Factors Influencing Behavioral Intention to Use and Use Behavior of Mobile Banking in Myanmar Using a Model Based on Unified Acceptance Theory

Naing Naing Win, Pyae Phyo Aung, May Thu Phyo, Monywa University of Economics, Myanmar

Date Received: 28 September 2020 Revised: 13 November 2020 Accepted: 24 November 2020

Abstract

In this study factors were explored that influenced behavioral intention and adoption of mobile banking by bank customers in Myanmar. The model used adapted factors from the extended Unified Theory of Acceptance and Use of Technology, along with perceived risk. A structured questionnaire was used to collect data using purposive sampling. Four hundred and six valid responses received from mobile banking customers were analyzed using a structural equation model. The results showed a positive and significant relationship between behavioral intention and performance expectancy, hedonic motivation, and habit. The effect of behavioral intention on use behavior was also significant, while the relationships between behavioral intention and effort expectancy, facilitating conditions, social influence, price value, and perceived risk were not significant. The results suggested applicable guidelines for banks to effectively implement and design mobile banking in Myanmar.

Keywords: Unified Acceptance Theory, perceived risk, mobile banking

Introduction

The banking industry has been revolutionized by advancements in telecommunication and information technology. Banks were forced to provide and advance self-service banking applications to mobile devices with their increase use and the availability of high-speed Internet-enabled mobile phones, smartphones, and tablets, which are multifunctional, sophisticated, and linked to fast and reliable communication networks. According to Poushter (2016), business growth based on the mobile sector has increased considerably worldwide, especially in emerging countries.

Due to the increased usage of the Internet with mobile devices, especially in many emerging countries, it provided an excellent opportunity to develop mobile banking in financial markets. In Myanmar, a developing country, Internet usage with mobile devices has increased considerably in recent years (GSMA, 2019). More than 70% of the population in Myanmar has access to the mobile Internet (Holm & Karlsson, 2019), and 80% of the population have mobile phones and smartphones (Charles, 2019). However, according to Charles (2019) and Zainudeen and Galpaya (2015), only 23% of the adult population have bank accounts, and only a few use banking services. In other words, cash is still the primary tool of exchange in Myanmar. According to Breen (2020), banks are trying to seize opportunities presented by mobile technology to provide new services.

Mobile banking resulted from the activities of financial institutions' integrating technological innovation with their information systems. Mobile banking systems provide customer value in terms of time and place accessibility (Lin, 2011; Chong, 2013). Ensor et al. (2012) argued that mobile banking was considered a valuable channel for delivering financial information to customers, making it easier to check account balances and transfer funds to and from accounts irrespective of their location.

Although mobile penetration has been gaining momentum and most banks offer mobile banking, there is still low familiarity and poor understanding of mobile banking among Myanmar users (Thar et al., 2017). Therefore, it was desirable to do exploratory research to understand the adoption levels of mobile banking and users' attitudes toward it in Myanmar (Holm & Karlsson, 2019). A few studies have adapted the Unified Theory of Acceptance and Use of Technology (UTAUT) model to explore the acceptance level of mobile banking users and the antecedents of their behavioral intention to use. In this research the objectives were to gain an overview of the attitude toward and usage of mobile banking in Myanmar. The specific objectives of this study were to investigate the factors influencing behavioral intention and the effect of behavioral intention on use behavior. The aim was to examine

whether the seven factors of the extended UTAUT model (UTAUT2) positively impacted behavioral intention to use, and to know whether perceived risk had a negative impact on behavioral intention to use. An understanding was sought concerning the relationship between behavioral intention to use and use behavior of mobile banking users. Therefore, the UTAUT2 was applied, which included assessing the perceived risk. Such an approach was bound to contribute to the technology adoption literature regarding mobile banking in a developing country.

Literature Review

There are various theoretical models to examine the adoption process and usage characteristics of technology. Among them, the UTAUT represents a framework developed by Venkatesh et al. (2003). This model was applied to predict technology acceptance levels in organizational systems. Moreover, the model was based on unifying the primary eight elements used in previous models, ranging from human behavior to computer science. The UTAUT approach considered four main factors that influenced behavioral intention and usage of information technology, according to Venkatesh et al. (2003). The four main factors were performance expectancy, effort expectancy, facilitating conditions, and social influence.

Venkatesh et al. (2012) defined performance expectancy as "the level of benefits that technology usage provided to the consumer in functioning some activities." Consumers tended to accept technology if they perceived that the technology was useful and supportive (Alalwan et al., 2016). From the customers' perspectives, effort expectancy was defined as "the extent of easiness that consumers experience while using a particular kind of technology" (Venkatesh et al., 2012). Since particular skill and knowledge levels are needed to apply a new technology, effort expectancy was bound to affect customers' adoption conditions for mobile technology (Alalwan et al. 2016).

A facilitating condition was defined as "the level of consumers' perception of availability for inputs and supported activities to behave in a certain way" (Venkatesh et al., 2012). Facilitating conditions were recognized as significant during the adaption of a new technology due to the requirement of a certain kind of support associated with technological matters and organizational actions (Alalwan et al., 2016). Social influence is thought of as "the degree of consumers' perception of which important person in their environment thinks they should apply a certain technology" (Venkatesh et al., 2012). Social influence can be a critical determinant affecting users' intentions to use new technology, since information and recommendations received from others can be significant (Alalwan et al., 2016).

