Consumer Intention Towards Self-Banking Services in Sri Lanka: A Study Based on Peoples' Bank

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Abstract: Bankers in Sri Lanka recently introduced new self-banking technologies including automated teller machines, cash/cheque deposit machines and bill payment machines where customers can directly engage with banking services without employing service people. As per the exploratory study, the researchers found that the usage rate of Self-Banking Services (SBS) in Sri Lanka is invariably low. Therefore, the research was carried out to identify the factors affecting consumer intention towards SBS in Sri Lanka and to identify the most important factor to promote SBS in Sri Lanka. The conceptual model was developed using the existing theories such as the Technology Acceptance Model, Diffusion of Innovations Theory, and Theory of Planned Behaviour. Accordingly, perceived security (PS), perceived ease of use (PEU), perceived trust (PT), perceived usefulness (PU) and perceived risk (PR) were identified as independent variables, whereas attitudes towards SBS and intention to use SBS were identified as mediating and dependent variables, respectively. An online questionnaire survey and a printed questionnaire survey were conducted to collect data and 252 full responses were obtained in return. As per the multiple regression analysis and sobel test, attitude mediates the impact of all independent variables, while PU was identified as the most important factor to promote SBS. Finally, by understanding the consumers' perspective towards SBS, this study will assist bankers to plan and implement appropriate strategies to promote SBS in Sri Lanka.

Keywords: Self-banking services, Consumer attitudes, Consumer intention

Introduction

Background of the study

Due to rising employment costs and improvements in service offerings, service firms are encouraged to consider substituting technology-based self-service options for labor to serve consumption (Dabholkar, 1996). Retail banking is one of the sectors that has quickly embraced this reengineering phase and is committed to offer innovations. Changes in financial conditions such as globalization and privatization have caused a high level of competition in the banking sector. Combativeness in rising banking market rivalry is the key issue for these banks to find various options and possibilities to enhance their services. Introducing self-service banking technologies (SSBT) to consumers is one of the excessive solutions implemented by the banking sector. SSBT are technologies that enables customers to use a service at their own, irrespective of the direct involvement of service employees. (Meuter, et al., 2003).

SSBT provide automated teller machines (ATM), cash/cheque deposit machines (CDM), bill payment machines (Kiosk machines), internet banking and mobile banking facilities to both banks and

customers (Gerrard & Cunningham, 2003; Laukkanen, et al., 2008; Walker & Johnson, 2006). The advantages of using ATM, CDM and Kiosks have motivated the dimensions of service quality, and banks are offering new choices to consumers. Opportunities for growth, cost reduction, customer satisfaction and efficiency are recognized as reasons for building and adding new technologies to the existing banking networks.

Even though, there are several banks that provide self-banking services (SBS) currently in Sri Lanka, these services were first introduced to Sri Lanka by the Peoples' Bank. To become the most digitalized bank by the year 2020, Peoples' Bank commenced establishing self-banking units around the country equipped with the most modern ATM, CDM and Kiosk machines. The automated machines are accessible 24 hours, 365 days in the year further enhancing convenience for customers empowering them as to where, when and how they would like to conduct their banking needs in order to create a comprehensive revolution in the Sri Lankan banking industry. In this context, most of the Sri Lankan banking customers have not adapted to the new facilities as expected, regardless of the various advantages they provide.

Research problem

While various banks in Sri Lanka have rapidly spread new self-banking units across the country expecting their customers to use the facilities provided by them, not all customers have adopted the self-banking facilities as they tend to avoid or fail to follow them. Most of the customers are in a dilemma and they hesitate to move towards the adoption of new technology. They remain stuck with traditional methods of performing banking and financial operations than using the new technology, despite the numerous

advantages it offers including convenience to the general public and significant long-term savings for the banks' operating costs as prominent advantages. Unless consumers encompass and use self-banking facilities to the expected level, it is difficult to realize savings and benefits. It is essential to make almost all consumers self-banking facility users. Therefore, studying the factors affecting consumer intention towards SBS in Sri Lanka are predominant to make a contribution to the body of knowledge in this area.

