

# Factors Influencing on E-Banking Practices: *Evidence from Sri Lanka*

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Received: October 16, 2016 Accepted: October 23, 2017 Published: November 6, 2017

doi:10.5296/jsr.v9i1.11989 URL: <https://doi.org/10.5296/jsr.v9i1.11989>

## Abstract

The purpose of this paper is to explore the influencing factors of e-banking practices in Sri Lanka. A questionnaire with seven-point Likert scale is applied to 388 usable responses. The study was exploratory in nature and employed factor analysis to identify the important factors of e-banking practices. Results indicate that mainly four factors are significant with respect to the e-banking practices. Privacy & convenience, content & website layout, speed of delivery, and accessibility are the critical factors influencing the e-banking practices. In addition, factors extracted from the analysis accounted for 53.704% of the total variance. This study expected to provide a unique model in the realm of e-banking.

**Keywords:** *exploratory factor analysis; e-banking practices; Sri Lanka*

## 1. Introduction

Customers' requirements are changing dynamically in the hyper competitive environment due to the increased usage of digital platform (Amin, 2016; Nudurupati, Tebboune, & Hardman, 2016). This digital and electronic platforms become one of the most critical base in the success of service providing organizations, like banks and financial intermediaries. In this above fact, banks work hard to attract consumers and keep their market share by providing them with more innovative services through Internet banking (Chuang & Hu, 2012). Many researchers suggest that, an Internet-based consumer banking practices might be effective, with reports of more profitable, loyal and committed consumers compared with traditional banking consumers (Lichtenstein & Williamson, 2006; Takieddine & Sun, 2015). In this setup, financial institutions pump the money in the information technology infrastructure to facilitate the banking operation, which may tap the consumers' mind favourably to enjoy the banking services (Bauer, Hammerschmidt, & Falk, 2005). Therefore, the banking industry has always been innovative and receptive to new technological development in the financial service industry (Ozdemir, Trott, & Hoecht, 2008). Due to that, the current study desires to empirically examine the factors, which determine the e-banking practices with an evidence of commercial bank customers, which are functioning in Jaffna city, Sri Lanka. This identified factors of e-banking practices help to strengthen the bank's strategic formulation in the digital era.

## 2. Literature Review

### 2.1 E-Banking Practices

Increased usage of digital technologies and real-time ICT capabilities already have changed the platform for customers to adopt the e-banking practices (Nudurupati et al., 2016). Therefore most of the banks and financial intermediaries are adopting e-banking practices to enable a superior banking services to their customers. In line with above fact, internet banking delivers the customers to carry out a range of banking activities electronically at any time and place with low handling cost (Amin, 2016; Angelakopoulos & Mihiotis, 2011; Narayanasamy et al., 2011; Yoon & Steege, 2013). To be precise, the usage of internet banking has become one of the most important element in e-commerce environment (Wang et al., 2003). As a result, previous researchers have empirically found that e-banking practices has an influence on customers to access internet banking with a higher degree of convenience which offers 24/7 services. (Amin, 2016; Floh & Treiblmaier, 2006; Johnson & Marakas, 2000; Karjaluoto, Mattila, & Pento, 2002; Lassar, Manolis, & Lassar, 2005; Mukherjee & Nath, 2003; Pikkarainen, Pikkarainen, Karjaluoto, & Pahnila, 2004; Poon, 2007; Rotchanakitumnuai & Speece, 2004; Tan & Teo, 2000; Venkatesh & Davis, 1996). Therefore, today, several financial institutions are endeavoring to emphasize customer-oriented services via internet. In this juncture, it is crucial to implement new banking services in order to develop and keep better relationships with customers.

## 2.2 Factors Influencing e-Banking Practices

Researchers in this work reviewed the existing literature in the realm of e-banking practices. Critical review paves the path to find out the factors influencing e-banking practices in cross cultural perspective. In this context, researchers in this work recognized the factors as content and website layout, speed of delivery, privacy and security, convenience and accessibility (Ahmad & Al-Zu'bi, 2011; Ali & Omar, 2016; Casaló, Flavián, & Guinalíu, 2007; Kazi, 2013; Liao & Cheung, 2002; Liébana-Cabanillas, Muñoz-Leiva, & Rejón-Guardia, 2013; Polasik & Piotr Wisniewski, 2009; Poon, 2007).

