Diffusion of Mobile Banking: The Case of a Commercial Bank in Sri Lanka

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Abstract
The use of mobile applications rises quickly and has been used in many sectors including banking sectors where the traditional branch banking is offering a direction to mobile banking. However there is an argument on that the acceptance of technology is quite low among the users. Hence it is appropriate for the service providers to understand and concentrate the needs of the customers so as to enhance their mobile banking experience. The aim of this survey is to assess the key factors that influence the usage of mobile banking services in Sri Lanka. A sample of 193 bank customers collected through a structured questionnaire was used. Descriptive and Pearson correlation were employed for analysis. The study found that customers' attitude towards mobile banking and convenience, perceived usefulness, perceived ease of use, perceived credibility, social influence and relative advantage have a significant positive influence while perceived risk and transaction cost have a significant negative influence. Customers' awareness and convenience in usage have relatively greater influence on the usage of mobile banking services than other factors.

Key Words: Mobile Banking, Customer Attitude, Acceptance of Technology

Introduction

In the recent past firms accelerated their exertions to convert the infrastructure to accommodate not only the utilization of Information and Communication Technology applications, but also the implementing policies that enable employees to use personal connected mobile devices at work in a controlled and safe way. In the mobility era, the knowledge within a centralized knowledge management server can be easily accessed over the Internet by the client mobile equipment from distinct locations.

By identifying these great potentials, firms are functioning towards recuperating their customer experience through the use of flexibility allied to advanced analytics, cloud computing, and social media vial mobile knowledge management. This facilitates the firms to expand their knowledge of customers on an individual level and give attention to their needs in an innovative ways. Such a prolonged reach and comprehensive knowledge about the customer behavior allows for faster decision making and better strategic planning, ultimately creating a more dynamic and effective business milieu.

The Banking and Financial Services industry faces significant challenges in an increasingly changing global environment. The advent of Information and Communication Technology (ICT) in banking operations virtually led to prevalence of modern banking methods over traditional methods of banking that have been in existence in different countries for decades. Mobile phones have created a platform to expand commercial transactions in a very easy manner and have created a wide array of business opportunities through the expansion of wireless communication. Mobile banking is a channel whereby the customer interacts with a bank via a mobile device. It is one of revolutionary step of the delivering banking business, within bank premises as brick and mortar method has been transformed to deliver banking transactions through mobile networks at any time any place using a customers' mobile phone.

Mobile banking refers to the provision and use of banking and financial services through mobile telecommunication devices such as mobile phones or tablets (Goyal, 2012). Some

researches consider the mobile banking as one of the most value adding and important mobile services available to consumers (Gu, Lee, &Suh, 2009). The essence is all about getting banking services to the unbanked, those who do not have bank access or bank accounts, and those who are at the bottom of the economic pyramid, often living in remote areas. It allows customers to check account balances, transfer funds between accounts and order for electronic bill payments, Cheque book request, Cheque status inquiry, view account history or mini statement (Salzaman, Palen & Harper, 2001).

Currently, mobile banking access is implemented through three different technology solutions. These are browser-based applications, messaging-based applications and client-based applications (Lee, Lee & Kim, 2007). The browser based application is through the Wireless Access Protocol (WAP) enable internet access. On the messaging-based applications, the communication between the bank and the customer is carried out via text messages. The client based application there is special software installed in the mobile phone.

Across the developing world, there are more people with mobile phones than with bank accounts (Portteous, 2007). According to the International Telecommunications Union's facts and figures for 2015 the penetrations rates for mobile subscriptions will hit 97% whre more than 7 billion mobile cellular subscriptions up from 738 million in 2000 (Brahima Sanou, 2015). Thus, many entities with a global development focus have turned to the mobile phone as a potential platform for delivering financial services to the unbanked.

Central Bank of Sri Lanka (CBSL) statistical bulletin of fourth quarter 2017 reports that the volume of transactions in mobile banking increased to 947,774 in 2017 against 110,946 in fourth quarters of 2013. This means about 854.26% appreciation within a period of four years. The value of transaction increased to a great extent. However compare to other countries the figure is not in a significant level. Bank customers perceived the use of mobile banking is unsafe, system deficiencies and the relatively high costs. The mobile banking services are still in immature stage, leaving a great deal of room for development.

There is a need, therefore, to understand user's acceptance and adoption of mobile banking. Attitude plays a vigorous role to accept or rejection of this technology. Mobile banking is new technology for banking. As Maduku (2013) Understanding the predicators of customers' attitude is imperative, as it is argued that this attitude has a strong, direct and positive effect on consumers' intentions to actually use the new technology or system.

The primary objective of this study is to explore the factors which construct the attitude towards the mobile banking services. The questions considered in the study are; what are the factors that ascertain the formation of attitude towards mobile banking among customers of Bank of Ceylon Sammanthurai Branch? And what is the relationship between perceived ease of use, perceived usefulness, perceived credibility, social influence, convenience, relative advantages, perceived cost, perceived risk and customers' attitudes towards mobile banking?

