

Determinants of Mobile Banking Services Continuance Intention in Malaysia

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ABSTRACT

This study aims to identify the determinants of mobile banking services continuance intention in Malaysia. A comprehensive model integrating Task Technology Fit (TTF), Unified Theory of Acceptance and Use of Technology (UTAUT) and Expectation-Confirmation Theory (ECT) is used to examine the mobile banking services continuance intention. Data were gathered from 197 users of mobile banking services through online questionnaire. The data collected was analysed by using SPSS software and SmartPLS software. The findings revealed that performance expectancy and satisfaction have significant positive association with user's continuance intention. Task characteristics and technology characteristics significantly influence TTF while TTF significantly influences performance expectancy. Both TTF and confirmation significantly influence satisfaction. This study provides an insight to the banks in Malaysia regarding the perspectives of their users towards their mobile banking services by using an integrative model.

Keywords: Mobile banking services; Task Technology Fit (TTF); Unified Theory of Acceptance and Use of Technology (UTAUT); Expectation-Confirmation Theory (ECT); continuance intention

INTRODUCTION

Advancements in information and communication technologies (ICTs) nowadays have popularized self-service technologies (SSTs) globally. SSTs have reshaped the relationships between an organization with its customers to enhance the quality of customer service and consequently, obtain competitive advantage in the market (Vakulenko et al., 2018). Amongst others, banking industry is leading the use of SSTs (Chaouali & El Hedhli, 2018). With the development of SSTs, it transforms the traditional way of banking services which require the presence of customers waiting in a bank to be served by the staffs into a more convenient way for customers to use the bank services by themselves. For instance, internet banking, automated teller machines (ATMs) and more frequently, mobile banking services are among some of those financial innovations. All these services provide more convenience and ease for the customers to use banking services.

Mobile banking service is an advanced technology service channel which is provided by a bank through the mobile applications to enable their customers to conduct the banking

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activities (Ba et al., 2020). By using mobile devices, all banking activities such as checking account balances, fund transfer and credit loan payments can be performed conveniently without the need to queue up at the physical bank, provided that internet connection is available. Statistics have shown that the number of internet banking subscribers reached to 33.6 million and mobile banking penetration rate to population was 57.5% in July 2020 (Goh, 2020).

Every bank should pay attention on its existing customer retention apart from just focusing on new customers initial adoption behaviour towards the mobile banking services. Continuance intention in mobile banking services presume that there is a loyalty association between the banks and their customers. Customer loyalty with banks is vital as this increases profitability and lowers the costs to attract new customers (Dawes & Swailes, 1999; Gupta et al., 2004; Tantakasem & Lee, 2007). Therefore, banks should enhance the performance of mobile banking services for the purpose of retaining their customers. The List of Banks Offering Internet and Mobile Banking Services of Bank Negara Malaysia shows that there are currently 18 banks in Malaysia competing in offering mobile banking services to their clients.

The recent COVID-19 pandemic has forced banking industry to reconsider on how they perform day-to-day operation as now Malaysians are strictly required to practise social distancing. In addition, contactless payment for transactions is getting widely adopted to avoid spreading the virus through contaminated surfaces such as cash. Finance minister of Malaysia, Tengku Datuk Seri Zafrul Abdul Aziz has announced that the pandemic has increasingly boosted online sales of consumer products by 40 percent. Therefore, upsurge in using cashless payment during online shopping is the inevitable consequence of the COVID-19 pandemic; therefore, mobile banking services plays a significant role in meeting the latest demand for this kind of transactions and has huge potentials to benefit from such current trend. Mobile banking service involves using smartphone as the mobile terminal to gain immediate access to the banking services such as account inquiry, funds transfer and paying for bills (Dahlberg et al., 2008). Mobile banking services is a breakthrough that helps bank clients overcome the temporal and the spatial limitations in using banking services in any place at any time (Zhou, 2012).

Therefore, this study sought to find out from the consumer perspective, the factors that determining the consumer's continuance intention in the mobile banking services in Malaysia in relation to the task characteristics, technology characteristics, task technology fit, performance expectancy, effort expectancy, social influence, facilitating conditions, satisfaction and confirmation. By examining the determinants that affect continuance intention in mobile banking services, it aims to generate an insightful idea to the banks to improve the quality of mobile banking services on the premise that the bank users will only continue to use a product or service when they find it satisfactory.

LITERATURE REVIEW

Mobile Banking Services

Generally, mobile banking services is defined as the act of dealing with users accessibility to various banking facilities including checking account balance, transference and bill payment through mobile telecommunication tools such as smartphone, tablet and other gadgets (Dahlberg et al., 2008; Kim et al., 2009; Laukkanen, 2007; Oliveira et al., 2014; Zhou et al.,

2010). Mobile banking application represents the platform on mobile devices which connect one with his bankers. In Malaysia, Maybank is the first bank which offers the mobile banking services in year 2002 through SMS banking. Subsequently in year 2006, they develop M2U mobile for the 3G mobile phones users. Mobile banking services evolved from short message service (SMS) banking (Shaikh & Karjaluo, 2015) to wireless application protocol (WAP) website (Ralph & Aghvami, 2001) and subsequently to mobile phone application (Zhou, 2011).