e-banking practices refers to the consumers overall evaluation and judgment of the excellent and quality of electronic services offering in the virtual marketplace (Santos, 2003). In this way, firms can gain abundant benefits from well-designed websites (Al-Qeisi, Dennis, Alamanos, & Jayawardhena, 2014). Therefore the contents on website is one of the major factors influencing e-banking practices (Casaló, Flavián, & Guinalíu, 2008; Poon, 2007; Sohail & Shanmugham, 2003). Generally, proper navigational attributes and search facilities in website contents lead to higher level of interaction, which tap the customers mind favourably to use the system (Pikkarainen et al., 2004; Sohail & Shanmugham, 2003). Moreover, intellectual capacity of the contents and tasks in a website help to reduce possible errors, which is a key aspect of e-banking services (Casaló et al., 2008; Jayawardhena & Foley, 2000; Pikkarainen et al., 2004). In this context the content and web site layout facilitates efficient and effective delivery of e-banking services. Next to the content and website layout, customers are particularly interested in the speed with which a service is offered or delivered because speed of e-transactions flow is critical to user satisfaction of using e-banking services (Liao & Cheung, 2002; Poon, 2007). Besides that, Johnston (2011) illustrates that certain actions, such as increasing the speed of processing information and customers, are likely to have an effect on customer satisfaction and loyalty. In which, time saving may be the driver of customer loyalty in the e-banking scenario. (Gerrard, Barton Cunningham, & Devlin, 2006; Liao & Cheung, 2002; Polasik & Piotr Wisniewski, 2009; Poon, 2007; Siu & Mou, 2005).

Moreover, the past researches suggest that privacy and security is an important factor that affect users' intention to adopt e-based transaction systems (Ahmad & Al-Zu'bi, 2011; Chen & Barnes, 2007; Gerrard & Barton Cunningham, 2003; Gorgani, 2016; Poon, Yong, & Lam, 2008; Sohail & Shanmugham, 2003; Wu & Chang, 2005). Privacy and security denote the proper authorization and confidentiality of customer's information and transactions in a bank (Katsikas, Lopez, & Pernul, 2005; Kolsaker & Payne, 2002; Liao & Cheung, 2002). Therefore customer preference and confidence on e-banking would also largely rest on how the banks would deal with any erroneous transactional and security concerns that may occur during online banking (Polasik & Piotr Wisniewski, 2009; Sohail & Shanmugham, 2003). It further strains that, privacy and security in e-banking services motivate the customers to engage in e-banking services (Floh & Treiblmaier, 2006; Lallmahamood, 2007). In addition to that, convenience is another beneficial features of e-banking (Daniel, 1999; Kazi, 2013; Liao & Cheung, 2002; Usman & Usman, 2012). Because e-banking provides a higher degree of convenience that enables customers to access e-banking services at all times that is 24/7

access (Lichtenstein & Williamson, 2006) and any places it could never be in traditional banking (Wan, Luk, & Chow, 2005). E-banking is more convenience for people to pay their utility bills, check balances, transfer funds, apply for auto loans and mortgages, and use other complementary services at the tip of a finger anytime from anywhere (Kazi, 2013; Ramsaran, 2003; Yu & Fang, 2009). Therefore from the viewpoint of the consumers, the decision to use e-banking is frequently motivated by convenience and efficiency (Bruno, 2003; Polasik & Piotr Wisniewski, 2009).

To this end, researchers focus on the accessibility of information as ease of access to electronic banking applications. Accessibility is the one of the major driver in commercial use of the web which allows to access the information more easily (Rotchanakitumnuai & Speece, 2004). Accessibility defines as the ability of users to access information and services from the web site (Ahmad & Al-Zu'bi, 2011). Furthermore, easy access encourages the customers to engage in e-banking services without frequent delay and frustration (Rotchanakitumnuai & Speece, 2004). In addition, banks should concentrate on the investment in Information technology infrastructure to make the proper layout of website and facilitate the customers to assess the information simply (Lederer, Mirchandani, & Sims, 2001). Moreover, Sadeghi and Heidarzadeh Hanzaee (2010), Poon et al. (2008), Casaló et al. (2008), and Liébana-Cabanillas et al. (2013), express that accessibility is advantageous for attaining user satisfaction and engagement in the adoption of electronic banking.

### **3. Methodology**

#### *3.1 Sample*

This study examines the factors influencing on e-banking practices in Sri Lankan context. Therefore, the customers, who use e-banking services of selected banks (Bank of Ceylon, People's Bank, Commercial Bank, Hatton National Bank, Sampath Bank, Nation Trust Bank, and Cargills Bank), operating in Jaffna city, Sri Lanka were considered as the target population in this study. Systematic quasi-random sampling was adopted to recruit participants for this research. Anonymous questionnaires are randomly distributed to a total 550 customers from selected banks in this city. The response rate was 85.8% (472). Among these, 388 (70.5%) of the responses were usable as most items were adequately responded. The demographic profile of respondents is depicted in Table I.