The UTAUT approach was extended by Venkatesh et al. (2012) from the consumer perspective on technology by adding three factors, namely, hedonic motivation, price value, and habit. This extended form of UTAUT was called UTAUT2. The hedonic motivation was "the enjoyment or happiness resulted from usage of a certain technology," according to Venkatesh et al. (2012). It was focused on an intrinsic part of the motivation in customer technology rather than the extrinsic part of motivation from an organizational perspective (Tamilmani et al., 2019). According to Zhang et al., (2012), the more enjoyment users perceived, the greater the adoption level seen for a new technology. From an information system perspective, habit was referred to as the level at which people were eager to act voluntarily due to prior learning (Limayem et al., 2007). Past behavior with technology could affect present actions with related technology (Ajzen, 2002). Price value was "the trade-off condition caused due to the variance between benefits and monetary cost" (Venkatesh et al., 2012). These authors also argued that price was usually an essential factor in the consumer context, since the user had to bear the costs associated with adopting the technology.

The UTAUT adoption studies, completed in the context of m-commerce, m-banking, and m-payment, have extended the core model with relationships adopted from other models or studies. Moreover, three constructs—namely perceived risk, trust, and perceived financial cost—were not derived from the core model. However, each has gained significant support for its impact on behavioral intention in m-commerce, m-banking, and m-payment contexts (Slade et al., 2014). As m-banking involves the transfer of money electronically, perceived risk is highly relevant to the context, and hence this construct was proposed as an extension to UTAUT2.

Hypothesis Development

From the marketing aspect, using a single model to examine the conditions of adopting information technology has been assumed, and is difficult to explain (Madan & Yadav, 2016). Therefore, the current study applied the UTAUT2 model by extending it, with perceived risk as a new variable, in order to understand better the mobile banking system's features. The conceptual framework used in the present study is shown in Figure 1.

Performance Expectancy H_1 Effort Expectancy H_2 Facilitating Ηз Conditions Social H_4 Influence Behavioral Н9 Use Intention to Use Behavior H_5 Hedonic Motivation H_6 Habit H_7

Figure 1 Conceptual Framework

Price

Value

Perceived Risk

Performance Expectancy and Behavioral Intention to Use

 H_8

Performance expectancy was one of the significant, influential factors encountered in the adoption process of technology, according to Venkatesh et al. (2003). Although performance expectancy was not a predictor for behavioral intention to use in previous research done by Kwateng et al. (2019), it had a positive impact on behavior intention in several contexts, including mobile banking (Savic & Pesterac, 2019), mobile applications (Tak & Panwar, 2017; Gupta et al., 2018; Palau-Saumell et al., 2019), electronic payments (Indrawati & Putri, 2018), and mobile payments (Lee et al., 2019). Therefore, the following hypothesis was proposed:

 H_1 : Performance expectancy positively influences behavioral intention to use.

Effort Expectancy and Behavioral Intention to Use

When users recognize that technology is easy to use, they are more eager to apply this technology, according to Lin (2011). Although effort expectancy did not affect behavioral intention to use in some studies (Kang et al., 2015; Alalwan et al., 2017), it was the significant determinant of behavioral intentions in different mobile contexts, ranging from mobile banking (Savic & Pesterac, 2019) to mobile applications (Tak & Panwar, 2017; Palau-Saumell et al., 2019). Therefore, the following hypothesis was made:

 H_2 : Effort expectancy positively influences behavioral intention to use.

Facilitating Conditions and Behavioral Intention to Use

Facilitating conditions are crucial in the adoption process of technology, according to Venkatesh et al. (2003). Although facilitating conditions did not affect behavioral intention to use in some previous researches (Kwateng et al., 2019; Lee et al., 2019), they had a strong relationship with behavioral intentions (Tak & Panwar, 2017; Cai et al., 2019; Palau-Saumell et al., 2019; Savic & Pesterac, 2019). Therefore, the following hypothesis was generated:

 H_3 : Facilitating conditions positively influences behavioral intention to use.

Social Influence and Behavioral Intention to Use

Social influence has been assumed to be a primary factor in exploring the adoption process of technology, according to Venkatesh et al. (2003). Indeed, it was found to be a crucial factor in predicting behavioral intentions (Fajar et al., 2018; Gupta et al., 2018; Moorthy et al., 2019; Piarna et al., 2020). In some studies, social influence did not affect behavioral intention to use (Baptista & Oliveira, 2015; Kwateng et al., 2019). However, it had a significant relationship with behavioral intention to use in the mobile banking context (Alalwan et al., 2017; Lee et al., 2019) and e-banking context (Ghalandari, 2012). Therefore, the following hypothesis was made:

 H_4 : Social influence positively influences behavioral intention to use.

