banking and ATM services in Malaysia. *International Journal of Trade, Economics and Finance*, 2(1), 1.
- Khan, M. S., & Mahapatra, S. S. (2008). Service quality evaluation in internet banking: an empirical study in India. *International Journal of Indian Culture and Business Management*, 2(1), 30-46.
- Kotler, P. (2000). *Marketing Management*. 10th Edn., New Jersey: Prentice-Hall
- Krejcie, R.V., & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607-610.
- Kumar, M., Tat Kee, F., & Taap, M. A. (2009). Determining the relative importance of critical factors in delivering service quality of banks: an application of dominance analysis in SERVQUAL model. *Managing Service Quality: An International Journal*, 19(2), 211-228.
- Kumbhar, V. M. (2011). Factors affecting the customer satisfaction in e-banking: Some evidences form Indian banks. *Management Research & Practice*, 3(4).
- Lau, M. M., Cheung, R., Lam, A. Y., & Chu, Y. T. (2013). Measuring service quality in the banking industry: a Hong Kong based study. *Contemporary Management Research*, 9(3), 263.
- Li, H., & Suomi, R. (2007). Evaluating electronic service quality: a transaction process based evaluation model. *The European Conference on Information Management and Evaluation*.
- Ling, G. M., Fern, Y. S., Boon, L. K., & Huat, T. S. (2016). Understanding customer satisfaction of internet banking: a case study in Malacca. *Procedia Economics and Finance*, 37, 80-85.
- Malik, M. E., Naeem, B., & Arif, Z. (2011). Impact of perceived service quality on banking customers' loyalty. *Interdisciplinary Journal of contemporary research in Business*, 3(8), 637-645.

- Molla, A., & Licker, P. S. (2001). E-commerce systems success: An attempt to extend and respecify the Delone and MacLean model of IS success. *J. Electron. Commerce Res.*, 2(4), 131-141.
- Munusamy, J., Chelliah, S., & Mun, H. W. (2010). Service quality delivery and its impact on customer satisfaction in the banking sector in Malaysia. *International Journal of Innovation, Management and Technology*, 1(4), 398.
- Nagabhushanam, M. (2011). A Study on Customer Service Quality of Banks in India. *Journal of Analyz Research Solutions*, 315-364.
- Nimako, S. G., Gyamfi, N. K., & Wandaogou, A. M. M. (2013). Customer satisfaction with Internet banking service quality in the Ghanaian banking Industry. *International Journal of Scientific & Technology Research*, 2(7), 165-175.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *the Journal of Marketing*, 41-50.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual: A multiple-item scale for measuring consumer perc. *Journal of retailing*, 64(1), 12
- Parasuraman, A., Zeithaml, V. A., & Malhotra, A. (2005). ES-QUAL: A multiple-item scale for assessing electronic service quality. *Journal of service research*, 7(3), 213-233.
- Rod, M., Ashill, N. J., Shao, J., & Carruthers, J. (2009). An examination of the relationship between service quality dimensions, overall internet banking service quality and customer satisfaction: A New Zealand study. *Marketing Intelligence & Planning*, 27(1), 103-126.
- Saha, P., & Zhao, Y. (2005). Relationship between online service quality and customer satisfaction: a study in internet banking. Lule University of Technology MSc Program in Electronic Commerce.
- Sakhaei, F., Afshari, A., & Esmaili, E. (2014). The impact of service quality on customer satisfaction in Internet banking. *Journal of mathematics and computer science*, 9, 33-40.
- Sharma, G., & Malviya, S. (2014). Internet banking service quality and its impact on customer satisfaction in Indore district of Madhya Pradesh. *International Journal of Business and Management Invention*, 3(3), 01-06.

- Tharanikaran, V., Sritharan, S., & Thusyanthy, V. (2017). Service quality and customer satisfaction in the electronic banking. *International Journal of Business and Management*, 12(4), 67.
- Webster, J., & Watson, R. T. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MIS quarterly*, xiii-xxiii.
- Loh, C. W. (2013). Determinants of customer satisfaction in domestic retail banking sector, Doctoral dissertation, University Tunku Abdul Rahman.
- Wijayaratne, K. (2015). Expansion of Internet Banking-Overcoming the Barriers. 27th Anniversary Convention.229-250.
- Wirtz, J., & Mattila, A. S. (2004). Consumer responses to compensation, speed of recovery and apology after a service failure. *International Journal of service industry management*, 15(2), 150-166.
- Worku, G., Tilahun, A., & Tafa, M.A. (2016). The Impact of Electronic Banking on Customers' Satisfaction in Ethiopian Banking Industry: The Case of Customers of Dashen and Wogagen Banks in Gondar City. *Journal of Business & Financial Affairs*, 5(2), 2-18.
- Wu, Y. L., Tao, Y. H., & Yang, P. C. (2012). Learning from the past and present: measuring Internet banking service quality. *The Service Industries Journal*, 32(3), 477-497.
- Yi, Y. (1990). A critical review of consumer satisfaction. *Review of marketing*, 4(1), 68-123.
- Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2000). Conceptual Framework for understanding e-service quality: Implications for future research and managerial practice.
- Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2002). Service quality delivery through web sites: a critical review of extant knowledge. *Journal of the academy of marketing science*, 30(4), 362-375.