

The Analysis of Technology Acceptance Model on the Study of Consumer Attitudes toward the Intention to Adopt Mobile Banking App in Cambodia

Samros Em

Department of Business Administration
ACLEDA INSTITUTE OF BUSINESS
Email: somrosem@gmail.com

Sokha Norng

Department of Business Administration
ACLEDA Institute of Business
Email: norngsokha@yahoo.com

Chanthorn Thab

Department of Foreign Languages
ACLEDA Institute of Business
Email: thabchanthorn@gmail.com

ABSTRACT

This study explores the consumer attitude toward adopting mobile banking. This study uses survey questionnaires which were distributed to 204 Mobile Banking App users through online-and paper-based form; and a regression analysis is applied to identify the influential factors on the intention to adopt mobile banking. This study shows that most respondents are female and aged between 18 to 28 years, who use Toanchet. The paper provides an understanding of the three variables of TAM, namely perceived usefulness, perceived ease of use, and trust, impact positively on customer's attitude towards mobile banking app, which leads to the influence on intention to adopt mobile banking app. Consequently, this study complements the decisions of individuals and institutions. Individuals who are scholars and future researchers gain knowledge of the TAM model that it is suitable for studying and analyzing customer attitude on new technologies adaption. Institutions get points that should be supplemented to increase customer satisfaction, such as developing mobile banking applications that are easier to use, have more functions for completing transactions and accuracy in the system. This study suggests future research that extends the sample size may provide more useful information for designing a marketing plan and promoting banking service sector.

Keywords: TAM, Attitude, behavioral intention, mobile banking

1. Introduction

1.1 Background of the Study

In industry 4.0, information technology has improved hastily, and it has influenced the banking region as a globe. The affection for information technology in banking industry lead to the launch of mobile banking. Mobile banking is one of the many useful services that offers and helps the customers' financial transaction. Mobile banking service is part of Internet Banking, which changed the way bank consumers do in their daily activities. Banks not only use it to comfy the purchaser but also use it for the pattern of approach to decrease prices and expand profitability (Liao & Cheung, 2002). Customers use digital charge services because they assume that it is a beneficial way of making payments that push them to receive the new technology. Based on their analyses through the TAM model, attitude closer to technology acceptance has been the best to impact the intention to use digital payment (Cheng, Phou, & Phuong, 2018).

There is much research about mobile banking in developing and developed countries by the TAM model to investigate customers' attitude toward using mobile banking. The effect of mobile banking using might be different by countries because of users' attitudes toward intention to use mobile banking. Furthermore, from the previous studies in Cambodia, the researchers suggest that the future researcher undertake their study on the Technology Acceptance Model and Brand Knowledge toward Attitude on Technology Acceptance in order to find out more about the evaluation of TAM and Brand Knowledge (Cheng et al., 2018). To address this gap, the paper aims to figure out the adaption of Mobile Banking App by integrating only Technology Acceptance Model in the Cambodia context.

The study explores the consumers' attitudes to adopt of mobile banking based on the Technology Acceptance Model (TAM) by proposing three main factors (such as perceived usefulness, perceived ease of use, and trust), which influence consumers' intention to adopt mobile banking. To specify the research objective, the researcher has a main research question: How do the factors of TAM such as perceived usefulness, perceived ease of use, and trust, influence consumers' intention to adopt Mobile Banking in Cambodia? The researcher believes it will fill in the knowledge gap concerning mobile banking adoption by using TAM in Cambodia, contributing to bank organization, and next future researchers. This research aims to finds out the attention of consumers to adapt the Mobile Banking App with the focus on the respondents aged between 18 to 45 years with the experience of using Mobile Banking App.

2. Literature Review

2.1 Mobile Banking App

The term "mobile banking" refers to the use of cell as a channel of providing and handing over banking offerings which consist of ordinary offerings such as funds transfer, bill payment as well as new offerings such as on-line and digital payments (Abadi et al., 2012). Suoranta and Mattila (2004), showed that mobile banking is the newest update of the

today's financial channel. Several authors indicate time saving, flexibility, interactivity, and higher accessibility in using mobile banking compared with traditional banking channels such as Automated Teller Machine (ATM) and non-mobile banking (Cheah et al., 2011). Mobile banking (commonly referred to as M-banking), an extension of Internet banking, presents time independence, convenience, instant response to customers, and value savings (Govender & Sihlali, 2014). It can also be called "pocket banking" for customers. Tiwari and Buse (2007) defined mobile banking as the banks' service in providing and making available banking and other financial services to their customers through mobile phones and other similar pieces of advice.