Hedonic Motivation and Behavioral Intention to Use

According to Venkatesh et al. (2012), hedonic motivation refers to perceived fun or enjoyment resulting from mobile technology usage. If users gained enjoyment from mobile phone usage, they tended to use their mobile phones more (Park & Lee, 2011). The mobile phone has been assumed as an entertainment device for some users, so that hedonic motivation can be seen as critical in adopting mobile banking technology (Merhi et al., 2019). Some researchers have shown that hedonic motivation was strongly related to behavioral intention (Phang et al., 2018; Moorthy et al., 2019; Putra et al., 2019). Although hedonic motivation does not always affect behavioral intention to use (Kwateng et al., 2019; Merhi et al., 2019), it was a critical factor affecting behavioral intention to use in the mobile banking context (Alalwan et al., 2017; Raza et al., 2019). Therefore, it was hypothesized that:

 H_5 : Hedonic motivation positively influences behavioral intention to use.

Habit and Behavioral Intention to Use

Venkatesh et al. (2012) described habit as a significant factor that could predict behavioral intention and usage of technology. Although habit does not always affect behavioral intention to use in technology users (Shaw & Sergueeva, 2019), it has been accepted widely as being a strong predictor of behavioral intentions across various contexts, including mobile learning (Moorthy et al., 2019), mobile wallet (Indrawati & Putri, 2018), and mobile applications (Gupta et al., 2018; Khurana & Jain, 2019). Therefore, the following hypothesis was proposed:

 H_6 : Habit positively influences behavioral intention to use.

Price value and Behavioral Intention to Use

To complement UTAUT's primary resource considerations, Venkatesh et al. (2012) applied price value as a financial matter. They defined price value as a consumer's perception of the discrepancy between the received benefits and cost of the money used. Although price value did not affect behavioral intention to use by technology users in some previous researches (Baptista & Oliveira, 2015; Alalwan et al., 2017), it may have a positive relationship with behavioral intentions in several contexts, including mobile applications (Khurana & Jain, 2019; Hungilo et al., 2020) and mobile wallet (Indrawati & Putri, 2018). Therefore, the following hypothesis was made:

 H_7 : Price value positively influences behavioral intention to use.

Perceived Risk and Behavioral Intention to Use

The consequence of feelings of uncertainty and anxiety are known as perceived risk from the customer's perspective. These feelings are concerned with the behavior and the seriousness of possible outcomes of the behavior. Perceived risk is related to the consumer's concerns about finance, relationship, and product features while conducting a particular online transaction (Forsythe & Shi, 2003). Many previous researchers have pointed out a significant and negative relationship between perceived risk and behavioral intention in the mobile application context (Gupta et al., 2018; Khurana & Jain, 2019; Piarna et al., 2020). Therefore, it was hypothesized that:

 H_8 : Perceived risk negatively influences behavioral intention to use.

Behavioral Intention to Use and Use Behavior

Behavioral intention was the extent of the likelihood of conducting something rather than examining actual behavioral conditions (Wu & Wang, 2005). Earlier researchers found that behavioral intention was positively related with use behavior in several contexts, including mobile applications (Gupta et al., 2018), the banking industry (Putra et al., 2019), and online shopping (Piarna et al., 2020). Therefore, the following hypothesis was made:

 H_9 : Behavioral intention to use influences use behavior positively.

Research Methodology

A structured questionnaire was used in this study to examine the proposed hypotheses. The questionnaire was divided into two sections. The first part of the questionnaire included questions about the demographic details of respondents. The second part consisted of 55 questions that were answered using a five-point Likert scale about the primary constructs involved in this study's proposed model. The survey instrument was adapted from Venkatesh et al. (2003, 2012), Escobar-Rodríguez et al. (2014), Featherman and Pavlou (2003), Alam et al., (2018), Kim et al. (2009), Goodhue and Thompson (1995), and Zhou et al. (2010).

Before a pilot test was conducted, the questionnaire was translated from English to Myanmar using the back-translation method. A pilot test collected data from 30 respondents. Reliability and Exploratory Factor Analysis (EFA) were applied as a preliminary analysis of the pilot test. According to the pilot test results, the final questionnaire was updated for primary data collection by making some adjustments. The population of the study consisted of online users who utilized mobile banking applications and was assumed to be 40 million—the number of online users in Myanmar in 2019, according to Charles (2019). The sample selected for the study involved online users who had used mobile banking applications supported by three big banks, namely, KBZ bank, AYA bank, and CB bank from two cities (Yangon and Mandalay). The target respondents were selected using a purposive sampling method. Mobile banking users (450) were selected from Yangon and Mandalay who had at least six months of mobile banking usage experience and had made at least one transaction, such as an account transfer, mobile top-up, etc. with the mobile banking application during the past month. They were asked to complete a structured online survey administered during March and April 2020. A total of 406 usable and valid responses were received after screening out incomplete and invalid responses. Confirmatory Factor Analysis (CFA) was applied to test the instrument's convergent validity and reliability, and Structural Equation Modeling (SEM) was applied to test the theoretical model and the hypotheses.

Results

The demographic data indicated that a majority of the respondents were female (50.2%), the age group between 26 and 30 accounted for 23.6%, and private sector employees for 29.8%. Most of the respondents (43.8%) had one to three years of experience using mobile banking. Furthermore, 54.7% of respondents were university graduates, and 53.4% had been using KBZ's mobile banking rather than other banks' mobile banking.