Compared to the other forms of bank services channel, mobile banking services is the most convenient and easiest way to conduct financial services. This is because a person can use mobile banking services without the need to consider the time element and location as banks become virtual in the mobile world (Suoranta, 2003). From the viewpoint of banks, they can easily follow up on the account statement with the customers by sending notifications to the customers via the mobile banking applications. For instance, the banks can remind the customers regarding the outstanding loan repayment dates, check their account balance, and approve the required amounts of payment through mobile banking services (Goyal et al., 2012). The performance of mobile banking services can be enhanced from time to time and create customer loyalty towards the bank in the mobile banking services channel. Therefore, it is essential to know users' perception towards the mobile banking services.

User's Continuance Intention in Mobile Banking Services

The term continuance has been described as the intention to continue to purchase the same products or services after the first purchase (Atcharyachanvanich, 2008), which is in line with repeated purchasing decisions (Kwak and Kang, 2009). The continuance intention or intention to repurchase refers to the decision of a person to repurchase a stated goods or services from the same company, taking into account its current situation and the probable circumstances (Hellier et al., 2003). Therefore, continuance intention is a mental state that represents the decision of a person to replicate their current conduct, which can be contrasted with the concept of marketing intention to repurchase. The intentional behaviour association in information technology (IT) contexts is recorded in the low to the moderate range (Bhattacharjee and Sanford, 2009). Baabdullah et al. (2019) explored the most critical factors of intention to take up mobile banking services among Saudi customers' continued intention towards taking mobile banking, using Technology Acceptance Model (TAM) and Task Technology Fit (TTF) models. There were also studies using Unified Theory of Acceptance and Use of Technology (UTAUT) to explore the acceptance of mobile banking services among the consumers (Ahmed et al., 2017; Luo et al., 2010). Bhattacharjee (2001b) suggested the expectation confirmation theory (ECT) is a landmark in the research field by distinguishing consumer recognition of an information system (IS) from the continuance behaviour. The goal of this research is to examine the determinants that influence the continuance intention of the users in Malaysia on mobile banking services using ECT, TTF and UTAUT.

Task Technology Fits (TTF)

The task technology fits (TTF) is the extent to which the individual is assisted by a technology in carrying out his or her tasks and it is the fit between the task requirements, individual abilities and the technology's functionality and interface (Goodhue, 1997). The recent study by Tam and Oliveira (2019) had confirmed the direct and positive effect of the TTF on the individual intention to use mobile banking services and in improving their

individual performance. Previous research also indicates the value of TTF in terms of user satisfaction and intention to continue. Lin (2012) established that perceived fit is positively linked to virtual learning system (VLS) satisfaction. Perceived fit is also linked positively to the decision to proceed with VLS. Therefore, in this case of study, the TTF model is used to determine the continuance intention on mobile banking services in Malaysia.

Task Characteristics (TAC)

The task characteristics of mobile banking services will contribute to a higher task technology fit (TTF) when compared to online or conventional banking (Zhou et al., 2010). Oliveira et al. (2014) also found that the task technology match of mobile banking services in Portugal is positively affected by the task characteristics. Afshan and Sharif (2016) showed the significant involvement of task characteristics and technology features to facilitate the fit of mobile banking services task technology in Pakistan. The advantage of mobile banking services is that conventional banking tasks can be conducted easily on smartphones (Dahlberg et al., 2008).

Technology Characteristics (TEC)

Users are most attracted to the features of mobile banking services which enable them to use basic banking functions such as account management, inquiries and brokerage in a convenient and usable manner through technology (Oliveira et al., 2014). The effect of role and technology attributed to TTF has been addressed and validated in previous studies. The mobile banking applications allow for a simpler user experience, making it easy for consumers to use such apps. Consumers will view mobile banking services as useful when mobile banking services technologies fulfil user's task criteria, which will boost user success in completing the task.

Unified Theory of Acceptance and Use of Technology (UTAUT)

UTAUT is established by Venkatesh et al. (2003), which represents the extension of Technology Acceptance Model (TAM). They pointed out that there are four constructs in UTAUT that have impact on the adoption of an IS which are performance expectancy, effort expectancy, social influence, and facilitating condition. UTAUT was established based on the eight prominent theories in the research of IS adoption: Theory of Reasoned Action (TRA), the motivational model (MM), Theory of Planned Behaviour (TPB), the PC utilization model (MPCU), Innovation Diffusion Theory (IDT), Social Cognitive Theory (SCT) and the integrated model of technology acceptance and planned behaviour (C-TAM-TPB). This study chooses UTAUT in predicting the continuous intention in mobile banking services because UTAUT is designed to gain the perceptions of the users towards an IS in which mobile banking services represent one of the IS in the world. It helps the researchers to further understand users' perceptions toward the mobile banking services in Malaysia.