#### *3.2 Measures and Instrument Development*

A paper based survey instrument was developed from previous validated scales that were adapted for the purpose of this study. The scales of e-banking practices included 28 items under the five dimensions: content and website layout, speed of delivery, privacy & security, convenience and accessibility. This means that, contents & website layout, was operationalized using six items; speed of delivery, using five items; privacy & security, using six items; convenience using six items and accessibility, using six items. So these 28 items are adopted from Poon (2007). The questionnaire has been slightly modified without changing the original contents as it translated into local language to ensure suitability for the

research context. The questionnaire comprises two sections. Section A comprised questions on demographic profile of respondents and Section B consisted of questions measuring the factors affecting the e-banking practices. A seven-point Likert type scale anchored at one for “strongly disagree” and seven for “strongly agree” was used for items operationalizing all the constructs.

To ensure content validity, the survey instrument was vetted by four academics with expertise in the discipline of Marketing, Banking & Finance. The survey instrument, originally written in English, was translated into Tamil, the respondents’ mother tongue. The survey instrument was translated back into English and was cross-checked by two other bilingual researchers to ensure the reliability and validity of translation. The respondents had the option of responding to either the English or Tamil language survey based on their language proficiency. The survey instrument was pretested with eight regular customers of the banks. Based on their feedback, some minor changes were incorporated into the wording and format of the survey instrument.

**Table 1.** Demographic Profiles of the Respondents ( $n = 388$ )

Category	N	%
<i>Type of Account</i>		
Saving	287	74.0
Current	101	26.0
<i>Gender</i>		
Male	216	55.7
Female	172	44.3
<i>Age</i>		
Below 20	16	4.1
21 – 30	277	71.4
31 – 40	61	15.7
41 - 50	25	6.4
Above 50	9	2.3
<i>Profession</i>		
Student	83	21.4
Businessman	137	35.3
Employee in Private/Government Sector	168	43.3
<i>Monthly Individual Income</i>		
Below LKR. 25000	97	25.0
LKR. 25000 – LKR. 50000	207	53.4
Above LKR 50000	84	21.6

#### 4. Results and Discussion

Exploratory Factor Analysis (EFA) is a complex procedure with a few absolute guidelines

and options, and is a widely used and broadly applied statistical technique in the social sciences (Sivathaasan & Chandrasekaran, 2013). The study employs the exploratory factor analysis (EFA) to identify the determining dimensions or factors of e-banking practices in Jaffna, Sri Lanka. Exploratory Factor Analysis is a general name denoting a class of procedures primarily used for data reduction and summarization (Gnanadesikan, 2011; Hair, Black, Babin, Anderson, & Tatham, 1998; Jöreskog & Sörbom, 1993; Malhotra, 2007). Further, as extraction method the Principal Component Analysis (PCA) followed Varimax rotation was applied (Aier, Riege, & Winter, 2008), which is the default method of extraction in many popular statistical software packages, including SPSS.

Testing reliability and validity of the scale is important before applying factor analysis. The internal reliability of the data collected was verified by Cronbach's alpha. This value may vary from 0 to 1. (Malhotra, 2007) and recommended satisfactory value of alpha is required to be more than 0.6 for the scale to be reliable (Burgess & Steenkamp, 2006; Cronbach, 1951) whilst, Nunnally Jr (1970), and Hair Jr, Black, Babin, Anderson, and Tatham (2010), recommend that the value of Cronbach's alpha should exceed 0.70, it indicates good internal consistency among data. In this present study, overall Cronbach's alpha is 0.795. Moreover, the reliability coefficients of individual factors range from 0.7 to 0.9 (Refer Table IV). Thus the result revealed that, overall and individual Alpha values for all the factors were greater than 0.7. It was indicating good internal consistency among the items. Moreover, the test of validity of data was examined with the help of a Kaiser-Meyer-Olkin (KMO) measure of sample adequacy and Bartlett's test of sphericity. Generally, Bartlett's Test of Sphericity and the Kaiser-Meyer-Olkin Test of Sampling Adequacy (KMO) are commonly used to provide more complex measures for assessing the strength of the relationships and suggesting factorability of the variables (Beavers et al., 2013). Kaiser (1974), suggests, the accepted index of KMO & Bartlett's Test of Sphericity should be over 0.5. Also, the Bartlett's Test of Sphericity relates to the significance of the study and thereby shows the validity and suitability of the responses collected to the problem being addressed through the study.