Composite Reliability (CR), the Average Variance Extracted (AVE), and Maximum Shared Variance (MSV) were calculated in order to evaluate the reliability of the measurement model. The composite reliabilities, ranging from .74 to .97, were above the cutoff level of .70 (Hair et al., 2010). The average variance extracted values of the factors, except facilitating conditions, were higher than .50, which were above the cutoff level of .50 (Hair et al., 2010). The average variance extracted for the facilitating conditions was .49. However, this value could be applied because Fornell and Larcker (1981) argued that if the AVE is less than .50, but composite reliability is higher than .60, the convergent validity of the construct is still high enough to be used. As shown in Table 1, since the maximum shared variance value was less than the average variance extracted, this established the discriminant validity among the variables of the study (Hair et al., 2010). For testing scale reliability, Cronbach's Alpha was applied. In the main study, the values of Cronbach's Alpha of all the constructs were above .70, ranging from .79 to .89, which is considered as outstanding reliability (Zikmund et al., 2010). These results are illustrated in Table 1.

Table 1 Confirmatory Factor Analysis of Model

Constructs	CR AVE		MSV	Cronbach's Alpha
Performance Expectancy (PE)	.89	.54	.19	.83
Effort Expectancy (EE)	.90	.75	.34	.86
Social Influence (SI)	.86	.61	.24	.83
Facilitating Conditions (FC)	.74	.49	.26	.88
Hedonic Motivation (HM)	.88	.71	.30	.83
Price Value (PV)	.86	.68	.41	.84
Habit (HA)	.80	.57	.41	.79
Perceived Risk (PR)	.97	.92	.10	.87
Behavioral Intention to Use (IU)	.86	.59	.01	.83
Use Behavior (UB)	.85	.54	.37	.89

To examine the discriminant validity of the study, the data were analyzed by calculating the overall correlation between the constructs and the square root of AVE, which should exceed the correlations between each construct and all other constructs. The results in Table 2 show that the overall correlations among the variables were stable, and the analysis of the square root of AVE confirms a satisfactory discriminant validity.

Table 2 Discriminant Validity and Correlations

Constructs	PE	EE	SI	FC	НМ	PV	НА	PR	IU	UB
PE	.87									
EE	.49	.78								
SI	.22	.29	.70							
FC	.33	.45	.51	.84						
НМ	.42	.47	.47	.48	.82					
PV	.31	.41	.41	.55	.64	.76				
НА	.22	.25	.27	.31	.27	.32	.96			
PR	10	10	.05	.02	07	.01	.05	.77		
IU	.58	.45	.22	.36	.61	.43	.30	12	.73	
UB	.41	.34	.23	.36	.33	.38	.15	03	.43	.73

In this study, the UTAUT2 model, extended with perceived risk, allowed eight factors to be examined; these were measured using 43 measurement items. However, in the final CFA model of the extended UTAUT2, some items were removed to improve model-fit indices. This meant that 27 items remained to meet the Goodness-of-Fit Index (GFI) of .91. Behavioral intention to use was measured using five measurement items. The final CFA model for behavioral intention retained all items of behavioral intention after obtaining a GFI that was over .90. The use behavior factor was measured using seven measurement items. The final CFA model for use behavior retained seven items without reducing them after getting a GFI of over .90. In structural modeling (SEM), firstly, dependent and independent variables were measured using 39 measurement items. However, some items were removed to improve model fit-indices; 30 items were left. The GFI was .89 (Figure 2). This GFI did not exceed the recommended cutoff (Hooper et al., 2008). However, it still had the required level because Baumgartner and Homburg (1996) and Doll et al. (1994) described that a value was tolerable if the GFI was above .83. Fit indices of CFA of all variables and SEM are shown in Table 3.

Table 3 CFA Fit Indices for UTAUT2 with Perceived Risk, Behavioral Intention, Use Behavior, and SEM

Item	CMIN (χ^2)	Degrees of Freedom (<i>df</i>)	Probability Level	X²/df	GFI	NNFI	CFI	RMSEA
Purchase Behavior	28.60	10	.001	2.86	.98	.98	.99	.07
Behavioral Intention to Use	0.27	1	.605	0.27	1.00	1.00	1.00	.00
Extended UTAUT2	590.23	276	.000	2.14	.91	.93	.94	.05
SEM	792.77	353	.000	2.25	.89	.91	.93	.06
Fit Criteria	-	-	-	≤ 3.00	≥ .90	≥ .90	≥ .90	≥.08

Results of hypotheses testing are presented in Table 4, with factors considered according to SEM output. In Table 4, acceptance is indicated for four hypothesized relationships, and five were rejected. The relationship between behavioral intention and performance expectancy was significant (p < .000), thus supporting H_1 . This means that performance expectancy positively impacted behavioral intention. The relationship between behavioral intention and hedonic motivation was also significant (p < .001), supporting H_5 . This means that hedonic motivation had a positive impact on behavioral intention. The relationship between behavioral intention and habit was significant (p < .001), thus supporting H_7 . Habit had a positive impact on behavioral intention.