Performance Expectancy (PE)

Performance expectancy refers to the degree of people's belief in using a system to help them attain gains in the job performance and represents the most powerful indicators in predicting the behavioural intention of a person (Venkatesh et al., 2003). The concept of performance expectancy in UTAUT is captured from the perceived usefulness (TAM), relative advantage (IDT), extrinsic motivates (MM), job-fit (MPCU) and outcome expectations (SCT). It reflects

the viewpoints of the users regarding the performance improvement by mobile banking services including time savings and mobility. In particular, when they are not able to go to the bank to get financial services such as credit loan payment, they can make the payment through mobile banking services with their smartphone device at home or elsewhere. When the users expect the positive outcomes brought by the technology, they tend to use it (Compeau & Higgins, 1995). When the performance expectancy of user towards mobile banking services is high, they will choose to continue using the mobile banking due to the expected benefits brought by it. Therefore, the performance expectancy will directly influence the continuance intention (Odoom & Kosiba, 2020; Saparudin et al., 2020). When the expectation of users toward the positive outcomes is always high, it is highly probable that they will continue to use the mobile banking services.

Effort Expectancy (EE)

Effort expectancy is described as the extent to which ease is associated with the use of the system (Cham et al., 2018; Venkatesh et al., 2003). In UTAUT, effort expectancy is driven from the perceived ease of use (TAM), complexity (MPCU), and easy-of-use (IDT). The effort expectancy reflects the difficulty in accessing mobile banking services from the viewpoints of the consumers. When the users can operate the features in the system of mobile banking services easily, there is less effort for them to learn how to perform the features in mobile banking applications. Consequently, it fulfils their high expectation from them towards the system of mobile banking services and they tend to continue use the mobile banking services in the future. If a technology is easy to use, its adoption rate is higher (Leong et al., 2013). The finding of Saparudin et al. (2020) revealed that there is positive relationship between the effort expectancy and continuance use of mobile banking services. When the users perceive mobile banking services to be easy and convenient to use, they will continue using it.

Social Influence (SI)

Venkatesh et al. (2003) defined social influence as the extent to which an individual perceives others' belief regarding his adoption of the system as important. In UTAUT, social influence is driven from social factors (MPCU), subjective norm (TRA, TAM, TPB and C-TAM-TPB), and image (IDT). Social influence represents the effect of environmental factors, for instance, family relatives and friends affecting an individual decision to continuously use the mobile banking services. Adhering to the social influence theory, the consumers tend to listen to or follow the important others as their referees (Bagozzi and Lee, 2002; Cham et al., 2020; Lim et al., 2019; Lim, Ng, Chuah, Cham, & Rozali, 2019). When a person's relatives, friends or anyone who is important to him suggest him that he use mobile banking services, he would probably follow the recommendation. There is a significant relationship between social influence towards the continuance intention by the researchers regarding the continuance intention in mobile banking services (Saparudin et al., 2020) and continuance intention in use of e-payment (Putri, 2018), When the important people around an individual persuade him to use mobile banking services, he will be affected by their recommendations. If the individual is surrounded by people who use the mobile banking services regularly, consequently, the individual will be affected and use the mobile banking services consistently.

Facilitating Condition (FC)

Facilitating condition refers to the degree to which a person perceives that an organizational and technical infrastructure exist to support the use of a system (Venkatesh et al., 2003). Facilitating condition is based on the concept of compatibility (IDT), perceived behavioural control (TPB and C-TAM-TPB) and facilitating conditions (MPCU). It reflects the effect of availability of resources and knowledge affect the continuance usage of mobile banking services. When the users of mobile banking services believe that they have the necessary resources and knowledge about the use of mobile banking services, they will use it (Bhatiasevi, 2016; Chan et al., 2020). Necessary resources include smartphone, tablet and Internet. Afshan and Sharif (2016), Ahmed et al. (2017) and Zhou et al. (2010) suggested that there is a significant and positive association between facilitating condition and acceptance of mobile banking services. Also, previous findings showed that there is significant effect of facilitating condition on continuance intention (Lee et al., 2020; Wu & Wu, 2019). The telecommunication service provider in Malaysia, Celcom Axiata Berhad, Digi Telecommunications Sdn Bhd, Maxis Berhad, U Mobile Sdn Bhd, Telekom Malaysia Berhad (TM), and TIME dotcom Berhad have jointly offer 1GB free Internet per day for the users to ensure that the users stay connected during COVID-19 pandemic (Yeoh, 2020) and have necessary support to perform mobile banking transactions.