Innovation data is the first step in the adoption process to raise awareness and interest that leads to the decision which is to adopt or not to adopt the innovation (Rogers, 1962). Data on self-banking facilities is a major factor affecting the purpose of embracing facilities or not. Such factors are very relevant to practitioners who are preparing and promoting new models in the current competitive market as well as traditional forms of banking. Therefore, against this background, the researchers are prompted to investigate and find out the factors affecting consumer intention towards SBS in Sri Lanka.

Research objectives

Objectives of this study are two fold; to identify the factors affecting consumer intention towards SBS in Sri Lanka and to identify the most important factor to promote SBS in Sri Lanka.

Literature Review

The extensive use of ICT in the Sri Lankan banking sector first began in late 1980s (Jayamaha, 2008). Self-banking and internet banking are the current distribution methods developed for banking services in Sri Lanka. In contrast, they are the newest, most creative and most competitive services that banks offer (Sathye, 1999). Previously, customers interact directly with service organizations

and service meetings between front-line service workers (Bitner, 1990). This conventional relational emphasis of company meetings have been largely replaced recently by innovations including new self-service facilities for customers (Bitner, et al., 2000).

Attitudes are one of the most important factors affecting the purchasing behavior of consumers and can therefore attract significant attention from researchers investigating banking customers' actions and their relationship with banks. In recent years, the emergence of technology-based self-service platforms have changed the way consumers access many services, including banking services (Bobbit & Dabholkar, 2001). In addition, Berta & Mann (2000) stated that 'privacy and security' is one of the most important factors to be considered when storing data in ATM, CDM and Kiosks which are the applications of self-banking units.

The research model for this study was developed using an extensive review of literature on Theory of Technology Acceptance Model (TAM), Diffusion of Innovations Theory (DIT) and Theory of Planned Behavior (TPB) which are the mostly used theoretical frameworks to explain the consumer intention towards SSBT.

Theory of Technology Acceptance Model

TAM was originally developed by Fred Davis and extended by Richard Bagozzi (1989). The model forecasts the acceptability of a system and identifies the advances that need to be made to the system in order to make it acceptable by users. Further, the model suggests that there are two major factors affecting an information system's acceptability: perceived ease of use (PEU) and perceived usefulness (PU).

The main objective of TAM is to provide a thorough explanation of conditions typically affecting the acceptance of technological applications, and it also helps practitioners to define why a precise organism is unacceptable and rejected. In addition, Marina, (2009) suggested that the usage of any kind of information system should be in a straight line defined by the conduct purpose of its use, which is influenced by consumer attitudes towards the usage of the system and perceived usefulness of the system which are, in effect, persuaded by perceived ease of use.

Diffusion of Innovations Theory

'Diffusion' extends beyond the concept of two-step flows, focusing on factors which increase or decrease the likelihood of embracing an invention, a new idea, a product or an action by the members of a given culture. DIT was first developed by Rogers (1962) to describe how an innovative idea or service is promptly driven through a specific population or social system and diffuses over time.

The model categorises 'the adopters of innovation' as: innovators (a group's first 2.5% to embrace a new concept), early adopters (next 13.5% to embrace an invention), early majority (next 34% of the group to adopt the invention after early adopters), late majority (next 34% of the group, who tries an innovation only after the others) and laggards (the last 16%, who are conservative and stuck with past generations' choices when adopting an innovation.

Theory of Planned Behavior

Theory of Planned behavior which was originated as Theory of Reasoned Actions (TRA) was proposed by Ajzen & Fishbein (1977). The model, extends the TRA model where Perceived Behavioral Control (PBC) is introduced as a new parameter. In essence, PBC is determined by the

availability of resources, opportunities and skills and the perceived value of those resources, opportunities and capacity to achieve results. Although the behavioral intention of both TPB and TRA are believed to influence the conduct of a person, TPB uses PBC to act for the individual that is not under volitional command. When incorporating PBC, there are not only practical limits, but also an element of self-efficacy. Three main factors have been considered in TPB model to determine the factors affecting behavioral intention for this study – interpreted by Taherdoost & Masrom, (2009): behavioral attitudes, subjective norms, and perceived behavioral control.