Methodology

Non probability convenience sampling was used as the sampling technique in this study. Total of 200 questionnaires were distributed among the account holders of Bank of Ceylon, Sammanthurai branch who are holding savings, current and fixed accounts in the bank. All

the questionnaires were circulated to the respondents through self-administer approach. Questionnaires were accomplished anonymously by the respondents and returned back to the researcher. Out of this 07 questionnaires were not furnished properly. Therefore 193 usable and qualified questionnaires were obtained for data analysis.

Procedures and Measures

The questionnaire consist few questions which was adopted from Gu J C et al., (2009) and was slightly modified in view of the variables of the study and few questions were added to the questionnaire based on the literature review. The questionnaire had three sections, section - A gathered information on demographical information, section - B collected data related to mobile banking awareness and services and section - C consist of 35 fixed response questions to measure the consumer attitude towards the mobile banking in BOC, Sammanthurai branch. 35 statements covered 8 constructs of mobile banking and its effect on customer attitude and behavior. The variables for this study are; perceived ease of use (5 items); perceived usefulness (4 items); perceived credibility (4 items); social influence (4 items); convenience (5 items); relative advantage (4 items); perceived cost ((3items); perceived risk (3 items) and customer attitude (3 items) respectively.

Four point Likert scale ranging from strongly disagree (1) to strongly agree (4) was used to measure the response of all dimensions of mobile banking and its effect on customer attitude. The Cronbach's Alpha was used for measuring the total consistency between all items of the instrument and internal consistency among items for each dimension. The table – 1 showed that the result of the Cronbach's Alpha test was 0.801 for the entire items that is greater than 0.70 which is the minimum proposed composite reliability value and each dimension was above 0.60 which is acceptable in social science research.

Table 1 – Reliability Statistics of Study Dimensions

Dimensions	**No of items**	**Split half's value**
Perceive ease of use	05	0.944
Perceived usefulness	04	0.790
Perceived credibility	04	0.845
Social influence	04	0.881
Convenience	05	0.816
Relative advantage	04	0.853
Perceived cost	03	0.603
Perceived risk	03	0.735
Customer attitude	03	0.665

Results and Discussion

In order to provide strength to this survey a descriptive analysis was conducted to identify the demographic profile of respondents for the study includes gender, age, education, and occupation and the awareness and usage of mobile banking among the customers of Bank of Ceylon, Sammanthurai Branch.

Table 2 Descriptive Statistics

Variable	Classification of Variables	Frequency	Percentage (%)
Gender	Male	88	45.6
	Female	105	54.4
Age	18 – 24	55	28.5
	25 – 34	65	33.7
	35 – 44	34	17.6
	45 – 54	27	14.0
	Above 54	12	6.2
Marital Status	Married	98	50.8
	Unmarried	78	40.4
	Widow	10	5.2
	Divorced	7	3.6
Level of Education	Up to O/L	40	20.7
	A/L	91	47.2
	Diploma / Degree	60	31.1
	Masters/Ph.D	02	1.0
Occupation	Student	23	11.9
	Self employed	41	21.2
	Government job	49	25.4
	Private sector	35	18.1
	Retiree	14	7.3
	House wife	18	9.3
	Others	13	6.7

In relation to the gender, the results revealed that 45.6% of customers are male and 54.4% were female. It can be said that females are involved in banking activities than males. Among the female bank customers more than 50% of the female customers are inclied with mobile banking usage. More than 50% of the male customers do not willing to involve in mobile banking activity.

According to the data collected from the customers, the sample comprised of five different age categories such as 18-24, 25-34, 35- 44, 45-54 and above 54 years old. Here age composition began with the year 18, because minor account holders are not considered to the sample. A large pool of respondents giving a percentage of 33.7% falls in the age group between 25 – 34 years old followed by the age group 18 – 24 which consist of 28.5%. The

lowest percentage of the respondent's age group is above 54 which represents 6.2%. the findings suggests that the respondents in the age bracket of 18-34 a young adults are more likely to use mobile devises for their banking activity than older. Such issue could possibly return to the fact that older customers are more likely to not have the important skill and experiences that enable them to properly use the mobile banking. Younger customers are seem to have more capability and confidence to interact with such sophisticated technology. Data was collected according to four different level of educational background. The highest percentage of the educational level category is A/L it comprises with 47% of the sample. People with good level of education are more likely to have the sufficient knowledge and skills that may help them to cope with new technology rather than less educated.

Mobile Banking Usage

Even though the respondents are aware of the mobile banking facility it seems that very few only consuming it. According to table 2 shows that most of the respondents (52.4%) were not using the mobile banking facility where as lesser respondents were using the facilities provided by bank.

Table 02: Mobile Banking Usage

Usage	Frequency	Percentage
Yes	92	47.6
No	101	52.4

So it clearly showed the need for the study identifying the factors influencing the attitude towards use of mobile banking in BOC, Sammanthurai Branch Batticaloa.

