

Study on Factors Affecting to the Customers' Intention Towards Usage of Mobile Banking Application in Gampaha District

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Abstract

Mobile banking is a fast growing, convenient and portable banking service that is being used by a few in the world in relation to the expected number but has become a global phenomenon. Extensive growth and development of new and improved information technologies has made mobile devices are very powerful, especially in their use in banking. This study explored factors affecting to the usage of mobile banking applications in Gampaha District using structured online questionnaire created using standard variables in the extended Technology Acceptance Model (TAM). Data related to the research was collected by 100 selected respondents and the purpose of this study is to find out the factors that affect whether or not use the mobile banking application. The results of the factor analysis are usefulness and convenience, interaction of the application, cost reduction and perceived risk which shows that these facts will help the mobile banking application service to become more popular and improved.

Key words: *Factor analysis, Mobile banking application, Model (TAM), Technology Acceptance*

1. Introduction

Mobile banking is defined as a service that allows customers to access their account information and quality for real transactions using mobile phones in a secure and reliable manner. There is inquiry, money transfer, bill payment, check book request and many more banking services (Ei' and Safi, 2018). The growth of mobile banking is driven by various facilities such as ease of banking operations, greater customer access and integration of other mobile commercial services with mobile banking. There is no place limit in mobile banking as the growth of mobile phones is higher than that computer. In fully enhances the authentic city of personalizes and personalized transactions and

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100% accessible to users (Nivetha, Pujitha, Preethi, and Yashavanthini, 2013; Gunarathna, 2021). Although there are many inherent benefits, M-banking suffers from low and slow use by consumers which makes it vital to study and explain many studies in different contexts globally (Palani and Yasodha, 2012). In Sri Lanka there is not much literature to find out regarding to M-banking application with using Technology Acceptance Model (TAM). Therefore, this study has been developed as an answer to the use of mobile banking application.

Over the past decades, with the rapid advancement of mobile technology, Mobile banking (M-banking) has provided a significant opportunity for the banking sector (Tam & Oliveira, 2017; Troy & Connor, 2016; Zhang et. all, 2018; Luarn & Lin, 2005). M-banking is defined as a channel through which a customer communicated with a bank through a mobile device such as a mobile phone or personal digital support (PDS) (Tron & Connor, 2016). Especially the financial institutions, provides services or products to banking sector for the research, through M-banking systems using portable technologies or mobile devices. The expansion of mobile banking services has enabled customers to perform a number of banking functions including balance checking, money transfer, check depositing, stock trading and many other financial and non-financial banking services spreads throughout the developed and developing world (Zhang et. all, 2018; Shaikh & Karjalutho, 2015; Troy & Connor, 2016). The number of people relying on mobile devices for banking services is increasing compared to the service of physical banks (Srivastava, 2013; Gunarathna, 2021). Today the banking industries focus on mobile banking to provide branchless banking service to the customers and it provides convenient, speedy and dependent service to the customers (Nupur, 2010). Among other advantages of financial entities' online banking and mobile applications is that it allows users to access their accounts from anywhere and anytime. It represents an advantage over the traditional banks (Munoz-Leiva, Climent-Climent & Liebana-Cabanillas, 2016). Despite all this, it is important to note that the number of clients' operation through internet banking has not increased as much as expected. Lack of distinction between banks, lack of trust in the system, lack of personalization or security have made many customers reluctant to use such tools (Munoz-Leiva et al., 2010).

According to the Central Bank Report of Sri Lanka (CBSL) 2020, the total population 21,919,000 and there are 26 commercial banks operate with 3604 branches across the country and almost every bank offers mobile bank application. With 62% internet penetration and 149% mobile penetration, 71% of those mobile connections are broadband (3G - 5G) in Sri Lanka. It can be concluded that the customer base in Sri Lanka is embracing digital transformation, so that banks and financial institutions can rapidly expand their digital platform (Sri Lanka Banking Report, 2020). However, before Covid - 19, CBSL was trying to accelerate Sri Lanka's journey towards becoming a cashless society. Among the many initiatives taken by CBSL were retail-level business aimed at encouraging the public to use mobile applications and Lanka QR code and digital payment such as credit and debit cards (Sri Lanka Banking Report, 2020). Furthermore, according to the Central Bank Report "The active use of Information and Communication Technology (ICT) in economic activities such as e-banking, M-banking, e-bus tickets and mobile outlets has also increased". Due to the favourable situation, banking services are able to provide online services to Sri Lanka customers. Many commercial banks have already introduced their mobile banking facilities to their customers and many telecommunication sectors have also started transferring funds to their customers through mobile technology (Telecommunication Regularity Commission of Sri Lanka - TRCSL, 2017). The CBSL report (2020) shows that the acceptance and use of mobile technology is on the rise in Sri Lanka. Banks' frequent advertising of their mobile bank applications on social networking sites and websites shows that their customers use very little of those applications (Samsudeen et al., 2015). These applications have many such as queuing up and reducing the cost of going to a bank branch and making a small transaction, but bank customer can see the rate of use of that technology. It is not compatible with the use of mobile technology and is still growing at a slow pace (Alwan et al., 2016).