Based on the mobile banking concepts from the previous studies, the researcher concludes that mobile banking is the smart mobile banking that can facilitate customers' financial transactions outside the bank and cost-saving-

2.2 Theoretical Background

2.2.1 Technology Acceptance Model (TAM)

Davies proposed the Technology Acceptance Model (TAM) in 1986 (Lule et al., 2012). TAM is an adaptation of the Theory of Reasoned Action (TRA) developed by Fishbein et al. (1980) and Cavus and Chingoka, (2015). An adjustment of Theory of Reasonable Active (TRA), TAM is a custom for modeling users of information systems or technologies (Lai, 2017). Based on TAM, behavioral intention is influenced by a user's attitudes towards a product, which in turn is affected by the perceived usefulness of the product and its perceived ease of use (Davis et al., 1989). Perceived usefulness refers to the degree to which using a specific product will increase a user's ability to achieve desired goals, whereas perceived ease of use refers to the extent to which the system use is free of effort (Davis et al., 1989).

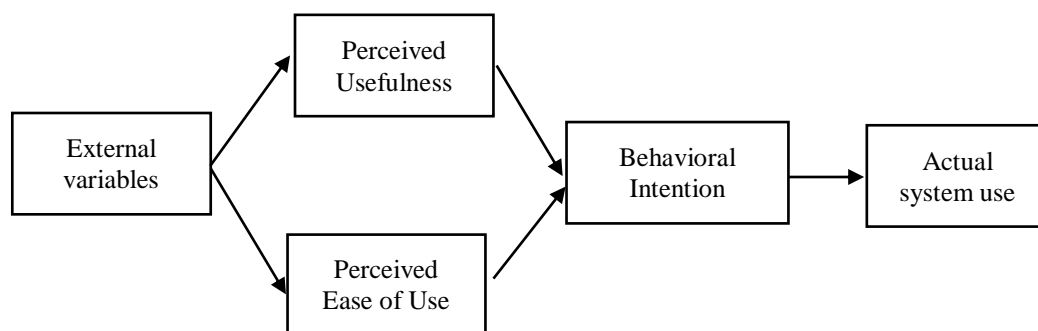


Figure 1: Technology Acceptance Model (Davis et al., 1989)

According to Mathieson et al. (2001), one of the key reasons for TAM being generally accepted is due to its specific approach to address the factors that influence the use of information systems. TAM has a strong emphasis on computer users' acceptance behavior (Abadi et al., 2012). In particular, TAM has been shown to be valid for examining online and mobile technologies in previous studies (Davis, 1989; Doll et al., 1998; Luarn & Lin, 2005); thus, the model is essential to study the adoption of Mobile Banking. Technology

Acceptance Model is significant for studying information system as new technology, digital payment, electronic banking, and mobile banking. As a result, the researcher proposed to employ the TAM model in this study about the mobile banking app in Cambodia.

2.3 Conceptual Framework

Perceived ease of use and perceived usefulness are the constructs of the Technology Acceptance Model. In the model, both the perceived usefulness and perceived ease of use predict attitude, described as the user's assessment of the program's desirability (Akturan & Tezcan, 2012). Also, Venkatesh and Davis (1996); argued that it is important from a theoretical point of view to understand the roots of perceived ease of use because it is the key role in deciding acceptance and usage. According to Mathieson (1991), the perceived ease of use is the consumer's understanding that banking on the web will involve a minimum effort. Similarly, Jahangir and Begum (2008) affirmed that the drivers of growth in electronic banking are determined by the perceived ease of use, which is a combination of convenience supplied to these with effortless web access, the availability of secure, excessive popular digital banking functionality, and the necessity of banking services. Perceived ease of use has a positive impact on mobile banking; it is convenient, flexible, and available; it is not difficult to go to the banks or branch and avoid long queues (Govender & Sihlali, 2014).