Expectation Confirmation Theory (ECT)

The theory of expectation confirmation is a cognitive theory that seeks to clarify the satisfaction after purchase or the post-adoption as a function of expectations, perceived success and disconfirmation of beliefs (Lim et al., 2020; Oliver, 1980). Four key constructs consist of ECT, namely confirmation of expectations, satisfaction, perceived usefulness and the intention to continue. Expectations are the user's expectations about the quality or results of a product (Spreng, Mackenzie, and Olshavsky, 1996). Confirmation expands when the product is considered to be working better than expected (Cheng et al., 2019; Oliver, 1980), and satisfaction is the description of positive emotion-related psychological states (Oliver, 1981). The level of consumer satisfaction with a product may be the primary cause for making a repurchase decision, which according to the marketing literature, has the same definition as the continuation of the intention to use IT (Tran et al., 2019).

Confirmation (CNF)

Confirmation is characterized as the degree to which user perceives confirmation of their initial expectations during actual usage. Confirmation is proven to have a significant impact on the perceived usefulness and user's satisfaction (Bhattacharjee, 2001a). The ECT indicates that user satisfaction is influenced by their previous use of IS confirmation of expectations (Bhattacharjee, 2001b). Therefore, in the post-adoption sense, users would be happy if internet banking services meet their standards of the internet banking (Hoehle et al., 2012). In previous research studies on the continued use of various mobile services such as mobile apps (Hew et al., 2015), mobile shopping (Hung et al., 2012), there was no report on any investigation of the direct relationship between the aim to confirmation and user's continuance intention. Therefore, confirmation is one of the determinants proposed in this study to investigate continuance intention on mobile banking services.

Satisfaction (SAT)

The continuance intention is wholly influenced by the contentment of the users with the IS. Satisfaction implies to an overall assessment of an IS. It represents an emotion-based reaction

about the IS goal (Lam et al., 2004; Kim, 2010). Besides that, Yen and Lu (2008) found that satisfaction is positively related to the acceptance of bidders in online auctions. Subsequent IS research has empirically established that user satisfaction is a key determinant of IS continuance intention (Thong, Hong and Tam, 2006; Kim, 2010). When a user feels that the program will not meet their initial requirements and it provides them with less values, then it is highly probable that the user would not want to continue to use it. Therefore, the customer satisfaction is believed to have a positive impact on the decision to continue towards the usage of mobile banking services.

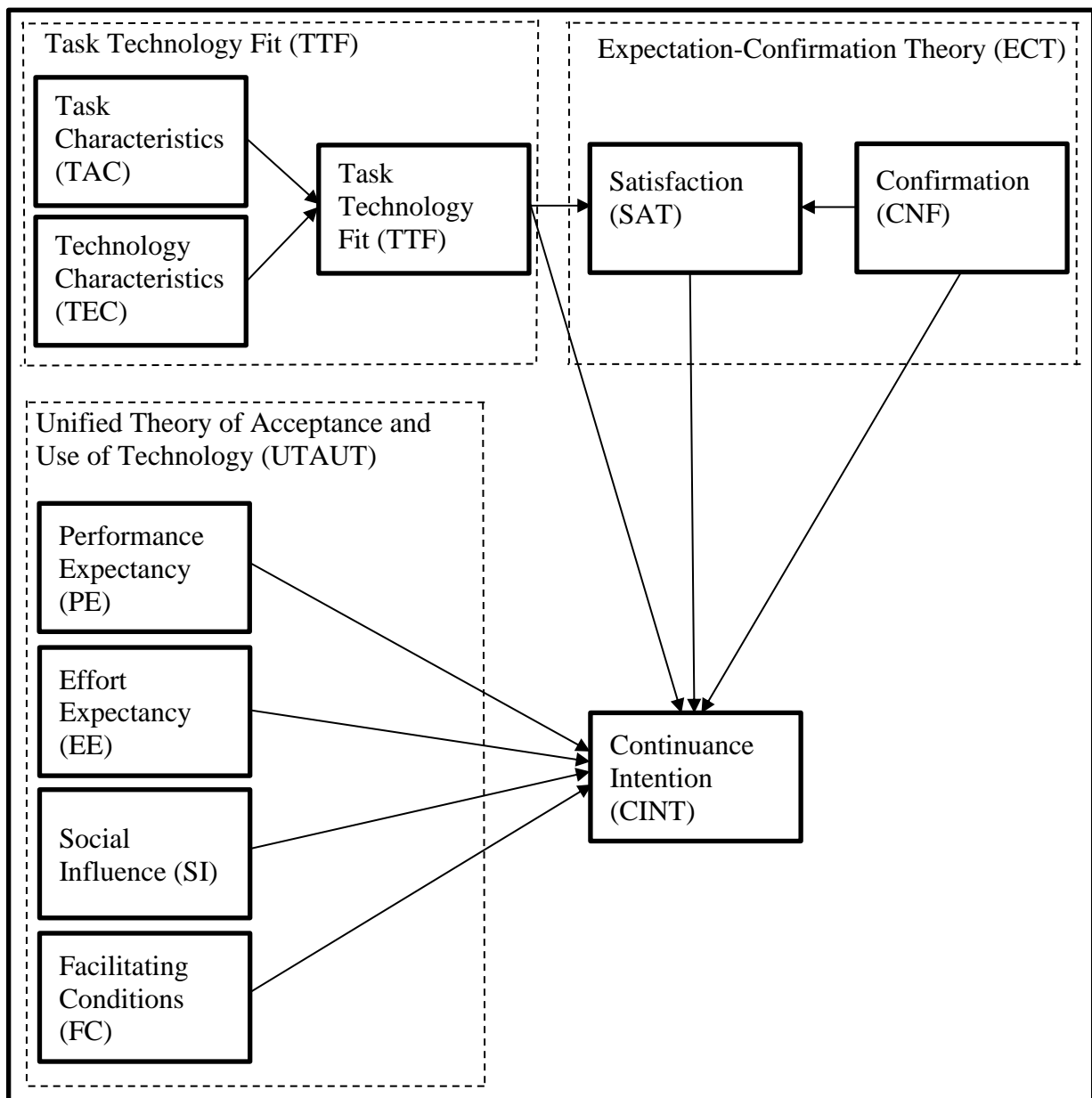
Research Hypotheses and Conceptual Framework