As the use of modern technology by Sri Lankan consumers are less, the behavioural motivation to use M-banking is also very low in the country. Studies in Sri Lanka has found that customer adoption or use of online banking, M-banking, telephone banking is less than 0.1% with the exception of ATM services (Hettiarachchi, 2014). Because customers have poor awareness or understanding of these services, it is very difficult to persuade

them to switch from their traditional banking practice to these services (Suraweera et al., 2012).

Hew, Lee, Ooi, and Wei (2015) suggested that easy-to-use applications attract customers to use them. Furthermore, a significant and positive link between effort expectation and ease of use has been established, and ultimately consumer perception of the usefulness of applications will be directly affected by the user-friendliness of the applications. Finally, Hsu and Lin (2016) suggested that stickiness and social recognition significantly affect user intent to make in-app purchases. TAM is considered to be the most robust, partisan, and powerful model of innovation recognition behavior (Davis, 1989; Pavlou, 2003), so we consider this theoretical model as the basis for purpose. Accordingly, due to the contribution of the TAM model to the use of M-banking application, it is possible to determine the reasons for the lack of usage.

2. Research Methodology

2.1 Objective of the study

To identify the factors affecting to the usage of M-banking applications in Gampaha district.

The scope of this study will cover key factors derived from the Technology Acceptance Model (TAM) including the intent to use mobile banking services, usefulness and ease of use (Davis, 1989). After critically reviewing the literature on the development of mobile banking status in Sri Lanka, gathered some important information that is in the context of this study. The variables perceived risk, perceives cost, relative advantages and perceived interactivity are added to TAM to develop a research model to find out the variables that affect the usage of mobile banking in Sri Lanka. Accordingly, the conceptual framework constructed with six variables such as, Perceived Usefulness, perceived ease of use, Relative advantages, perceived risk, perceived cost and perceived interactivity.

The population of this study included all commercial bank customers with or without experience in using mobile banking applications in Gampaha district. As mentioned above, research was concluded with users who are use or not use mobile banking applications above 18 years old, under Yamane sampling method that is not limited to one particular bank. That is 100 respondents

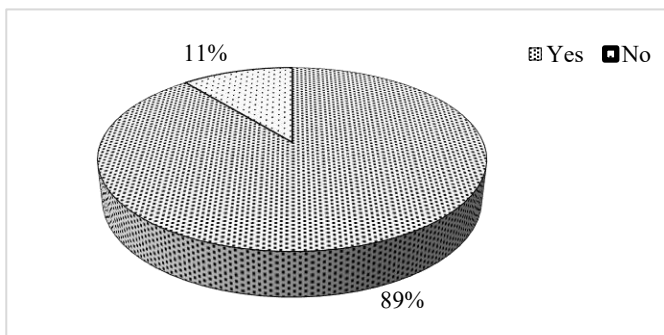
participated in this study. This research has utilized two types of data types necessary to conduct this study such as secondary and primary data. In order to accomplish the main problem and objective of the study, factor analysis is used to find out the main factors affecting to the usage of mobile banking application. Also, determine the relationship between TAM model factors and usage of mobile banking application in logistic regression analysis method.

3. Results and Discussion

3.1 The Information about whether the application has been used before

As the research respondents commented, the figure 01 below shows information on whether the mobile banking application has been used before or not. The number of people who have used mobile banking app is higher than the count of who do not use it. That is, the percentage used as it is 89% and the count of not used is 11%.