**Table II.** KMO & Bartlett's Test of Sphericity

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</b>		<b>0.856</b>
	Approx. Chi-Square	3060.000
<b>Bartlett's Test of Sphericity</b>	df	378
	Sig.	.000

In this study, value for KMO matrix is 0.885, which falls under the range of Meritorious (Beavers et al., 2013; Sivathaasan & Chandrasekaran, 2013) and test value of chi-square is 3060.000, which is significant at five percent level ( $p < 0.05$ ). Hence, sample taken to carry out factor analysis is statistically significant and data is appropriateness to continue the factor analysis. These two tests satisfied the validity of data for factor analysis.

**Table III.** Matrix of Variance Explained

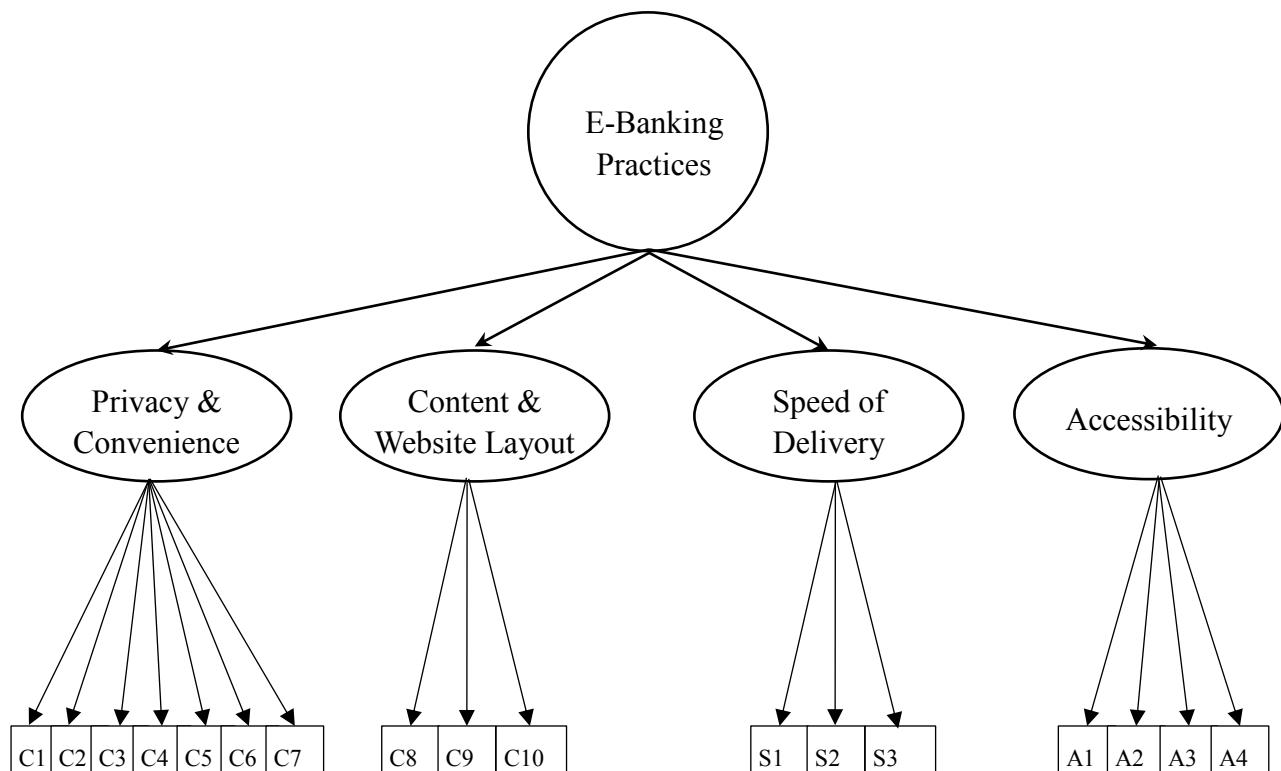
Factors	Number of Items	Eigenvalue	Percentage of explained	Cumulative percentage of explained variance
Factor 1	7	6.923	19.780	19.780
Factor 2	3	2.017	13.595	33.375
Factor 3	3	1.445	11.291	44.666
Factor 4	4	1.296	9.038	53.704

The highest and the lowest loadings for this analysis was 0.819 and 0.517 respectively. The procedure resulted in a four factor solution rotated by Varimax rotation. These four factors extracted together account for 53.704 percent of the total variance. On examining content of the items, factors are labelled as privacy & convenience, content & website layout, speed of delivery, and accessibility. This is explained by the Table IV: Summary of the measurement Model & Reliability.