The theoretical study utilizes an integrated model of TTF-UTAUT consisting of task technology fit (TTF), task characteristics (TAC), technology characteristics (TEC), performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating condition (FC). This integrated model is suitable for the investigation of initial adoption behaviour of the consumers. In order to examine the continuance use behaviour of the consumers, the study proposed confirmation (CNF) and satisfaction (SAT), the constructs of expectation-confirmation theory (ECT) into the framework to increase the predictability of the model. The hypotheses are developed as follows:

- H1:** *There is a positive association between task technology fit (TTF) and user's satisfaction.*
- H1a:** *There is a positive association between task characteristics (TAC) and task technology fit (TTF).*
- H1b:** *There is a positive association between technology characteristics (TEC) and task technology fit (TTF).*
- H2:** *There is a positive association between task technology fit (TTF) and user's continuance intention.*
- H3:** *There is a positive association between task technology fit (TTF) and performance expectancy (PE).*
- H4:** *There is a positive association between performance expectancy (PE) and user's continuance intention.*
- H5:** *There is a positive association between effort expectancy (EE) and user's continuance intention.*
- H6:** *There is a positive association between social influence (SI) and user's continuance intention.*
- H7:** *There is a positive association between facilitating condition (FC) and user's continuance intention.*
- H8:** *There is a positive association between confirmation (CNF) and user's satisfaction.*
- H9:** *There is a positive association between confirmation (CNF) and user's continuance intention.*
- H10:** *There is a positive association between user satisfaction (SAT) and user's continuance intention.*

Conceptual Framework

Figure 1: Research Framework



RESEARCH METHOD

In order to examine the determinants of mobile banking services continuance intention in Malaysia, a self-administered questionnaire was developed. Purposive sampling method was used to select the respondents who are the users of mobile banking services. An online questionnaire was distributed to collect data from the respondents. The sample size was calculated using G-Power statistical software. The results revealed that at least 127 respondents are needed. There are 237 sets of questionnaires obtained and 197 respondents were used for the analysis after the data cleaning process.

The questionnaire contains three sections. Section A collects the demographic profile of respondent. Section B investigates the respondent's behaviour towards mobile banking services (task characteristics, technology characteristics, task technology fit, performance expectancy, effort expectancy, social influence, facilitating condition, confirmation and satisfaction). Section C examines the respondent's continuance intention in mobile banking services. The four items of each task characteristics, technology characteristics and task technology fit are adapted from Zhou et al. (2010). The four items of performance expectancy and effort expectancy are adapted from Luarn & Lin (2005), Foon & Fah (2011), Venkatesh et al. (2003), and Venkatesh & Zhang (2010) respectively. Furthermore, there are four items of social influence adapted from Venkatesh et al. (2003) and Zhou et al. (2010). As for facilitating condition, there are four items that are adopted from Venkatesh et al. (2003, 2011, 2012) and Zhou et al. (2010). The four items of confirmation are adopted from Bhattacharjee (2001b) and Kim et al. (2009). The four items of satisfaction are adopted from Bhattacharjee (2001b) and Lee & Chung (2009). Lastly, the four items of continuance intention are adopted from Bhattacharjee (2001b). All variables are measured on a 5-point Likert Scale where 1 indicates strongly disagree and 5 indicates strongly agree. Pre-testing is conducted before the actual study to ensure that questionnaire distributed is clearly understood by the respondents and eliminate bias circumstances when they are answering the question.