Table 4 Hypothesis Testing

Path	Path	Llunathasia	Data (Q)	_	CD (+ value)	Cummonted	
Commences	Ends	Hypothesis	Beta(β)	p	CR (<i>t</i> -value)	Supported	
PE	BI	H ₁	0.44	.000***	6.48	YES	
EE	ВІ	H_2	0.09	.181	1.34	NO	
SI	ВІ	Нз	-0.11	.112	-1.59	NO	
FC	ВІ	H_4	0.01	.867	0.17	NO	
HM	BI	H ₅	0.33	.000***	3.80	YES	
PV	ВІ	H_6	0.05	.568	0.57	NO	
HA	BI	H ₇	0.10	.011**	2.55	YES	
PR	ВІ	H_8	-0.01	.580	-0.55	NO	
IU	UB	H ₉	0.46	.000***	7.41	YES	

Note. *** p < .001, ** p < .01; PE = Performance Expectancy, EF = Effort Expectancy, SI = Social Influence, FC = Facilitating Conditions, HM = Hedonic Motivation, PV = Price Value, HA = Habit, PR = Perceived Risk, IU = Behavioral Intention to Use, and UB = Use Behavior

However, the following factors had no influence on behavioral intention to use mobile banking—effort expectancy (p > .05), social influence (p > .05), facilitating condition (p > .05), price value (p > .05), and perceived risk (p > .05). Therefore, hypotheses H_2 , H_3 , H_4 , H_6 , and H_8 , were not accepted. Finally, the relationship between behavioral intention and use behavior was significant (p < .001), supporting H_9 . Thus, behavioral intention positively impacted use behavior.

Figure 2 represents the model constructed to illustrate the combined data obtained.

8D PEI 90
63 PEI 90
63 PEI 8
85 FE 8
86 FE 8
87 FE 8
88 FE 8
8

Figure 2 Final Model of SEM

PR4

Discussion

Insightful understandings flowed from using the UTAUT2 model with perceived risk to study mobile banking adoption in Myanmar. Performance expectancy was the strongest predictor of users' behavioral intention to adopt mobile banking. This result indicated that the respondents found benefits from using mobile banking in that it increased efficiency in performing their banking activities. This finding was consistent with previous research that the level of performance expectancy influenced the behavioral intention to use (Fajar et al., 2018; Gupta et al., 2018; Indrawati & Putri, 2018). Hedonic motivation was also a necessary antecedent to predict the behavioral intention to use mobile banking. This finding was in line with previous papers indicating that the level of hedonic motivation positively impacted intention to use (Megadewandanu et al., 2016; Indrawati & Firda, 2019; Putra et al., 2019). The present study indicated that customer tendency to use mobile banking was significantly affected by a customer's habits. This finding is also consistent with previous studies (Megadewandanu et al., 2016; Moorthy et al., 2019; Piarna et al., 2020).

Further, no significant relationship was found between five factors, namely, effort expectancy, facilitating conditions, social influence, price value and perceived risk, and the behavioral intention to use mobile devices. These findings were in line with those of some previous papers (Megadewandanu et al., 2016; Cai et al., 2019; Indrawati & Firda, 2019; Lee et al., 2019; Piarna et al., 2020), but differed from the findings of some researchers (Ghalandari, 2012; Zhang et al., 2012; Owusu et al., 2019). The results obtained may have occurred for several reasons, such as intricate application design and navigation, and unstable network conditions. Another reason may be that users were early adaptors; fees were being charged for most mobile banking transactions, such as account transfers or cashless withdrawals from ATMs, so they were not free.

Many studies have supported the idea that behavioral intention has an impact on use behavior in the banking sector. However, some researchers have argued that behavioral intention has no direct effect on use behavior. In this study, behavioral intention represented a predictor of use behavior of

banking customers. This finding was in line with previous research in the banking sector (Putra et al., 2019; Raza et al., 2019), indicating that behavioral intention positively impacted use behavior.

Theoretical Contribution and Managerial Contribution

The study findings contribute to the literature examining mobile banking technology use in a developing country with an emerging market context. Specific distinctions dealing with mobile banking technology usage have not received sufficient attention in context of an emerging country. In contrast, technology adoption has been studied somewhat extensively in developing countries. Moreover, this paper extends the theorized technology adoption model proposed by Venkatesh et al. (2012) by integrating perceived risk as an independent variable, which is crucial to examining the case of online transactions. From a consumer behavior perspective, the study also contributes to theoretical understandings by exploring technological acceptance conditions and intention to use mobile banking in an emerging country. The study may also contribute to the literature that further explores technological acceptance models for mobile banking and mobile payments from a financial perspective.

In the context of mobile banking, this study confirmed that performance expectancy, hedonic motivation, and habit were significant predictors of behavioral intention to use mobile banking in Myanmar. The results can be beneficial to the banking industry and other stakeholders, such as telecom providers and application developers, since these significant factors are concerns to all stakeholders in financial markets. According to the findings, banks should make significant benefits available to users, such as online transactions for bill payment and interbank transfer. They could also make the user experiences enjoyable by delivering exciting activities such as the opportunity to play games and participate in lucky draws. Moreover, providing applications so that users adopt mobile banking naturally could also be critical. This might be accomplished by adding more value-added features such as alerts for a deposit, bill payments due, large purchase and log-in info, and easy-to-access customer service options.