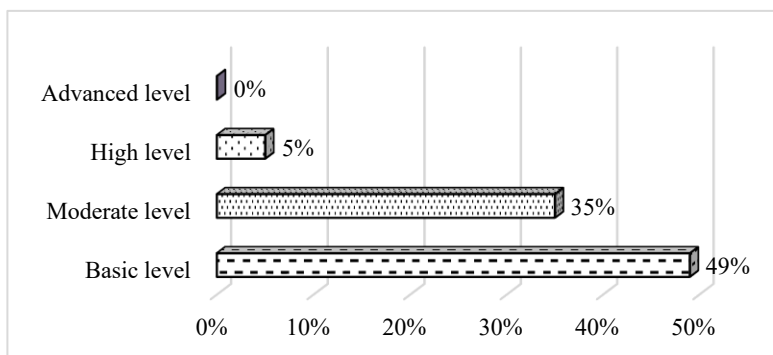
Figure 01: Have you used a Mobile Banking App



Source: Survey Data, 2022

3.2 Usage status of Mobile Banking of the Respondents

Figure 02: mobile banking service in use



Source: Survey Data, 2022

The sample respondents who are using the mobile banking service, 49 count of responded that it was for the basic level and that they making only bank transactions provided by the mobile banking app. The lowest usage services in the same figure 02 are high level users who are 5 percent and their app linked to the insurance plan. There are no advance level users who are making mortgages, stocks and other investments. Only 35 percent of the respondents are making bill payments and credit cards.

As can be seen from the use of mobile banking services, traditional banking services such as money transfer, account balance checking, bill payment and credit card transactions are the most frequently used services, which implies that customers can get greater benefits from mobile banking through such payments. That means new services need to be included in the application. Although mobile banking services are less likely to be associated with the insurance plan and stocks, according to the sample respondents, due to the fact that payment can be made anywhere without transportation and time costs, but one of the intentions here is to make it easier to connect through the app.

Table 01: Mobile banking application types used by respondents

		Responses	
		N	Percent
Types of banking apps	BOC Smart Passbook	25	20.0%
	BOC Smart Pay	11	8.8%
	Peoples Wave	37	29.6%
	Peoples Pay	8	6.4%
	ComBank Digital	18	14.4%
	Sampath WePay	4	3.2%
	Sampath Wishva	15	12.0%
	NSB Pay	7	5.6%
Total		125	100.0%

Source: Survey Data, 2022

According to the table 01 the majority of the respondents have Peoples Wave app for their banking transactions and other financial and personal works. It is 29.6% of total sample respondents. Therefore, BOC Smart Passbook app users are 25 (20%) and 18 of the respondents have been used Combank Digital application in 14.4 percent. Sampath Wishva banking app users are 15 of the respondents and it is 12 percent. As mentioned above 75% of the banking users are responded to this multiple-response question in the questionnaire. The

remaining 25% is subdivided in this way, 8 of the respondents have Peoples Pay app, 7 of the respondents have NSB Pay app, 4 of the respondents have Sampath WePay app and the percentages are 6.4%, 5.6%, and 3.2% respectively. As can be understood from this most of the banking users like to be use Peoples Wave, BOC Smart Passbook and Combank Digital applications.

3.3 Factor analysis for identify the factors influencing the use of mobile banking application

Factor analysis has been done to identify the priority factors affecting the use of mobile banking app as follows.

Table 02: Factors used to analysis

Perceived Usefulness	M-banking app improves how I do my banking	PU1
	M-banking app is useful for me	PU2
	M-banking app makes my financial life effective	PU3
Perceived ease of use	Learning to use M-banking app easy for me	PEOU1
	M-banking app is easy to use	PEOU2
	Interaction with M-banking app does not require a lot of mental effort	PEOU3
Relative advantages	I find the process of completion of the task on M-banking app needs a few clicks (screen touches)	RA1
	I think the availability of access to M-banking app is 24/7	RA2
	M-banking app makes simple to navigate	RA3
Perceived risk	I find the risky to do large amount of money transactions on M-banking apps	PR1
	I think M-banking app will not deny the transactions that occurred by me	PR2
	M-banking app cannot verify the actual completion of the transactions	PR3
	A disruption of the usage of mobile data probably happens at any time	PR4
Perceived cost	The app reduces the cost of banking services	PC1
	The M-banking app minimize the cost of accessing bank branches (transport and other)	PC2
Perceived interaction	The content of M-banking app is useful and clear	PI1
	M-banking app updates regularly	PI2
	On the M-banking app, I can find guidelines about customer policies such as privacy and disputes	PI3
	I believe my bank information is well secured by the provider of M-banking app	PI4