Perceived usefulness is a hypothesis of TAM. According to the TAM of Davis et al. (1989), perceived usefulness is the degree to which a character believes that using a specific device would decorate his or her job performance. Davis (1993) described perceived usefulness as the individual's understanding that using the new technology will improve his or her performance. Pikkarainen et al. (2004) utilized TAM in Finland. They discovered the perceived usefulness as a determinant of actual behavior, which motivated the twenty-first-century banking consumers to use more advanced and consumer-friendly self-service applied sciences that give them greater autonomy in performing banking transactions and acquiring records on financial advice, and in purchasing other financial products. According to Jeong et al. (2013), perceived usefulness was found to be the most critical factor influencing the intention to use Mobile Banking. This finding suggests that if Mobile Banking is to be understood by users, it should be perceived as a more useful and rapid way of doing so than the traditional banking transaction system. Perceived usefulness also has an essential impact on the development of consumers' initial willingness to use mobile banking (Luarn & Lin, 2005).

Yan and Pan (2014) state that trust reflects the individual's agreement to obtain vulnerability based on positive thinking toward another party's future behavior. Trust is very significant to study to adapt to new technologies (Kim & Prabhakar, 2004). Trust (T) in mobile services refers to the system's perceived reliability and the service provider. Based on Chung and Kwon (2009) study, the trust of customers who want to use mobile banking services is an essential factor that impacts their attitude towards mobile banking services and their intention for repeated use in the future. Song (2015) has shown that trust perception impact customers' intention to use mobile banking. He also states that bank managers and the third-party mobile provider should try to make customers trust the honesty, generosity,

and mobile banking serviceability, which is crucial for them to attract new customers and extend its market.

Attitude is developed from Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1975). Attitude is normally used to analyze human belief, positive or negative feeling, norms and intention leading to specific results (Madden et al., 1992). Yang and Yoo (2004) have found that greater understanding the key role of attitude has improved the predictability of the TAM model (Yang & Yoo, 2004). Intention is constructed in TRA, too. Intention is very important to understand consumer acceptance of technology because usage behavior is decided by the intention to use a particular object. In field of information and technology, attitude was an indicator of behavior and had a positive effect on mobile payment system intention (Dacstan & Gürler, 2016). The relationship between attitude and intention is examined in order to understand adaptation of consumers based on TRA (Fishbein et al., 1980); Ajzen & Fishbein, 1975).

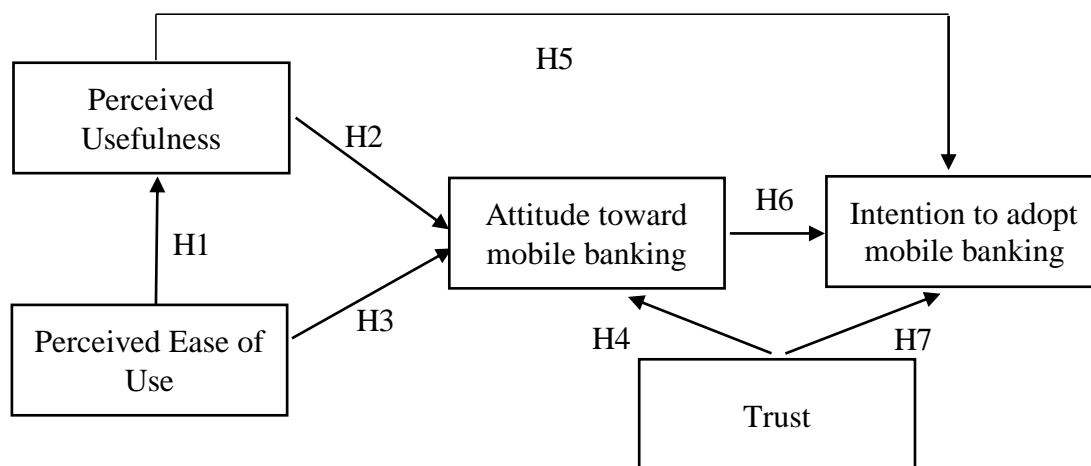


Figure 2: The research model (TAM Based)

2.4 Research Hypotheses

Based on the conceptual framework and TAM model proposed by the researcher, in this study there are seven hypotheses to be tested. The proposed hypotheses are as follows:

- H₁: Perceived ease of use has a positive impact on the perceived usefulness.
- H₂: Perceived usefulness has a positive impact on the attitude towards the Mobile Banking App.
- H₃: Perceived ease of use has a positive impact on the attitude towards the Mobile Banking App.
- H₄: Trust has a positive impact on the attitude toward using the Mobile Banking App.
- H₅: Perceived usefulness has a positive impact on the intention to use the Mobile Banking App.
- H₆: Attitude toward Mobile Banking has a positive impact on the intention to adapt Mobile Bank App.
- H₇: Trust has a positive impact on the intention to adapt the Mobile Banking App.