RESULTS

Table 1: Demographic Profile of Respondents

Variables	Category	Frequency	Percentage
Age	20 and below	33	16.8
	20-29	134	68.0
	30-39	12	6.1
	40-49	16	8.1
	50 and above	2	1.0
Gender	Female	115	58.4
	Male	82	41.6
Mobile banking services recently used	Ambank	20	5.7
	CIMB Bank	64	18.1
	Hong Leong Bank	50	14.2
	Maybank	100	28.3
	Public Bank	74	21.0
	RHB Bank	37	10.5
	Others	8	2.3
Frequency of transactions by using the mobile banking services in a month	5 times and below	65	33.0
	6-10 times	94	47.7
	11-15 times	26	13.2
	16 times and above	12	6.1
Years dealing with mobile banking services	Less than one year	18	9.1
	1-2 years	72	36.5
	3-4 years	68	34.5
	5 years and above	39	19.8

Table 1 shows a summary of the demographic profile of 197 respondents. Majority of the respondents were aged between 20 years to 29 years (68.0 per cent). More than half of the respondents are female (58.38 per cent). Besides, most of the respondents were Chinese and 59.4 percent of respondents have education level of bachelor's degree. 65.99 per cent were students and the most popular mobile banking services recently used by the respondents is Maybank. Moreover, 47.7 per cent respondents had conducted their transactions 6 to 10 times by using the mobile banking services in a month. Furthermore, most of the respondents had dealt with mobile banking services in between 1 to 2 years (36.5 per cent) and lastly, majority of the respondents (84.8 per cent) had increased the number of times to use mobile banking services during COVID-19 pandemic.

Assessment of Measurement Model

Table 2: Outer Loadings, Composite Reliability and AVE

Variables	Items	Loadings	Composite Reliability	Average Variance Extracted (AVE)
Continuance Intention (CINT)	CINT1	0.815	0.871	0.629
	CINT2	0.823		
	CINT3	0.706		
	CINT4	0.821		
Confirmation (CNF)	CNF1	0.856	0.920	0.741
	CNF2	0.871		
	CNF3	0.848		
	CNF4	0.869		
Effort Expectancy (EE)	EE1	0.857	0.929	0.767
	EE2	0.881		
	EE3	0.892		
	EE4	0.874		
Facilitating Condition (FC)	FC1	0.851	0.840	0.571
	FC2	0.775		
	FC3	0.753		
	FC4	0.625		
Performance Expectancy (PE)	PE1	0.850	0.877	0.642
	PE2	0.763		
	PE3	0.771		
	PE4	0.817		
Satisfaction (SAT)	SAT1	0.847	0.895	0.683
	SAT2	0.858		
	SAT3	0.876		
	SAT4	0.715		
Social Influence (SI)	SI1	0.800	0.845	0.579
	SI2	0.830		
	SI3	0.695		
	SI4	0.710		
Task Characteristics (TAC)	TAC1	0.761	0.874	0.636
	TAC2	0.756		
	TAC3	0.830		

Technology Characteristics (TEC)	TAC4	0.839		
	TEC1	0.829	0.869	0.689
	TEC2	0.839		
	TEC4	0.823		
Task Technology Fit (TTF)	TTF1	0.790	0.892	0.674
	TTF2	0.858		
	TTF3	0.868		
	TTF4	0.764		

Table 2 presents the results for the assessment of the measurement model. As shown in the table above, the loadings of the indicators range from 0.625 to 0.892. All loadings are greater than 0.708, which illustrate that the indicator reliability has been achieved, except CINT3, FC4 and SI3. However, the loading value of CINT3, FC4 and SI3 are greater than 0.4 which is acceptable as the given average variance extracted (AVE) value is greater than 0.5 (Hulland, 1999). Convergent reliability was assessed by the average variance extracted. The AVE values for all indicators are greater than 0.5, thus, the internal consistency is achieved. The composite reliability (CR) values for all indicators are greater than 0.7 and thus, meet the requirement for reliability.

Table 3: Discriminant Validity

	CINT	CNF	EE	FC	PE	SAT	SI	TAC	TEC	TTF
CINT										
CNF	0.767									
EE	0.600	0.589								
FC	0.805	0.899	0.750							
PE	0.804	0.707	0.686	0.736						
SAT	0.815	0.872	0.690	0.864	0.742					
SI	0.528	0.713	0.285	0.736	0.510	0.597				
TAC	0.445	0.435	0.488	0.633	0.569	0.560	0.358			
TEC	0.678	0.619	0.609	0.736	0.868	0.757	0.461	0.692		
TTF	0.725	0.753	0.615	0.816	0.812	0.821	0.589	0.566	0.807	

The discriminant validity from the results is examined by performing Henseler's Heterotrait-Monotrait (HTMT) ratio of correlations. The results from Table 3 shows that all values of the indicators fulfil the criterion at the threshold of HTMT.90, therefore, the discriminant validity has been achieved.

