

IB Index: Measuring the Satisfaction of Internet Banking Customers

J.M Wasantha Premaratne

Abstract—Liberalized telecommunications market in Sri Lanka has a significant impact on the economic and social development of the country. The development of communication and computer technology and the availability of the Internet have made it possible that one can do most banking transactions from a remote location without even stepping into a bank branch. Banking sector has never been more important to the Sri Lankan economy than it is today. The purpose of this study is to formulate an index to measure the satisfaction of Internet Banking (IB) customers in Sri Lanka. For this purpose, the data were collected by utilizing semi-structured interviews and a customer survey of three selected banks in Sri Lanka. The convenience sampling method was employed to select the samples of 120 IB users and 120 IB non-users. The IB Index of customer satisfaction has been constructed based on nine dimensions.

Keywords—IB Index, Internet Banking, Banking in Sri Lanka, Customer Satisfaction

I. INTRODUCTION

DURING the last few years, Sri Lanka has experienced development of new telecom products, services and technologies. This technological change is increasingly expanding the traditional boundaries of all the sectors in the economy. At present, Sri Lanka has a liberalized telecommunications market that has a significant impact on the economic and social development of the country. The Telecommunication Authority of Sri Lanka (TASL) is the regulator of the telecom industry and the TASL is responsible for licensing companies to provide various telecommunication services under the Telecommunication Act of 1991. The Telecommunication and Regulatory Commission of Sri Lanka (TRCSL) ensures that competition in the telecommunication industry is open, fair and as effective as possible. As a result of the growth of technology and competition, the Internet has had a significant growth which is shown by table I.

TABLE I
INTERNET USAGE AND POPULATION STATISTICS

Year	Users	Population	% Penetration
2000	121,500	19,630,230	0.62
2007	428,000	19,796,874	2.20
2008	771,700	21,128,773	3.70
2009	1,163,500	21,324,791	5.50
2010	1,776,200	21,513,990	8.30

Source: International Telecommunication Union, 2012

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The banking sector in Sri Lanka plays a pivotal and responsible role in collecting public deposits for investment and consumption and lending that ultimately assists in improving the standard of living and quality of life of the people. Table II depicts the developments of the banking sector in Sri Lanka.

TABLE II
DEVELOPMENTS OF THE BANKING SECTOR IN SRI LANKA-2012

Item	Number
Licensed Commercial Banks (LCBs)	24
Domestic banks	12
Foreign banks	12
Total no. of bank branches and other outlets	6,487
Total no. of Automated Teller Machines (ATM's)	2,538
Banking density: no. of bank branches per 100,000 persons	16.8

Source: Central Bank of Sri Lanka, 2013

Banking sector has never been more important to the Sri Lankan economy than it is today. The development of communication and computer technology and the availability of the Internet have made it possible that one can do most banking transactions from a remote location without even stepping into a bank branch. Applications of information and communication technology concepts, techniques, policies and implementation strategies to banking services have become a subject of fundamental importance and concerns to all banks and a prerequisite for local and global competitiveness. The advancement in technology has played an important role in improving service delivery standards in the banking industry. In that scenario, IB could have significant effects on the structure and performance of the banking industry [1]. These new opportunities and challenges have meant the rise of new competitors in the global banking market [2].

It is generally known that there is a positive relationship between customer loyalty and profitability. When a company retains just five percent more of its customers, profits increase by 25 percent to 125 percent [3]. Customer satisfaction is mainly derived from the physiological response with the perceptual difference gap between expectation before consumption and practical experience after consumption of service or products. It implies an accumulated temporary and sensory response. Therefore, under such a specific consumption setting, it frequently influences the overall attitude and decision-making when customers purchase products or service [4]. Satisfied customers share their best experiences with other peoples and occupy unambiguous word

of mouth advertisement [5], [6]. Unsatisfied customers always share bad experiences with the society about the organization and customers become disappointed [7]. Similarly, negative word of mouth advertisement will have adverse impact on banks performance. Therefore, the main objective of this research study is to formulate an index to calculate the level of satisfaction of IB customers.