Limitations and Further Research

Although the study results were significant in their managerial implications and theoretical contributions, there were a few limitations. First, generalization of the findings is limited because the study focused on mobile banking users from two cities, Yangon and Mandalay. The respondents' perceptions reported in the current study might not represent Myanmar's population and mobile technology users outside of banking. As to the second limitation, it was associated with the data collection method. In this study, data were collected by a non-probability sampling method. Lastly, this study used the framework of the UTAUT2 model with perceived risk so that the scope of the study was limited. There may be other factors that could affect intention to use mobile banking.

Some recommendations for further research can be made. Future research could expand its scope by exploring other mobile technologies, such as mobile applications, mobile games, and social media usage. Data might be collected by using probability sampling methods to get detailed insights from technology users. More variables, such as perceived trust, security, and service convenience could be added to gain a more extensive view of mobile banking users' intention to use the technology. In conclusion, although this research had some limitations, its results highlight some of the benefits for Myanmar's mobile banking industry.

References

Ajzen, I. (2002). Residual effects of past on later behavior: Habituation and reasoned action perspectives. Personality and Social Psychology Review, 6(2), 107–122.https://doi.org/10.1207/S15327957PSPR0602_02

Alalwan, A. A., Dwivedi, Y. K., & Rana, N. P. (2017). Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. International Journal of Information Management, 37(3), 99–110. https://doi.org/10.1016/j.ijinfomgt.2017.01.002

- Alalwan, A. A., Dwivedi, Y. K., & Williams, M. D. (2016). Customers' intention and adoption of telebanking in Jordan. *Information Systems Management*, *33*(2), 154–178. https://doi.org/10.1080/10580530.2016. 1155950
- Alam, S. S., Omar, N. A., Ariffin, A. V., & Hashim, N. M. (2018). Integrating TPB, TAM and DOI theories: An empirical evidence for the adoption of mobile banking among customers in Klang Valley, Malaysia. *International Journal of Business and Management Science*, 8(2), 385–403.
- Baptista, G., & Oliveira, T. (2015). Understanding mobile banking: The unified theory of acceptance and use of technology combined with cultural moderators. *Computers in Human Behavior*, *50*, 418–430. https://doi.org/10.1016/j.chb.2015.04.024
- Baumgartner, H., & Homburg, C. (1996). Applications of structural equation modeling in marketing and consumer research: A review. *International Journal of Research in Marketing*, 13(2), 139–161.
- Breen, J. (2020, April). *Myanmar banking: Digital evolution, not revolution (yet)*. Euromoney. https://www.euromoney.com/article/b1l3vv2g5m6klw/myanmar-banking-digital-evolution-not-revolution-yet
- Cai, J., Yang, H. H., & Gong, D. (2019). Understanding undergraduates' adoption of flipped learning: Integrating UTAUT and social presence. In Cheung S., Lee LK., Simonova I., Kozel T., Kwok LF. (eds), *Blended Learning: Educational Innovation for Personalized Learning* (pp. 9–21). ICBL 2019. Lecture Notes in Computer Science, vol 11546. Springer, Cham. https://doi.org/10.1007/978-3-030-21562-0 2
- Charles, G. (2019, October 2). From zero to 40 million: The rise of digital payments in Myanmar. Medium. https://medium.com/@geoffcharles/from-zero-to-40-million-the-rise-of-digital-payments-in-myanmar-2499b488f871
- Chong, Y.-L. (2013). Predicting m-commerce adoption determinants: A neural network approach. *Expert Systems with Applications*, 40(2), 523–530. https://doi.org/10.1016/j.eswa.2012.07.068
- Doll, W. J., Xia, W., & Torkzadeh, G. (1994). A Confirmatory factor analysis of the end-user computing satisfaction instrument. *MIS Quarterly*, 18(4), 453–461. https://doi.org/10.2307/249524
- Ensor, B., Montez, T., & Wannemacher, P. (2012, August 13). The state of mobile banking 2012. *Forrester*. https://www.forrester.com/report/The+State+Of+Mobile+Banking+2012/-/E-RES75582
- Escobar-Rodriguez, T., Carvajal-Trujillo, E., & Monge, P. (2014). Factors that influence the perceived advantages and relevance of Facebook as a learning tool: An extension of the UTAUT. *Australasian Journal of Educational Technology*, 30(2), 136–151. https://doi.org/10.14742/ajet.585
- Fajar, A. N., Johanes, F. S., Girsang, A. S., & Wang, G. (2018). Evaluation of the used of visual electronic banking system application using UTAUT 2 in Bank Central Asia corporation. *IOP Conference Series: Materials Science and Engineering*, 420(1), 1–8. https://iopscience.iop.org/article/10.1088/1757-899X/420/1/012096/pdf
- Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: A perceived risk facets perspective. International Journal of Human-Computer Studies, 59(4), 451–474. https://doi.org/10.1016/S1071-5819(03)00111-3
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50. https://doi.org/10.2307/3151312
- Forsythe, S. M., & Shi, B. (2003). Consumer patronage and risk perceptions in Internet shopping. *Journal of Business Research*, *56*(11), 867–875. https://doi.org/10.1016/S0148-2963(01)00273-9
- Ghalandari, K. (2012). The effect of performance expectancy, effort expectancy, social influence and facilitating conditions on acceptance of e-banking services in Iran: The moderating role of age and gender. *Middle-East Journal of Scientific Research*, 12(6), 801–807. https://doi.org/10.5829/idosi.mejsr.2012.12.6.2536
- Goodhue, D. L., & Thompson, R. L. (1995). Task-Technology fit and individual performance. *MIS Quarterly*, 19(2), 213–236. https://doi.org/10.2307/249689
- GSMA. (2019, January 23). *Myanmar: A burgeoning start-up ecosystem*. GSMA. https://www.gsma.com/mobilefordevelopment/blog/myanmar-a-burgeoning-start-up-ecosystem/
- Gupta, A., Dogra, N., & George, B. (2018). What determines tourist adoption of smartphone apps? An analysis based on the UTAUT-2 framework. *Journal of Hospitality and Tourism Technology, 9*(1), 50–64. https://doi.org/10.1108/JHTT-02-2017-0013
- Hair, J. F., Black, W. C., & Babin, B. J. (2010). *Multivariate data analysis: A global perspective.* Pearson Education.
- Holm, S., & Karlsson, L. (2019). *Mobile banking adoption in an emerging economy: An empirical analysis of users in Myanmar*. [Master's Thesis, KTH Royal Institute of Technology, Sweden. https://kth.diva-portal.org/smash/get/diva2:1372231/FULLTEXT01.pdf

- Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modeling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, *6*(1), 53–60.
- Hungilo, G. G., Suyoto, & Setyohadi, D. B. (2020). Factors influencing acceptance of online shopping in Tanzania using UTAUT2. *Journal of Internet Banking and Commerce*, 25(1), 1–23.
- Indrawati, & Firda, A. (2019, July 24–26). *The used of modified UTAUT 2 model to analyze the continuance intention of travel mobile application* [Paper presentation]. 7th International Conference on Information and Communication Technology (pp. 1–6). Kuala Lumpur, Malasia.
- Indrawati, & Putri, D. A. (2018, May 3–4). Analyzing factors influencing continuance intention of E-Payment adoption using modified UTAUT 2 model (A case study of Go-Pay from Indonesia) [Paper presentation]. 6th International Conference on Information and Communication Technology (ICoICT) (pp. 167–173). Bandung, Indonesia.
- Kang, M., Liew, B. Y. T., Lim, H., Jang, J., & Lee, S. (2015). Investigating the determinants of mobile learning acceptance in Korea using UTAUT2. *Lecture Notes in Educational Technology* (9783662441879), 209–216. https://doi.org/10.1007/978-3-662-44188-6 29
- Kemp, S. (2019, January 31). *Digital 2019: Myanmar*. Datareportal. https://datareportal.com/reports/digital-2019-myanmar
- Khurana, D. S., & Jain, D. (2019). Applying and extending UTAUT2 model of adoption of new technology in the context of M-Shopping fashion application. *International Journal of Innovative Technology and Exploring Engineering (IJITEE)*, 8(9), 752–759. https://doi.org/10.35940/ijitee.I1122.0789S19
- Kim, C., Mirusmonov, M., & Lee, I. (2010). An empirical examination of factors influencing the intention to use mobile payment. *Computers in Human Behavior*, *26*(3), 310–322. https://doi.org/10.1016/j.chb.2009. 10.013
- Kwateng, K. O., Osei Atiemo, K. A., & Appiah, C. (2019). Acceptance and use of mobile banking: An application of UTAUT2. *Journal of Enterprise Information Management*, 32(1), 118–151. https://doi.org/10.1108/JEIM-03-2018-0055
- Lee, J.-M., Lee, B., & Rha, J.-Y. (2019). Determinants of mobile payment usage and the moderating effect of gender: Extending the UTAUT model with privacy risk. *International Journal of Electronic Commerce Studies*, *10*(1), 43–64. https://doi.org/10.7903/IJECS.1644
- Limayem, M., Hirt, S. G., & Cheung, C. M. K. (2007). How habit limits the predictive power of intention: The case of information systems continuance. *MIS Quarterly, 31*(4), 705–737. https://doi.org/10.2307/25148817
- Lin, H. F. (2011). An empirical investigation of mobile banking adoption: The effect of innovation attributes and knowledge-based trust. *International Journal of Information Management, 31*(3), 252–260. https://doi.org/10.1016/j.ijinfomgt.2010.07.006
- Madan, K., & Yadav, R. (2016). Behavioural intention to adopt mobile wallet: A developing country perspective. Journal of Indian Business Research, 8(3), 227–244. https://doi.org/10.1108/JIBR-10-2015-0112
- Megadewandanu, S., Suyoto, & Pranowo. (2016, 27–28). Exploring mobile wallet adoption in Indonesia using UTAUT2: An approach from consumer perspective. 2nd International Conference on Science and Technology-Computer (ICST) (pp. 11–16). Yogyakarta, Indonesia.
- Merhi, M., Hone, K., & Tarhini, A. (2019). A cross-cultural study of the intention to use mobile banking between Lebanese and British consumers: Extending UTAUT2 with security, privacy and trust. *Technology in Society*, *59*, 1–12. https://doi.org/10.1016/j.techsoc.2019.101151
- Moorthy, K., Yee, T. T., T'ing, L. C., & Kumaran, V. V. (2019). Habit and hedonic motivation are the strongest influences in mobile learning behaviours among higher education students in Malaysia. *Australasian Journal of Educational Technology*, 35(4), 174–191. https://doi.org/10.14742/ajet.4432
- Palau-Saumell, R., Forgas-Coll, S., Sánchez-García, J., & Robres, E. (2019). User acceptance of mobile apps for restaurants: An expanded and extended UTAUT-2. *Sustainability, 11*(4),1210. https://doi.org/10.3390/su11041210
- Park, B. W., & Lee, K. C. (2011). The Effect of users' characteristics and experiential factors on the compulsive usage of the smartphone. In T. Kim, H. Adeli, R. J. Robles, & M. Balitanas (Eds.), *International Conference on Ubiquitous Computing and Multimedia Applications* (pp.438–446). Springer. https://doi.org/10.1007/978-3-642-20998-7_52
- Phang, I. G., Zaiton, O., & Cheuk, C. H. (2018). Young adult Malaysian consumers' intention to shop via mobile shopping apps. *Asian Journal of Business Research*, 8(1), 18–37. https://doi.org/10.14707/ajbr.180041
- Piarna, R., Fathurohman, F., & Purnawan, N. N. (2020). Understanding online shopping adoption: The unified theory of acceptance and the use of technology with perceived risk in millennial consumers context. *JEMA Jornal Ilmiaj Bidang Akuntansi dan Manajemen*, 17(1), 51–66. https://doi.org/10.31106/jema.v17i1.5050