Methodology

Eleven hypotheses were developed with a mediating effect of attitudes towards SBS by reviewing existing theories. Scope of the study is restricted to SBS provided by commercial bank units in Colombo Metropolitan Area. The rationale for selecting Colombo metropolitan area is the existence of a well-organized and a larger inter network of banks operated equally in rural & urban areas, increasing usage of modern technology and surge in e-literacy among the people. Deductive approach method was used for this study with the positivism research philosophy. Research technique used for this study was the survey questionnaire, which is used widely in business and management related researches. According to Saunders, et al., (2009), this type of technique is generally related to the deductive method which enables the collection and interpretation of quantitative data using concise and inferential statistics. Further, the study adopted quantitative approach since it allows the researcher to examine the underlying connection among variables described in the model providing evidence to support the hypotheses (Carter &

Bélanger, 2005). A cross-sectional survey design was used in the research as it collects data on a wider range of variables at a given time using structured questionnaires.

The population of this study equally included experienced and inexperienced banking consumers relative to SBS. 350 respondents were selected for the sample size based on convenience sampling method which is the most applicable sampling technique to collect complete information which will concentrate comprehensively on the selected sample. A questionnaire was used to collect primary data. The researchers initially carried out a pilot test with 25 respondents to ensure the items used in the questionnaire were reliable, clear, and appropriate. Results acquired from the pilot test were used in addition to improve the final questionnaire. Finally, 252 appropriate questionnaires were considered to test the proposed hypotheses. 'IBM SPSS (Statistical Package for the Social Sciences) Version 22' software was used to analyze data. Secondary data linked with SBS, including types of services provided by banks, number of users from sources, pattern of users & etc. were mainly gathered through discussions held with top-level personnel engaged in the Ratmalana branch of Peoples ' bank, Sri Lanka and from the bank's official website.

Conceptual Framework

According to the conceptual framework illustrated by Figure 1, PU, PEU, PT (percieved trust), PS (perceived security) and PR (perceived risk) have been considered as the independent variables (IV), consumer intention has been considered as the dependent variable (DV) and the attitudes towards SBS has been considered as the mediate variable (MV). Corresponding to the conceptual

framework, research was examined under the following hypotheses.

H_{1a} – Attitudes towards SBS mediate the impact of PU towards consumer intention to use SBS.

H_{1b} – Attitudes towards SBS mediate the impact of PEU towards consumer intention to use SBS.

H_{1c} – Attitudes towards SBS mediate the impact of PT towards consumer intention to use SBS.

H_{1d} – Attitudes towards SBS mediate the impact of PS towards consumer intention to use SBS.

H_{1e} – Attitudes towards SBS mediate the impact of PR towards consumer intention to use SBS.

H_{1f} – Attitudes towards SBS impact the consumer intention to use SBS.

H_{1g} – PU impacts consumer intention to use SBS.

H_{1h} – PEU impacts consumer intention to use SBS.

H_{1i} – PT impacts consumer intention to use SBS.

H_{1j} – PS impacts consumer intention to use SBS.

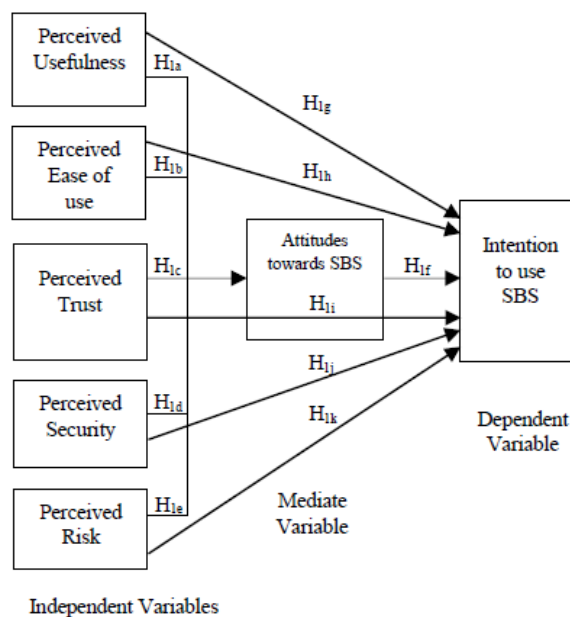H_{1k} – PR impacts consumer intention to use SBS.