II. LITERATURE REVIEW

The term Internet Banking refers to the use of Internet technology to offer banking facilities to remote clients. IB can be defined as 'an Internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments' [8]. IB is a banking service that allows customers to access and perform financial transactions on their bank accounts from their computers using an Internet connection [9]. IB includes a system that enables customers of financial institutions, individuals or businesses to access accounts, transact business or obtain information on financial products and services on public or private networks including the Internet [10]. IB is an act of conducting financial intermediation on the Internet [11].

Consumers' demographic and financial characteristics and use of other electronic banking technologies play a significant role in the decision to adopt IB [11]. Some of the major psychological and behavioural factors which affect the adoption of any new innovation, including IB are consumer awareness, ease of use, security, accessibility, technophobia, preference for personalised services, and the cost of adopting the innovation [12]. Convenience is the main motivator for consumers to bank on the Internet, while there is a range of other influential factors that may be modulated by banks [13].

Another important factor affecting the acceptance and adoption of new innovation is the level of security or risk associated with it [14], [15]. Even in countries where IB has long been established the most important factor showing progress of this new innovation is the consumers' concern for security of financial transactions over the Internet. Usage of IB in Tunisia is influenced most strongly by convenience, risk, security, and prior Internet knowledge [16].

Content of the web and its design also play an important role. Product information content, its amount of product information, product information format, language, and the layout of the sites certainly have an effect on the consumer's perception of the user friendliness of the IB site [17]. The design of the websites with appropriate use of the graphical user interface is also considered as an important determinant [18]. Another important factor is the complexity and friendliness of a product. The ease of use of an innovative product or a service is one of the three important characteristics for its adoption from the customers' perspective [14]. User friendliness of the domain names as well as the navigation tools available in the website are important determinants for ease of use. There is a high correlation between websites' download speed and web user transaction. In this context, the use of high-resolution graphics and inefficient web servers has a significant negative impact. Also,

there is a high correlation between download speed and user satisfaction [19].

Factors such as download speed, web design, guidance, and security as the most important factors for an internet service quality index [20]. Six factors affecting the quality of Internet services are content, accuracy, ease of use, timeliness, aesthetic, and security [21]. Six determinants of customer perceived online service quality are security, reliability, responsiveness, competence, ease of use, and product portfolio [22]. Ease of use and usefulness are the important factors in evaluating online service quality [23]. Five quality dimensions that have an impact on end-user satisfaction in an online environment are content, accuracy, format, ease of use, and timeliness [24].

Customers have doubts about the trust ability of the e-bank's privacy policies [25]. Trust has significant influence on user's willingness to engage in online exchanges of money and personal sensitive information [26], [27]. Assurance about security relates to the extent to which the web site guarantees the safety of customers' financial and personal information [28], [29]. Understanding customer satisfaction will facilitate companies to maintain customer satisfaction on products or services. As such, inferior products or services can be improved to allow customers with wonderful impression [30].

III. METHODOLOGY

Primary data for the study were collected by utilizing semi-structured interviews and a customer survey of the selected three banks in Sri Lanka: private bank (Sampath Bank), government bank (Bank of Ceylon) and a foreign bank in Sri Lanka (HSBC). The convenience sampling method was employed to select the sample of IB and IB non-customers. A customer survey was done by posting and handing over the questionnaire with a postage-paid return envelope and a cover letter explaining the purpose of the study to 600 customers of the selected three banks. A total of 253 questionnaires were received resulting in a response rate of about forty two percent. However, only 240 questionnaires were useable as in the remaining questionnaires, substantial portions were not filled in. Therefore, the samples include 120 IB users and 120 IB non-users. Cronbach's Alpha calculated based on the feedback on nine variables that were used in calculating the IB Index was 0.817. The high value of the Cronbach's Alpha suggests that the questionnaire used for collecting the data on opinion of the banking customers is highly reliable.

The IB Index of customer satisfaction has been constructed based on incentives to promote IB, support service 24/7, trust, ease of usage of the facility, consumer awareness, web content and design, number of online banking facilities, security and download speed. The method shown in Fig. 1 was applied to calculate the IB Customers' Satisfaction Index (IB Index) for the selected three banks.