Table 3: Correlation Analysis for the Variables of the Study

		CA	PEU	PU	PC	SI	C	RA	PCo	PR
CA	Pearson Correlation	1								
	Sig. (2-tailed)									
PEU	Pearson Correlation	.484**	1							
	Sig. (2-tailed)	.000								
PU	Pearson Correlation	.378**	.596**	1						
	Sig. (2-tailed)	.000	.000							
PC	Pearson Correlation	.581**	.738**	.624**	1					
	Sig. (2-tailed)	.000	.000	.000						
SI	Pearson Correlation	.543**	.812**	.464**	.681**	1				
	Sig. (2-tailed)	.000	.000	.001	.000					
C	Pearson Correlation	.714**	.518**	.517**	.589**	.547**	1			
	Sig. (2-tailed)	.000	.000	.000	.000	.000				
RA	Pearson Correlation	.542**	.435**	.481**	.491**	.458**	.759**	1		
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000			
PCo	Pearson Correlation	-.378**	-.063	-.083	.027	-.137	-.277**	.221**	1	
	Sig. (2-tailed)	.000	.381	.250	.711	.057	.000	.002		
PR	Pearson Correlation	-.407**	-.060	-.092	-.009	-.126	-.249**	-.213**	-.908**	1
	Sig. (2-tailed)	.000	.407	.204	.900	.080	.000	.003	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

The table-3 revealed that the variable convenience has significant strong positive relationship with attitude toward mobile banking in Bank of Ceylon Sammanthurai branch. The correlation coefficient value 0.714 ($p < 0.01$) indicates that if user-friendliness is increased customers' attitude toward mobile banking will increase because of customers like easily bank access to manage their time.

The perceived ease of use, perceived usefulness and customers' attitude towards mobile banking has a weak positive significant relationship. Correlation coefficient value is 0.484, 0.378 ($p<0.01$) respectively. It means the degree to which a person believes that using a particular system would be free from effort and enhance their performance. If perceived ease of use and perceived usefulness is increased the customer attitude towards mobile banking will increase since the customers in Sammanthurai area have not well educated and knowledge with regard to availability and use of mobile banking people may depends on the traditional systems.

Among other variables perceived credibility, social influence and relative advantage have a moderate, positive significant relationship with attitude towards mobile banking in Bank of Ceylon Sammanthurai branch. The correlation coefficient of perceived credibility, social influence, relative advantage are 0.581, 0.543, 0.542 ($p<0.01$) respectively in relation to customers' attitude towards Mobile Banking. It indicates that, there is a moderate positive significant relationship between perceived credibility and attitude towards mobile banking in bank of Ceylon Sammanthurai branch it means that, if perceived credibility increased customers' attitude will be increase because of customers may have expect enhance the security features consistently by practicing transparency management during the process of monetary transactions.

Significant value of 0.000 is lower than 0.01 confidence interval which means there is a significant relationship between perceived credibility and customers' attitudes. Therefore null hypothesis is rejected and alternative hypothesis accepted.

There is a moderate positive significant relationship between social influence and customers' attitude towards mobile banking in bank of Ceylon Sammanthurai branch. The correlation coefficient value (r) is 0.543. According to that, if social influence is increased the customers' attitude towards mobile banking will increase because of customers may have interest to see and follow others' people attitudes.

Perceived cost and risk shows a significant negative relationship with customer attitude towards mobile banking in Bank of Ceylon Sammanthurai branch. Cost and customers' attitude towards mobile banking has a small negative relationship. The correlation coefficient value (r) is -0.378 with the par value less than 0.01 confidence level. It means that, if cost is increased then customers' attitude will decrease because of customers may have like to save their money in effective manner. Cost and financial expenses in the form of bank charges, mobile banking network charges for sending communication traffic (SMS) and mobile device cost if the mobile banking services and intention to use mobile banking and this variable is kind of weakness of mobile banking services.

Perceived risk also shows a negative significant relationship with customers' attitude towards mobile banking in Bank of Ceylon. Risk and attitude towards Mobile Banking has a small negative relationship as (r) value is -0.407 with the par valur less than 0.01. It means that, if risk is increased then customers' attitude will decrease because of customers may have like

flexibility, security and accessibility features to mobile banking services. The primary reasons for this is attributed to people not knowing how the technology works and assuming it was risky mode of transactions. It was attributed to the security of information on the mobile device.

Conclusion

It was established that convenience has a strong positive relationship with customer attitude towards mobile banking usage. It is followed by relative advantage, social influence, perceived credibility and perceived ease of use which has moderate relationship with respondents' attitude towards mobile banking. The cost and the risk have a significant negative relationship with customer attitude towards mobile banking services. Since the customers have a perception that mobile banking is costly one, bank should introduce incentives and promotions to persuade people to use mobile banking services. Further the banks should improve services to reduce the perception in relation to the risk and try to waive the transaction cost for the service to improve the accessibility among the customers of BOC, Sammanthurai branch.

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