Figure 1. Conceptual Framework
Source: Author(s) 2019

Results

Along with the intention of evaluating the indicators of the respective variables, some demographic characteristics and general characteristics were analyzed through the questionnaire in addition, as an attempt to display the answers of the right population and right respondents. Regarding their ages, majority of them were between 18 to 25 years, which was 194 respondents in total. Next, the research examined the level of their education. Among the 252 respondents, majority (107) had obtained a Bachelors' degree as their highest level of education. Regarding occupations, it was discovered that majority of the respondents were undergraduates with a quantity of 84 (33.3%). General characteristics of the respondents were examined next in descriptive analysis. Out of the 252 respondents, most of them (86%) were aware of SBS. Even though, researchers identified that only 82% of them were using SBS. Out of the above 82%, majority were using only the ATM in self-banking units and 18% do not intend to

use SBS in any way as they distrust technology and innovations when managing monetary whereas 13 respondents face the same problem due to the difficulties involved in the process. The most significant finding is that, out of the 252 respondents, 40% had a general opinion, which was, human contact is more important than technology when handling finances through banks.

The research aimed at determining the internal consistency of the scales used to calculate the variables. Cronbach's Alpha is used to determine the reliability of a study and according to Nunnally (1967), if the value is greater than or equal to 0.6, the collected data can be considered as reliable and acceptable.

Table 1. Reliability test

Variable	Cronbach' Alpha	No. of items
PU	0.928	2
PEU	0.823	2
PT	0.792	3
PS	0.897	4
PR	0.801	3
MV	0.898	2
DV	0.960	4

Source: Survey data 2019

According to Table 1, the variables of the current study are highly reliable. Therefore, the data can be used further for the purpose of acquiring the impact of the factors affecting consumer intention towards SBS.

Descriptive research methods were used to investigate the hypotheses which is difficult to test experimentally. Alternative hypotheses were built to show both direct

effect and indirect effect of the observations.

Table 2. Correlation analysis – Direct relationship

Hypotheses	Pearson Correlation	Significance value	Decision
H_{1g}	0.203	0.054	Rejected
H_{1h}	0.134	0.322	Rejected
H_{1i}	0.094	0.579	Rejected
H_{1j}	0.134	0.322	Rejected
H_{1k}	0.127	0.378	Rejected

Source: Survey data 2019

As per the results of correlation analysis illustrated by Table 2, PU, PEU, PT, PS and PR (independent variables) are not significantly correlated with the consumer intention to use SBS (dependent variable) since the above hypotheses indicates a significance level above 5% (0.05) individually and therefore, they can be rejected.

Table 3. Correlation analysis – Indirect relationship

Hypotheses	Pearson Correlation	Significance value	Decision
H_{1a}	0.253	0.015	Accepted
H_{1b}	0.372	0.006	Accepted
H_{1c}	0.417	0.001	Accepted
H_{1d}	0.389	0.003	Accepted
H_{1e}	0.389	0.003	Accepted
H_{1f}	0.377	0.005	Accepted

Source: Survey data 2019

Hypothese built for the correlation analysis which was carried out to demonstrate the indirect relationship among variables as illustrated by Table 3, indicates a significance level below 5% (0.05).

Hence it can be concluded that attitudes towards SBS mediate the impact of PU, PEU, PT, PS and PR individually and

therefore supports the expectations of the researcher regarding the nature of the interrelation among independent variables, attitudes towards SBS (MV) and consumer intention to use SBS (DV).