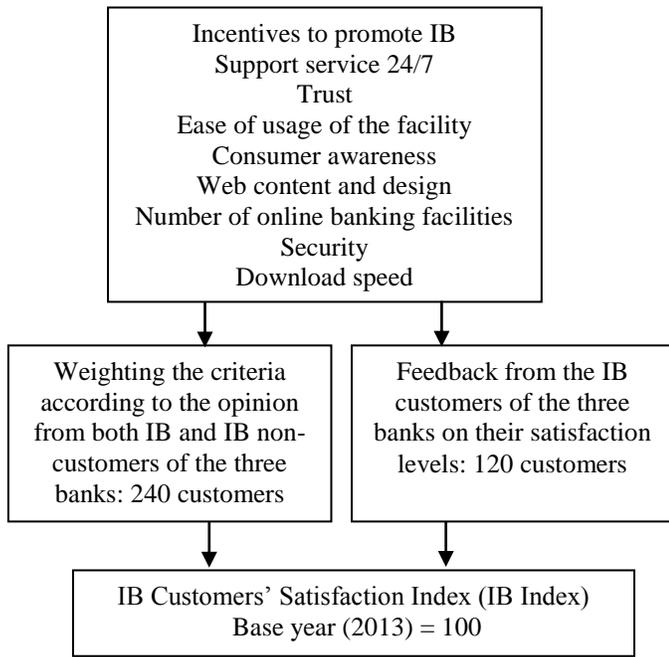


Fig. 1 Calculation of the IB Customers' Satisfaction Index (IB Index)

The following equation (1) can be utilized to calculate the IB index.

$$IB\ Index = \frac{\text{Weighted total value of the current year}}{\text{Weighted total value of the base year}} \times 100 \text{ --- (1)}$$

Growth rate of the IB customers' satisfaction can be calculated using the following equation (2).

$$Growth\ Rate = \frac{IB\ Index\ of\ the\ current\ year - IB\ Index\ of\ the\ last\ year}{IB\ Index\ of\ the\ last\ year} \times 100 \text{ --- (2)}$$

IV. DATA ANALYSIS AND DISCUSSION

The mean age of the IB non-users was about 35 years while the IB users were about 34 years. As per Fig. 2, 43 percent of IB users are working in the private sector whereas it is 29 percent for the IB non-users.

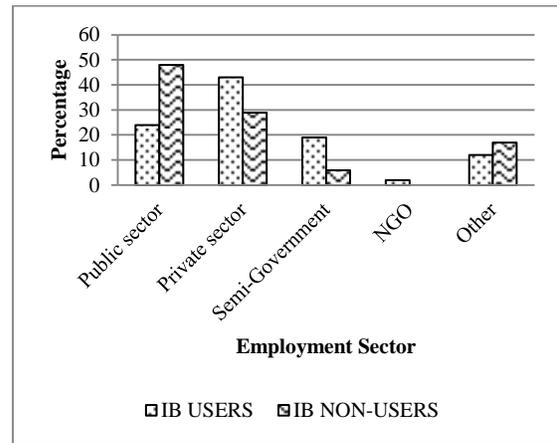


Fig. 2 Employment sector of the IB users and IB non-users

Furthermore, the percentage of graduates and undergraduates in the group of IB users is about 85 percent while the IB non-users is about 38 percent, thus indicating that the two groups are not equal in terms of level of education. There is a significant proportion (27%) of IB non-users among those who have only secondary education (Fig. 3).

A significant difference can be seen in the average monthly income. The mean monthly income of the IB users was Rs. 59908.33 and for the IB non-users it was Rs. 40341.67. IB customers have more than one type of account. Forty six percent of IB customers hold accounts in terms of saving, current and term deposits. A significant feature is that 89 percent of IB non-users have only savings accounts. Any one of both categories does not use current accounts alone. When the distance between the bank branch and the customer's residence is considered, the mean value (distance) for IB non-users is 4.84 KM and that of IB users is 3.69 KM.