**Table IV.** Summary of the Measurement Model & Reliability

Construct	Statements	Item No	Factor loading	Cronbach's alpha
Privacy & Convenience (Factor 1)	The authorized username and password are important	COP 1	0.716	0.787
	Banking institutions keep customers information private and confidential	COP 2	0.624	0.781
	Confidential information is delivered safely from banks to customers	COP 3	0.586	0.780
	I can access anytime and anywhere	COP 4	0.577	0.780
	I am satisfied with the security system	COP 5	0.556	0.777
	Trust the bank will compensate for losses due to security reasons	COP 6	0.553	0.779
Content & Website Layout (Factor 2)	E-banks transaction is easy to use and User friendly	COP 7	0.528	0.776
	Clear and simple menus allow me to perform e-banking transaction easily	COW 1	0.748	0.779
	Attractive screen layout and design	COW 2	0.730	0.781
	Clear and easy guidance screen	COW 3	0.680	0.779
Speed of Delivery (Factor 3)	Transition is efficient/no waiting time	SPD 1	0.588	0.779
	Speed of e-transactions flow is faster than traditional banking channels	SPD 2	0.564	0.780
	Response speed to complaint is satisfactory	SPD 3	0.541	0.778
Accessibility (Factor 4)	Site has details on how to fund transfer between accounts	ACC 1	0.819	0.791
	Site has details on security arrangements	ACC 2	0.792	0.794
	Site has details on foreign exchange rates and interest rates	ACC 3	0.583	0.836
	Site has a search engine	ACC 4	0.517	0.788

Based on above Table III & IV, factor 1 (privacy & convenience), contained seven items and explained 19.78% of the variance in the data with an eigenvalue of 6.923. While a loading of three items in factor 2 (Content & Website Layout), accounted for 13.595% of the variance with an eigenvalue of 2.017. Meanwhile, factor 3 (Speed of Delivery), contained three items, which accounted for 11.291% of the variance with an eigenvalue of 1.445. Finally, factor 4 (Accessibility) loaded with four items, accounted for 9.038% of the variance with an eigenvalue of 1.296. These four factors extracted together account for 53.704% of the total variance. As a result, a model that influences e-banking practices is proposed with the above four factors. This model shown in Figure I, was derived from statistical evidence.



**Figure 1.** Proposed Model for E-Banking Practices

Furthermore, Pearson correlation test is applied to find out the relationship between e-banking practices and its factors such as, privacy & convenience, content & website layout, speed of delivery, and accessibility.

**Table V.** Descriptive Statistics and Correlation Matrix for Study Variables

<i>Construct</i>	<i>M</i>	<i>SD</i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>1. Privacy &amp; Convenience</b>	5.93	0.62	1				
<b>2. Content &amp; Website Layout</b>	5.83	0.78	.431**	1			
<b>3. Speed of Delivery</b>	5.80	0.73	.484**	.469**	1		
<b>4. Accessibility</b>	5.51	0.71	.236**	.207**	.231**	1	
<b>5. E-banking Practices</b>	5.77	0.51	.728**	.760**	.771**	.587**	1

*Note: \*\*. Correlation is significant at the 0.01 level*

*M= Mean, SD= Std. Deviation,*

The above Table V, depicts the descriptive statistics and correlation matrix for study variables. Based on the descriptive analysis, highest mean value was found among particular variables towards e-banking practices. Privacy & convenience has the highest mean of 5.93, whereas accessibility has the lowest mean of 5.51. Even though mean & standard deviation are in the same level among all the constructs approximately. In addition, Pearson correlation coefficients are presented to illustrate the relationship as well as the statistical significance between e-banking practices and its predictors. Further, these four predictors are also positively correlated with e-banking practices which is also in the significant at 99% level. Speed of delivery has the strongest relationship ( $r=0.771$ ), followed by content & website layout ( $r=0.760$ ), privacy & convenience ( $r=0.728$ ), and accessibility ( $r=0.587$ ).

## 5. Conclusion

The primary objective of the study is to identify the factors, which influence the e-banking practices in Jaffna city, Sri Lanka. Therefore this study has emphatically established the critical factors that affect the e-banking practices. There are several studies have attempted to identify the factors determining e-banking practices albeit, an empirical investigation, this study has identified four predictors which contribute to the e-banking practices, namely: Privacy & convenience , content & website layout, speed of delivery, and accessibility. In future, scholars may be interested to confirm either the identified dimensions of e-banking practices or polish-up the dimensions in the e-banking paradigm.

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