Assessment of Structural Model

Table 4: Assessment of Path Relationship

PR	PC	SD	T	P	CI	VIF	f ²	R ²	Q ²	
CNF -> CINT	0.144	0.103	1.395	0.082	-0.018	0.321	3.213	0.015	0.576	0.346
EE -> CINT	-0.008	0.088	0.089	0.465	-0.150	0.138	2.066	0.000		
FC -> CINT	0.164	0.103	1.594	0.055	-0.013	0.328	2.892	0.022		

PE -> CINT	0.306	0.088	3.460	0.000	0.161	0.454	2.239	0.098		
SAT -> CINT	0.264	0.126	2.103	0.018	0.044	0.458	3.154	0.052		
SI -> CINT	-0.020	0.062	0.319	0.375	-0.127	0.074	1.685	0.001		
TTF -> CINT	0.022	0.096	0.226	0.410	-0.130	0.185	2.625	0.000		
TAC -> TTF	0.166	0.064	2.609	0.005	0.052	0.262	1.431	0.036	0.458	0.293
TEC -> TTF	0.572	0.060	9.475	0.000	0.470	0.666	1.431	0.422		
TTF -> PE	0.677	0.048	14.245	0.000	0.586	0.745	1.000	0.846	0.458	0.290
TTF -> SAT	0.367	0.092	3.993	0.000	0.218	0.520	1.742	0.220	0.649	0.434
CNF -> SAT	0.517	0.088	5.863	0.000	0.371	0.658	1.742	0.437		

The assessment of structural model begins with checking the collinearity. Variance inflator factor (VIF) is employed and all VIF values in Table 4 are less than 3.3 which fulfil the criteria of Hair et al., 2011. Therefore, all independent variables do not posit collinearity issues. The path coefficients analysis is generated to examine the significance of the structural model associations using the bootstrapping approach.

Performance expectancy (H4, $\beta = 0.306$, $p < 0.01$) and satisfaction (H10, $\beta = 0.264$, $p < 0.05$), are significant and positively related to continuance intention in mobile banking services. Therefore, H4 and H10 are supported. In contrary, task technology fit (H2, $\beta = 0.022$, $p > 0.05$), effort expectancy (H5, $\beta = -0.008$, $p > 0.05$), social influence (H6, $\beta = -0.020$, $p > 0.05$), facilitating condition (H7, $\beta = 0.164$, $p > 0.05$) and confirmation (H9, $\beta = 0.144$, $p > 0.05$) are insignificant and thus, H2, H5, H6, H7 and H9 are rejected.

The assessment of the path coefficient illustrates that task characteristics (H1a, $\beta = 0.166$, $p < 0.01$) and technology characteristics (H1b, $\beta = 0.572$, $p < 0.01$) are significant and positively related to task technology fit. Therefore, H1a and H1b are supported. In addition, the relationship between task technology fit and performance expectancy is also significant (H3, $\beta = 0.677$, $p < 0.01$), and thus H3 is supported. Also, the assessment of the path coefficient shows that task technology fit (H1, $\beta = 0.367$, $p < 0.01$) and confirmation (H8, $\beta = 0.517$, $p < 0.01$) are significant and positively related to satisfaction. Therefore, H1 and H8 were supported.

The assessment of R² illustrates that the seven constructs: confirmation, effort expectancy, facilitating conditions, performance expectancy, satisfaction, social influence and task technology fit describe 57.6% of the variation in continuance intention in mobile banking services. Moreover, task characteristics and technology characteristics describe 45.8% of the variation in task technology fit while task technology fit describes 45.8% of the variation in performance expectancy. Lastly, task technology fit and confirmation describe 64.9% of the variation in satisfaction.

Cohen's f^2 was used to analyze the effect size of the predictor constructs (Cohen, 2013). Based on the results in Table 4.12, CNF, EE, FC, PE, SAT, SI and TTF have a small effect on CINT in mobile banking services as the values are lower than 0.15. TAC has a small impact, while, TEC has large effect on TTF. Moreover, TTF has a large effect on PE as the value exceeds 0.35. The effect of TTF and CNF on the SAT are medium (0.220) and large (0.437) respectively. For the predictive relevance (Q^2), all the values are greater than zero which indicated that the presence of predictive relevancy between independent and dependent variables in this study.