	I think my M-banking provider checks all communications between the app and me for protection from hacking or eavesdropping	PI5
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Sources: Aboelmaged and Gebba, 2013, Mohammad, 2015, Walker and Johnson, 2006

These tests inspect the validity of the data used for factor analysis, focusing on the KMO test and Bartlett’s test in factor analysis. Where the KMO value is sufficient for the sample and the Bartlett’s test, tests the sphericity and the KMO value must be greater than 0.5 and Bartlett’s test must be less than 0.05 (P-value). According to this study KMO value is 0.858 and P-value is 0.000, so the factor analysis is very suitable and acceptable for objectives of the study.

Table 03: KMO and Bartlett’s test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.843
Bartlett's Test of Sphericity	Approx. Chi-Square	1012.694
	df	190
	Sig.	.000

Source: Survey Data, 2022

The main purpose of this research is to study the reasoning factors that influence the use of mobile banking applications. The following is how the above objective was achieved by studying the results obtained using the factor analysis method.

Table 04 shows that there are only 4 components with as eigenvalue greater than 1. Based on the eigenvalue greater than 1, these four components are taken as the main factors, which describe 62% of the variation of the variable considered. That is 25.017% of the variance of the 20 variables considered here is described by the first component, 42.307% by the second component, 52.335% by the third component and 62.235% by the fourth component. Accordingly, above table shows the value for the component 1 at $7.339 > 1$, component 2 at $2.310 > 1$, component 3 at $1.432 > 1$ and fourth component at $1.367 > 1$ respectively. Thus, representing four expression sets of 20 variables. However, four components are sufficient to represent all the features.

Table 04: Total variance explained

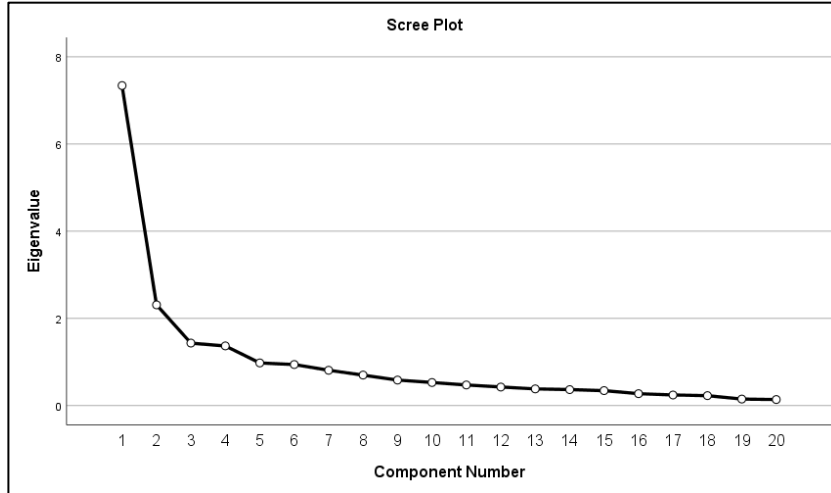
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.339	36.696	36.696	7.339	36.696	36.696	5.003	25.017	25.017
2	2.310	11.548	48.243	2.310	11.548	48.243	3.458	17.290	42.307
3	1.432	7.158	55.401	1.432	7.158	55.401	2.006	10.028	52.335
4	1.367	6.834	62.235	1.367	6.834	62.235	1.980	9.900	62.235
5	.977	4.885	67.120						
6	.941	4.704	71.824						
7	.810	4.049	75.874						
8	.698	3.491	79.364						
9	.584	2.922	82.286						
10	.529	2.644	84.931						
11	.472	2.358	87.289						
12	.425	2.126	89.415						
13	.382	1.910	91.325						
14	.366	1.830	93.155						
15	.342	1.709	94.864						
16	.272	1.360	96.224						
17	.243	1.213	97.436						
18	.226	1.131	98.568						
19	.149	.744	99.311						
20	.138	.689	100.000						

Source: Survey Data, 2022

The scree Plot chart can be used to gain understanding of the main component selected for analysis. Scree Plot is a graph of eigenvalue against all factors. The chart is useful for determining how many factors should be retained. The very important thing is where the curve begins to flatten. It can be seen that the curve between factors 4 and 5 begins to flatten. Note that since the eigenvalue of factor 5 is less than 1, only four factors are retained. There are

4 main factors influencing the use of mobile banking applications in the Gampaha district as the other values are below 1.