- Poushter, J. (2016, February 22). Smartphone ownership and Internet usage continues to climb in emerging economies. Pew Research Center. https://www.pewresearch.org/global/2016/02/22/smartphone-ownership-and-internet-usage-continues-to-climb-in-emerging-economies/
- Putra, A. A., Huda, Q., & Fetrina, E. (2019). An evaluation of e-Money products using UTAUT 2 Model: The case of bank Mandiri. 2019 7th International Conference on Cyber and IT Service Management). Jakarta, Indonesia.
- Raza, S. A., Shah, N., & Ali, M. (2019). Acceptance of mobile banking in Islamic banks: Evidence from modified UTAUT model. *Journal of Islamic Marketing*, 10(1), 357–376. https://doi.org/10.1108/JIMA-04-2017-0038
- Savic, J., & Pesterac, A. (2019). Antecedents of mobile banking: UTAUT Model. *The European Journal of Applied Economics*, 16(1), 20–29. https://doi.org/10.5937/EJAE15-19381
- Shaw, N., & Sergueeva, K. (2019). The non-monetary benefits of mobile commerce: Extending UTAUT2 with perceived value. *International Journal of Information Management*, 45, 44–55. https://doi.org/10.1016/j.ijinfomgt.2018.10.024
- Slade, E. L., Williams, M. D., & Dwivedi, Y. K. (2014). Devising a research model to examine adoption of mobile payments: An extension of UTAUT2. *The Marketing Review, 14*(3), 311–336. https://doi.org/10.1362/146934714X14024779062036
- Tak, P., & Panwar, S. (2017). Using UTAUT2 Model to predict mobile app based shopping: Evidences from India. *Journal of Indian Business Research*, 9(3), 248–264. https://doi.org/10.1108/JIBR-11-2016-0132
- Tamilmani, K., Rana, N. P., Prakasam, N., & Dwivedi, Y. K. (2019). The battle of Brain vs. Heart: A literature review and meta-analysis of "hedonic motivation" use in UTAUT2. *International Journal of Information Management*, 46, 222–235. https://doi.org/10.1016/j.ijinfomgt.2019.01.008
- Thar, S., Myo, K., & Hwang, G.-H. (2017). Effect of mobile devices on the use intention and use of mobile banking service in Myanmar. *Journal of Digital Convergence*, 15(6), 71–82. https://doi.org/10.14400/JDC.2017.15.6.71
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, *27*(3), 425–478. https://doi.org/10.2307/30036540
- Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly, 36*(1), 157–178. https://doi.org/10.2307/41410412
- Wu, J.-H., & Wang, S.-C. (2005). What drives mobile commerce?: An empirical evaluation of the revised technology acceptance model. *Information & Management, 42*(5), 719–729. https://doi.org/10.1016/j.im.2004.07.001
- Zainudeen, A., & Galpaya, H. (2015). *Mobile phones, internet, and gender in Myanmar*. GSMA. https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/02/Mobile-phones-internet-and-gender-in-Myanmar.pdf
- Zhang, L., Zhu, J., & Liu, Q. (2012). A meta-analysis of mobile commerce adoption and the moderating effect of culture. *Computers in Human Behavior*, *28*(5), 1902–1911. https://doi.org/10.1016/j.chb.2012.05.008
- Zhou, T., Lu, Y., & Lu, Y. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in Human Behavior*, 26(4), 760–767. https://doi.org/10.1016/j.chb.2010.01.013
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). *Business research methods*. South-Western Cengage Learning.