When concerning the correlation – coefficient, perceived ease of use, perceived security, perceived risk, perceived trust and attitudes towards SBS have recorded a moderate level of positive correlation with consumer intention to use SBS whereas perceived usefulness has recorded a weak positive relationship with consumer intention to use SBS.

Multiple regression was performed since there were more than one independent variable. The linear relationship between intention to use SBS and attitudes towards SBS were analyzed initially by identifying PU, PR, PEU, PT and PS as the independent variables. To analyze the linear regression, Table 4. was generated using SPSS.

Table 4. Model summary

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.937[a]	.878	.875	.481

Predictors: (Constant), Perceived security, Perceived Usefulness, Perceived Risk, Perceived Trust, Perceived ease of use
Dependent Variable: Consumer intention
Source: Multiple Regression Output – IBM SPSS Statistics Viewer 2019

According to the Model Summary (Table 4.), Regression value was calculated as 0.937 showing a positive linear relationship with the dependent variable. R^2 value should be straight forward and it should always stand between 0 and 1.0. Higher the R^2 value is, the association between variables is better proved. The adjusted R^2 which is 0.875, is statistically significant as it suggests that the variance of the independent variables determines a value of 87.5% for the variance of

consumer intention to use SBS. Standard error in the model summary reveals how much the mean of the sample deviates from the mean of the population.

Table 5. ANOVAa

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2041.725	5	408.345	35.324	0.000[b]
Residual	277.44	24	11.56		
Total	2319.165	29			

Dependent Variable: Consumer intention
Predictors: (Constant), Perceived security, Perceived Usefulness, Perceived Risk, Perceived Trust, Perceived ease of use
Source: Multiple Regression Output – IBM SPSS Statistics Viewer 2019

ANOVA (Analysis of Variance) table which is also an output of regresson analysis, confirms the significance of the linear relationship by carrying an F value of 35.324 as demonstrated by Table 5. Significance of the relationship is also proven by the ANOVA table where p<0.05 at a confidence level of 95%.

Table 6. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.093	.086		1.078	.282
Perceived Usefulness	.377	.053	.395	7.099	.000
Perceived Risk	.102	.063	-.090	1.628	.016
Perceived ease of use	.107	.064	.108	1.669	.096
Perceived Trust	.067	.063	.064	1.057	.052
Perceived security	.332	.066	.322	5.065	.000

Dependent Variable: Consumer intention
Source: Multiple Regression Output – IBM SPSS Statistics Viewer 2019

Table 6. interprets the standardized beta coefficients which is the next output of regression analysis that is used by researchers to determine the relative importance of independent variables on the dependent variable and therefore the following equation can be obtained as per the beta values of the above table.

Consumer intention to use SBS = 0.395(PU) + -0.90(PR) + 0.108(PEU) + 0.064(PT) + 0.322(PS)

The above equation depicts; increase in one unit of PU while holding all the other variables constant, will increase 0.395 units in consumer intention to use SBS in average. Likewise, increase in one unit of PR while holding all the other variables constant, will decrease 0.90 units in consumer intention to use SBS in average, increase in one unit of PEU while holding all the other variables constant, will increase 0.108 units in consumer intention to use SBS in average, increase in one unit of PT while holding all the other variables constant, will increase 0.064 units in consumer intention to use SBS in average and increase in one unit of PS while holding all the other variables constant, will increase 0.322 units in consumer intention to use SBS in average.

"Sobel test" which is also known as the mediating analysis, was also carried out by the researchers to confirm the mediating effect, further ensuring the conditions proposed by Baron & Kenny, (1986). To test the significance level of the mediating effect, Sobel z-statistics (developed by Sobel in 1982) were used. According to Sobel z-statistics shown in Table 7, mediating effect of the five models used in the study are significant at $p < 0.05$. Therefore, it can be concluded that there is a mediating effect of attitudes towards SBS on consumer intention to use SBS.