3. Methods

3.1 Research Design

This research applied quantitative methods (Cooper & Schindler, 2007) and explanatory research (Cheng et al., 2018). First of all, the researcher focused on the empirical data about consumer's adaption on mobile banking in order to test the hypotheses formed underneath the technology acceptance model. This research employed descriptive statistics with the data from questionnaires on mobile banking user's adoption by using TAM.

3.2 Research Site

The study was conducted in Phnom Penh City as the people are familiar with the use of a mobile phone, especially mobile banking.

3.3 Target Population and Sample

This research consisted of the customers aged between 18 and 45 years, using Mobile Banking App. They are university students, the staff of ACLEDA Institute of Business. The study was conducted using non-probability, convenience sampling and purposive sampling due to its convenience and time efficiency (Govender & Sihlali, 2014). In this research, a survey was performed based on the previous questionnaires. The questionnaire is composed of two main sections: the first section is to explore the respondents' data, and the second section is to explore the respondents' response about TAM application. According to Yamane (1967), the calculated sample size with precision Level is $\pm 7\%$, where the confidence level is 95%, $P=0.5$, and the population is more than 100,000. Therefore, the sample size (n) is equivalent to 204.

Table 1: Construct Measurements

Variable	Measurements	References
Perceived Ease of Use	- Learning to use Mobile Banking App is easy. - Operating my banking transaction via Mobile Banking App is easy to use.	Aboelmaged & Gebba (2013) and (Govender & Sihlali, 2014)
Perceived Usefulness	- The contents in mobile banking is clear and understandable. - Using Mobile Banking App is enabling me to fulfill my task more quickly. - Using Mobile Banking App saves my time. - Overall, using Mobile Banking App is advantageous.	
Perceived Trust	- I believe that my personal data will be properly protected when I process transaction via Mobile Banking App. - It is secured to use Mobile Banking App in making payment. - Overall, I believe that using Mobile Banking App is trustworthy.	Davis (1993); Jeong et al. (2013) and Jahangir & Begum (2008) Lee et al. (2007); Gefen & Straub (2000) and Cyr et al. (2007)
Attitude	- I feel it is a good idea to use Mobile Banking App. - I feel it is beneficial to use Mobile Banking App. - I think it is interesting to use Mobile Banking App.	Dağcstan & Gürler (2016) and Schierz et al. (2010)
Intention to adapt mobile banking	- I intend to use mobile banking in any transactions. - I will strongly recommend mobile banking to others. - Overall, I will use mobile banking in the future.	Dağcstan & Gürler (2016) and Schierz et al. (2010)

3.4 Data Analysis

Data obtained from questionnaires were analyzed using descriptive statistics such as frequency, percentages, mean, and standard deviation and multiple regression analyses to find the relationship between independents and dependent variables in Statistic Package for Social Science (SPSS). First of all, the independent variables were grouped to test the intention to use mobile banking. The linear regression was used to determine the significance between independent variables. ANOVA (Analysis of Variance) was applied to test the Adjusted R Square to check the fitness of the multiple regression models. The F test was used to determine the significance of the TAM Model, and t-test was also used to analyze the significant effect of each independent variable on the dependent variable (Black, 2010).

3.5 Reliability Test

Reliability Test emphasizes the pilot test Cronbach's Alpha. Cronbach's Alpha is a measure of internal consistency between items in scale (Blagoeva & Mijoska, 2017). Table 2 shows that the pilot test Cronbach's of each variable ranges from 0.749 to 0.848 for 30 sample and from 0.841 to 0.874 for 204 sample. All the constructed variables and elements are reliable for the research when the number of pilot Cronbach's Alpha is above the accepted level 0.7 based on (Nunnally, 1994).