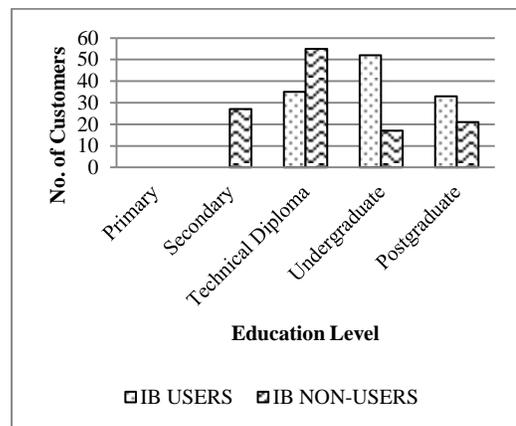


Fig. 3 Education level of IB users and IB-non users

According to the survey, 52 percent of IB non-users have Internet access. Fig. 4 represents the types of transaction normally used by IB users and IB non- users of the selected banks. Balance enquiry and payment of utility bills are the transactions that have a higher frequency among the two groups.

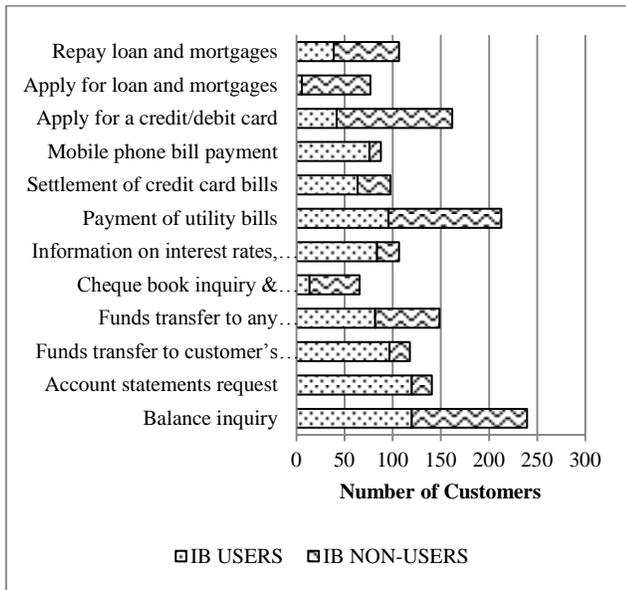


Fig. 4 Types of transactions normally used by IB users and IB non-users

The majority of the customers (54 percent) have been using the IB facility for one to three years. However, only eight percent of the customers have been using the facility for more than six years. The majority of the IB customers very often log on to the IB service for transactions or to check balances. The samples of IB users of the selected banks indicate that 63 percent of the customers use the IB facility two to six times per week. The percentage of customers who use the IB facility daily is only 13. Fig. 5 represents the frequency of IB usage of the customers.

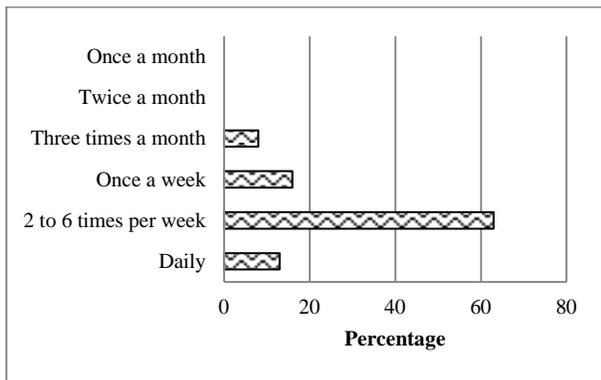


Fig. 5 Frequency of Internet Banking usage

Maintenance and the enhancement of long-term customer relationships are treated as a basis for the successful performance of any enterprise. Increase in customer relation leads to the increase in enterprise profitability. Thus, identification of the factors influencing the longevity of the customer-service provider relationship becomes a priority. The level of importance of the selected variables for calculating the IB index was obtained from IB and IB non-users of the selected three banks. Fig. 6 depicts the opinions given by the customers on those factors.