Table 7. Mediating effect of attitudes towards SBS

Models	Sobel's test Statistics	P Values
PU ⟶ Attitudes towards SBS	2.833	0.006
PR ⟶ Attitudes towards SBS	3.413	0.0006
PEU ⟶ Attitudes towards SBS	1.994	0.046
PS ⟶ Attitudes towards SBS	2.078	0.037
PT ⟶ Attitudes towards SBS	2.212	0.026

Source: Survey data 2019

Discussion

The main objective of this research is to understand the key factors that could affect the intention of banking customers to use SBS in the context of Sri Lanka. In order to achieve this, a model was proposed including variables namely PU and PEU from TAM with three other extended variables (PS, PR and PT). Statistical findings confirmed the predictive power of the proposed model to justify enough variation for the intention to use as the overall value of R^2 was measured at 0.878 (87.8%), which is beyond the proposed minimum acceptable value of 30%. In addition, result of this study has been similarly mentioned to some extent by several self-banking studies conducted in other developing countries.

Conveniently selected samples were used in this analysis, which is the most appropriate sampling technique that can be used to reach customers who use SBS since the researchers were limited when obtaining accurate details of banking customers in Sri Lanka as banks were

unable to provide the expected details in order to protect the confidentiality of their customers, agreeing the conditions proposed by Sekaran & Bougie, (2016). Even though, convenience sampling approach includes issues related to justifications and sampling partiality, this study addressed these problems to some extent by providing a moderately large sample size and data was collected covering the entire Colombo metropolitan area including respondents with different levels of education, occupations & etc.

Second objective of this research is to identify the most important factor to promote SBS in Sri Lanka. Since statistical findings have highly demonstrated that PU, with its regression weight of 0.395, is the significant factor predicting the intention to use SBS, it implies that Sri Lankan banking customers are more likely to use self-banking units if they are felt it as an advantageous technology and consuming SBS carry a greater efficiency and productivity. Therefore, PU is the most important factor to promote SBS in Sri Lanka. With its regression weight of 0.108, PEU determines that these customers are more likely to adopt SBS if the systems are not problematic and requires no extra exertion and energy. Nonetheless, a particular level of skills and knowledge is required to use such software properly, based on the available self-banking framework. With a regression weight of 0.322, the study has found PS has a positive impact towards the intention of customers to use SBS in Sri Lanka, suggesting that, greater the security provided by banks, greater the intention to use SBS. PR, with a regression weight of 0.090, determines that these customers are more likely to adopt SBS if they're ensured the systems secure the confidentiality of their personal information and security features are highly incorporated in self-banking units.

As the regression weight of PT determined a value of 0.064, it is considered to be the model's lowest influencing factor. It further implies that customers in Sri Lanka would be more motivated if they are ensured SBS are trustworthy and their operations can be carried out as planned.

These results will assist banks to implement appropriate strategies by understanding the main concerns of consumers towards SBS and as a result, suggestions for more effective and efficient SBS to retain more consumers can be provided.

Conclusion

According to the Diffusion of Innovations theory, it is important to understand the concept of SBS in the early phases of adoption. Active presentations using all forms of media promotions will be beneficial when introducing the services to a broader audience and educating prospective consumers on benefits of SBS which are linked to time saving, comfort at any time, low cost and information availability. Several other important implications have also been identified while conducting the research which can be recommended for banks in order to provide better strategic perspective to design and implement SBS in Sri Lanka. Security issues related to SBS must be addressed to ensure SBS' performance in Sri Lanka. More precisely, problems related to perceived risk including error-free transactions, reliability of SBS and relative security features must be addressed as well. Further, banks must communicate to their customers regarding how they will be guided to solve the difficulties that occur while engaged with SBS. Finally, according to the findings of this study, it can be concluded that banks must play a prominent role in shaping insight, and thus the attitude and purpose towards SBS on potential users of technology-based

banking facilities. In addition, these suggestions can be implied practically for banks and their guidelines.

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