Table 2: Reliability Test

No.	Variable	Cronbach's Alpha (n=30)	Cronbach's Alpha (n=204)
1.	Perceived ease of use	0.848	0.872
2.	Perceived usefulness	0.789	0.861
3.	Trust on the Use of Mobile Banking App	0.811	0.874
4.	Attitudes toward the Use of Mobile Banking App	0.749	0.841
5.	Intention to use Mobile Banking App	0.808	0.859

4. Results and Discussions

4.1 Results

4.1.1 Demographic Factors

Based on the structure of the questionnaire, demographic characteristics presented in part one – personal information. The analysis began with the respondents' demographics. The demographic distribution shows that 41.7 percent of the respondents are male and the remaining 58.3 percent are female. Concerning age, most of the respondents are between 18 to 24 years, accounting for 67.6. With regard to educational achievement, 36.8 percent are undergraduates; 44.1 percent are Bachelor's degree holders, 18.1 percent are Master's degree holders, and 1 percent are other – PhD degree (PhD holder). In addition, most of the respondents are company employees, accounting for 52.9 percent. In terms of mobile banking types, most consumers use ToanChet (49 percent), followed by ABA Mobile App (38.7 percent).

4.1.2 Analysis of Level of Agreement

The analysis of the level of agreement shows that the three variables which indicate the strong level of agreement include perceived usefulness, attitude, and intention while only two variables such as perceived ease of use and trust indicate only an agreement. Therefore, each variable in the model had the great level of agreement.

Table 3. Level of Agreement

Variables	Min	Max	Mean	SD	Level of Agreement
Perceived Ease of use	2.67	5.00	4.1667	0.54617	Agree
Perceived usefulness	2.33	5.00	4.3252	0.56966	Strongly agree
Trust	2.67	5.00	4.1242	0.60453	Agree
Attitude	2.33	5.00	4.2190	0.54966	Strongly agree
Intention	2.67	5.00	4.2067	0.59454	Strongly agree

Note: 2.60-3.39 as neutral, 3.40-4.19 as an agree, and 4.20-5.00 as strongly agree

4.1.3 Correlation Analysis

A correlation analysis was determined based on the particular construct identified in the research model. A study of the correlation has been used to assess the degree of association between two or more variables. The range of values for the correlation was from -1 and +1 (Pearson, 1926). That implies stronger positive correlations when the values were close to +1.

Table 4: Pearson Correlation Matrix

	1	2	3	4	5
1.Perceived Ease of use	1				
2.Perceived usefulness	0.634**	1			
3.Trust	0.499**	0.540**	1		
4.Attitude	0.602**	0.686**	0.677**	1	
5.Intention	0.577**	0.594**	0.578**	0.725**	1

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

As a result, there is a significant relationship between each construct. Most of those coefficients were proved significant to the model in which the higher correlation coefficient was detected in the attitude and perceived usefulness (0.686**).

4.1.4 Regression Analysis

Linear regression analysis used to check hypothesis because model containing one independent variable and dependent variable. Regression analysis was the method of creating a statistical model that could be used by another variable or other variables to predict or evaluate one variable.

4.1.4.1 Analysis of the Variance

Table 5: ANOVA

Model	Sum of Square	df	Mean Square	<i>F</i>	Sig.
Regression	40.852	4	10.213	65.764	0.000**
Residual	30.904	199	0.155		
Total	71.756	203			

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

According to the Table 5, all of the relationships expected have been proven important. The regression analysis shows that the variables were statistically significance at $p\text{-value}=0.000<0.05$. We can conclude that the research model based on TAM model is an accurate representation of real factors influencing consumers' intention to adapt mobile banking app in Cambodia.

4.2 Discussions

TAM model was statistically significant in the study of Mobile Banking in Cambodia. Moreover, the result of this study is consistent with the previous studies that employed TAM in their studies of Mobile Banking (Lule et al., 2012; Akturan & Tezcan, 2012; Govender & Sihlali, 2014).