Figure 03: Scree Plot chart of factor analysis



Source: Survey Data, 2022

Table 05: Rotated component matrix

Factors	Component			
	1	2	3	4
PU1	.773	.166	.126	-.022
PU2	.796	.126	.157	.031
PU3	.719	.443	-.066	-.077
PEOU1	.858	.185	.190	.028
PEOU2	.823	.255	.104	.046
PEOU3	.840	.114	.135	.016
RA1	.411	.520	.428	.217
RA2	.277	.025	.705	-.103
RA3	.579	.221	.478	-.078
PR1	.010	-.043	-.065	.792
PR2	.082	.576	-.122	.484
PR3	.136	.308	-.461	.567
PR4	-.176	-.025	.189	.627
PC1	.384	.222	.246	.405
PC2	.127	.272	.624	.344
PI1	.366	.495	.447	.008

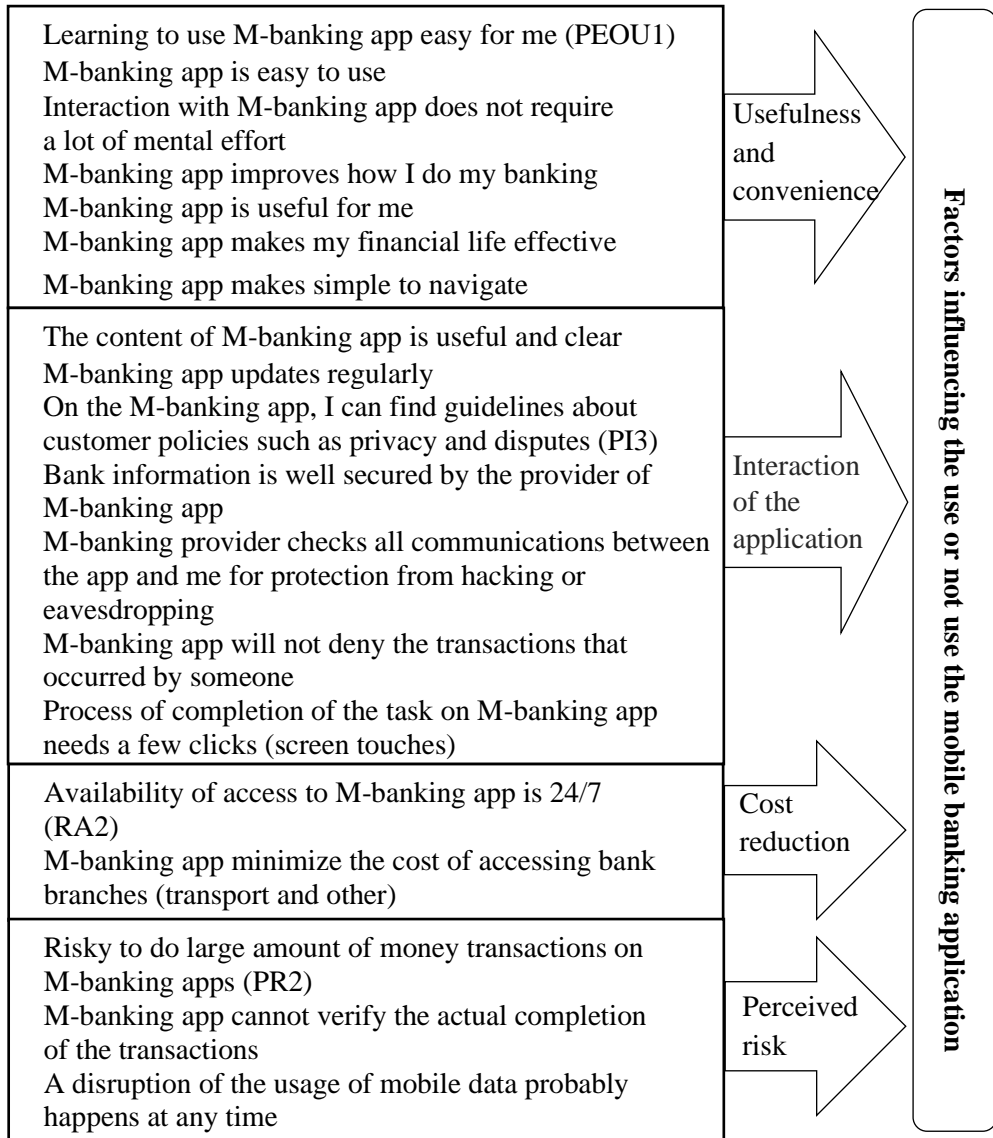
PI2	.090	.739	.116	.028
PI3	.165	.772	.231	.015
PI4	.289	.693	.049	-.109
PI5	.291	.606	-.027	.187