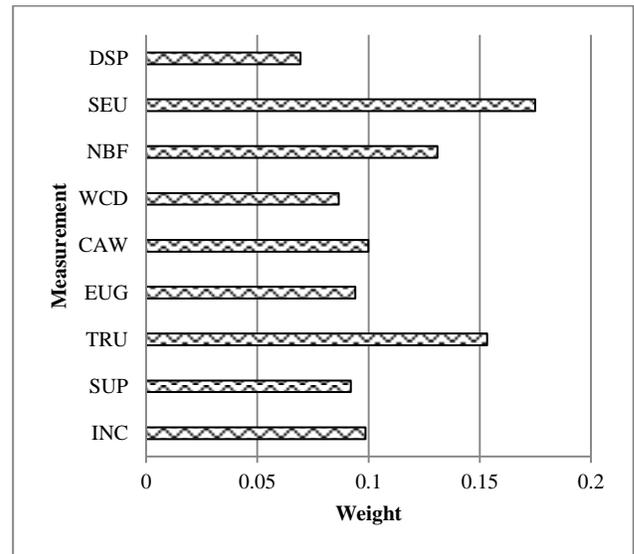


Fig. 6 depicts the opinions given by the customers on those factors.

- DSP = Download speed
- SEU = Security
- NBF = Number of online banking facilities
- WCD = Web content and design
- CAW = Consumer awareness
- EUG = Ease of usage of the facility
- TRU = Trust
- SUP = Support service 24/7
- INC = Incentives to promote IB

Fig.6 Opinion given by the banking customers

After taking the opinion on the importance of the selected variables from both, IB and IB non-users, the experiences on those selected variables were collected from the IB users. Table III shows the weights and the level of customer satisfaction as per the experiences of the IB users of the three selected banks.

TABLE III
WEIGHTS AND THE LEVEL OF CUSTOMER SATISFACTION OF THE SELECTED BANKS

Measurement and its Weight	Weight	Weighted total satisfaction		
		Bank A	Bank B	Bank C
Measurement	Weight	Weig. value	Weig. value	Weig. value
INC = Incentives to promote IB	0.09863	12.427	6.115	10.849
SUP = Support service 24/7	0.09203	16.197	4.785	22.272
TRU = Trust	0.15338	43.562	52.45	42.642
EUG = Ease of usage of the facility	0.09401	19.742	25.94	26.887
CAW = Consumer awareness	0.09995	9.3953	6.596	8.9955
ECD = Web content and design	0.08659	19.396	11.94	19.396
NBF = Number of online banking facilities	0.13095	30.906	28.28	33.787
SEU = Security	0.17499	48.648	54.94	57.048
DSP = Download speed	0.06943	15.970	12.91	15.970
Base Year		2013	2013	2013
Weighted Total Value (WTV)		216.24	204.0	237.84
Index Value (2013)		2013=10	2013=10	2013=10
		0	00	0

Based on Table III, and equation (1) the IB Index for the year concerned (example 2014) can be calculated as follows:

$$Bank_A = \frac{100}{216.248062} \times WTV_{2014}$$

$$Bank_B = \frac{100}{204.004948} \times WTV_{2014}$$

$$Bank_C = \frac{100}{237.8499093} \times WTV_{2014}$$

Growth rate of the IB customers' satisfaction index in 2014 can be calculated using equation (2) as follows:

$$= \frac{IB\ Index_{2014} - IB\ Index_{2013}}{IB\ Index_{2013}} \times 100$$

V.CONCLUSION

IB Index of customer satisfaction has been constructed based on incentives to promote IB, support service 24/7, trust, ease of usage of the facility, consumer awareness, web content and design, number of online banking facilities, security, and download speed. The credibility of the index can be improved by including more dimensions and increasing the sample size. The findings of this study have important implications for researchers in the field of IB, banks that are currently offering IB services as well as banks that are planning to offer such services in the near future. The outcomes of this research can be applied to developing countries in the region in general.

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