Table 6: Hypothesis testing results from regression analysis

	Hypotheses		Beta	Sig.	Result
H ₁	Perceived ease of use	➡ Perceived usefulness	0.634	0.000**	Supported
H ₂	Perceived usefulness	➡ Attitude towards mobile banking	0.509	0.000**	Supported
H ₃	Perceived ease of use	➡ Attitude towards mobile banking	0.279	0.000**	Supported
H ₄	Trust	➡ Attitude towards mobile banking	0.677	0.000**	Supported
H ₅	Perceived usefulness	➡ Intention to use Mobile Banking	0.163	0.014*	Supported
H ₆	attitude	➡ Intention to use Mobile Banking	0.519	0.000**	Supported
H ₇	Trust	➡ Intention to use Mobile Banking	0.139	0.034*	Supported

Frist of all, the study has found that the perceived ease of use had a positive impact on perceived usefulness. It was consistent with the previous studies (Akturan, Tezcan et al., 2012; Venkatesh and Davis, 1996; Davis et al., 1989; Mathieson, 1991; Gefen & Straub, 2000; Al-Gahtani, 2001; Govender & Wsihlali, 2014; Cheng et al., 2006) . They stated that that perceived Ease of use had influence on perceived usefulness as consumers know it was easy to use and learn, convenient, and available, which leads to an increase in the perceived usefulness. Second, the study has also shown that TAM model in which the perceived usefulness had a positive impact on attitude toward mobile banking and intention to adapt mobile banking. For perceived usefulness, it is matched with the research conducted by Davis, 1993; Jeong, Yoon et al.,2013; Pikkarainen et al., 2004; Linck et al., 2006; Luarn and

Lin, 2005). It was the degree that consumers believe to use a specific device as mobile banking, which would enhance his or her job performance, improve financial performance, save time, and develop their willingness. Third, trust had the positive impact on attitude toward an intention to adapt the mobile banking which is consistent with previous research by (Dirks & Ferrin, 2001; Jarvenpaa et al., 2004; Schierz, Schilke & Wirtz, 2010; Chung & Kwon, 2013; Song, 2015; Dağistan & Gürler, 2016). The study shows that the relation between trust attitude and intention was positive because when the consumers trust the mobile banking app, they will make a one-time or repeat purchase and act on information provided by the mobile provider. Meanwhile, they strongly recommend others to use it and secure their personal data. Fourth, consumer adaptation of mobile banking was attitude towards technology acceptance that had a greater positive influence on intention to use mobile banking, which is comparable with the previous research conducted by (Ajzen & Fishbein, 1975; Fishbein et al., 1980; Dağistan & Gürler, 2016; Cheng et al., 2018; Yang & Yoo, 2004). They stated that attitude towards technology acceptance had the most influence on the intention to use digital payment; consumers were willing to use mobile banking when their feeling was positive about the performance of the app, which is considered easy, interesting and beneficial.

5. Conclusion and Recommendations

5.1 Conclusion

This study has filled in the knowledge gap from the previous researcher, suggesting conducting the specific model as TAM to analyze the end-user attitudes and intention, and it also reached the objective of this study. The mean of each variable (range from 4.1242 to 4.3252) that has the level of agreement from "agree" to "strongly agree". Moreover, the correlation of constructs shown that each variable in the proposed model strongly correlated, ranging from 0.499** to 0.686** closed to +1, which implied a more substantial positive relation. Furthermore, the result of Linear regression presented all the hypotheses which are all statistically significant at the p-value=0.000 less than 0.05, which showed that all independent variables such as perceived ease of use, perceived usefulness, and trust had an impact on the dependent variables such as attitude and intention to adopt mobile banking. ANOVA showed the p-value of F distributive was small than 0.005, which meant the TAM Model was statistically significant to study the factors that impact consumer intentions to adopt mobile banking app in Cambodia context by TAM model.

5.2 Implications of the Study

The results of this study have shown some significant consequences which are unique to the context of Cambodia. It contributes to the management in the bank to set strategies to find the target customers. The bank will know that customers prefer the method in mobile banking app that has the transactions, which are easily performed and multi-functional. Most of the customers prefer to use mobile banking based on their trust on the bank and on the convenience of using the mobile banking app service, provided by the bank. Banks should

create flow, assurance, website satisfaction, and extent of future use. Banks also have consumers who need more functions and secure integrity of mobile banking to maintain their customers.

5.3 Limitations and Future Research

Within the research limitations, the study suggests that future researchers enlarge the sample size by covering all aspects of the participants and apply a qualitative approach in order to shed light on the issue of users' attitude towards the intention to adopt mobile banking app in Cambodia. Furthermore, the analysis of the effective tools to promote mobile banking usage can be the focus of the future study as well.

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