Source: Survey Data, 2022

According to the rotated component matrix, these factors have been selected as the first component among influencing the use of mobile banking applications, such as learning to use M-banking app easy for me (PEOU1), M-banking app is easy to use (PEOU2), interaction with M-banking app does not require a lot of mental effort (PEOU3), M-banking app improves how I do my banking (PU1), M-banking app is useful for me (PU2), M-banking app makes my financial life effective (PU3) and M-banking app makes simple to navigate (RA3). It is called the first component because it has highest value as 0.858, PEOU1. It means that learning to use M-banking app easy for everyone can be identified as a first component.

The second component have been divided into the 7 factors too. There are the content of M-banking app is useful and clear (PI1), M-banking app updates regularly (PI2), on the M-banking app, I can find guidelines about customer policies such as privacy and disputes (PI3), bank information is well secured by the provider of M-banking app (PI4), M-banking provider checks all communications between the app and me for protection from hacking or eavesdropping (PI5), M-banking app will not deny the transactions that occurred by someone (PR2) and process of completion of the task on M-banking app needs a few clicks (screen touches) (RA1). In this component, as can be seen here PI3 has the highest value. Therefore, on the M-banking app, I can find guidelines about customer policies such as privacy and disputes are the influencing factor for the second component.

Diagram 01: Factors influencing usage behaviour of mobile banking application in Gampaha district under the PCF and Varimax method



Source: Survey Data, 2022

There are 2 factors for the third component, namely; the availability of access to M-banking app is 24/7 (RA2), and the M-banking app minimize the cost of accessing bank branches (transport and other) (PC2). RA2 factor is a highly rated factor in third component, so the availability of access to the application in 24 hours is pointed as the third component. Also, there are 4 factors included

into the fourth component of this analysis. Risky to do large amount of money transactions on M-banking apps (PR1), M-banking app cannot verify the actual completion of the transactions (PR3), A disruption of the usage of mobile data probably happens at any time (PR4) and the app reduces the cost of banking services (PC1) are the factors of final component. Among these factors, PR1 is the highest valued factor in this component. Actually, it means the large amount of money transactions are risky to do through the M- banking app.

4. Conclusions and Recommendations

This study also analysed the factors that influence the use of mobile banking app, which is the main objective of study, and identified factors such as usefulness and convenience, interaction of the application, cost reduction and perceived risk as the main influencing factors. According to the factor analysis usefulness and convenience, interaction of the application, cost reduction and perceived risk are the factors that can directly influence the use of mobile banking app. Most of the mobile banking application users in the Gampaha District studied, have relied on government banking applications based on their reliability. But private banks should be just as popular. It would be more appropriate if educating them for this traditionally takes place within individuals. Creating a favourable environment for customers to go to the bank for transactions is causing a popular discourse about the mobile banking app. As mobile banking can be used to reduce the congestion in traditional banking, improving the interoperability of mobile banking application is effective. Therefore, there are a number of significant options that can be included when designing and updating those applications.

Furthermore, the current conceptual model of this study can be applied to a sample in the Gampaha District or other districts or developing countries, and other non-Internet users can be contacted using a self-administered quiz instead of an electronic one. In addition, the current conceptual model can be applied in a variety of contexts of electronic banking channels, and beyond that this model is worth testing in other technical contexts. In addition, the mobile device type like smartphone and tablet may be considered a neutral variable in future research.

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