Table 5: PLS predict Analysis

Items	PLS-SEM		LM	PLS-SEM - LM
	RMSE	Q ² _predict	RMSE	RMSE
CINT4	0.614	0.301	0.631	-0.017
CINT3	0.724	0.215	0.774	-0.050
CINT1	0.672	0.262	0.735	-0.063
CINT2	0.684	0.300	0.718	-0.034
PE3	0.661	0.224	0.674	-0.013
PE1	0.509	0.317	0.487	0.022
PE4	0.540	0.269	0.547	-0.007
PE2	0.634	0.266	0.622	0.012
SAT2	0.619	0.436	0.645	-0.026
SAT3	0.582	0.491	0.611	-0.029
SAT4	0.890	0.282	0.926	-0.036
SAT1	0.582	0.469	0.597	-0.015
TTF4	0.675	0.325	0.658	0.017
TTF2	0.545	0.399	0.552	-0.007
TTF1	0.636	0.167	0.631	0.005
TTF3	0.611	0.282	0.601	0.010

In order to verify the predictive power of the model, the PLSpredict is performed. The results in Table 5 revealed the degree of predicting errors of continuance intention in mobile banking services. Root mean square error (RMSE) statistics enables the estimation of prediction errors that are symmetrically distributed (Chin et al., 2020). It is used to compare the predictive performance of the PLS-SEM model and the naïve linear regression (LM) benchmark model. When comparing the RMSE statistical values of PLS-SEM model with that of the naïve LM benchmark model, the majority of the RMSE statistical values of PLS-SEM are lower than the RMSE statistical values of naïve LM benchmark. Therefore, the PLS-SEM analysis shows medium predictive power.

DISCUSSIONS

Based on Table 4, task technology fit has a significant positive association with the user's satisfaction in mobile banking services. The result is consistent with the previous study of Lin (2012). The satisfaction of the users of mobile banking services in Malaysia is influenced by whether the mobile banking services fit their daily needs. The ubiquitous need of users to conduct their banking tasks underpins their increased satisfaction and the intention to continue using mobile banking services as the system does in fact address their needs. If users do not have such a need, their interests in mobile banking services would decrease which, in turn, could lead to their preferences for other types of banking services (Zhou et al., 2010).

Furthermore, task characteristics have a significant positive association with task technology fit. Therefore, the hypothesis 1a is supported and this reflects that task characteristics do really influence the task technology fit in mobile banking services. This outcome is consistent with previous study that task characteristics of mobile banking services will contribute to a higher task technology fit when compared to online or conventional banking (Zhou et al., 2010). If the users can perform their tasks easily, this will lead to continuance intention of

mobile banking services. If mobile banking services do offer a wide range of functions and users believe that value prevails underlying these functions, the users will accept the system of mobile banking services that fit their needs.

Moreover, technology characteristics have a significant association to the task-technology fit in mobile banking services. The hypothesis 1b is supported and the results suggested that technology characteristics have a greater impact compared to task characteristics on task technology fit. This is because many users just use the mobile banking services to check for their balances rather than trying all its financial service functions. This finding is consistent with previous study of Oliveira et al. (2014) which revealed that the task technology match of mobile banking services in Portugal is positively affected by the technology characteristics. Users are most attracted to the potentials of mobile banking services which enable users to use basic banking functions such as account management, inquiries and brokerage in a convenient and usable manner through technology (Oliveira et al., 2014). The users of mobile banking services in Malaysia are more focusing on the mobile banking services technology rather than its functions. This is because lots of the users use mobile banking services are for making transactions to third parties, they do not really use all other financial services provided by mobile banking services.

Task technology fit has no significant association to the user's continuance intention in mobile banking services. The hypothesis 2 is not supported and this reflects that task technology fit does not really influence the user's continuance intention in mobile banking services. This is inconsistent with previous study which has been carried out that showed some of the significant correlations between the task technology fit and the intention to continue (Larsen et al., 2009; Lin, 2012). The users of mobile banking services in Malaysia do not decide whether they will continue using the mobile banking services based on the task technology fit. The users perceived that same functionalities of mobile banking services can be found in other banking services channel such as internet banking or ATM services. They will not rely on the task technology fit of mobile banking services to continuously use it.

In addition, task technology fit has a significant positive association with the performance expectancy in mobile banking services. The hypothesis 3 is supported and this reflects that task technology fit does really influence the performance expectancy in mobile banking services. This finding is consistent with previous study such as Afshan and Sharif (2016) who found that performance expectancy positively influences the fit of mobile banking task technology. Consumers will view mobile banking as useful when mobile banking technologies fulfil user's task criteria, which will boost user success in completing the task. The users of mobile banking services in Malaysia perceived that the mobile banking services technologies meet the requirement of their tasks, they form a high perception of performance improvement by using the mobile banking services which ensures a good task technology fit may be a critical way to improve the performance expectancy.

Performance expectancy has significant positive association with user's continuance intention. The hypothesis 4 is supported and this finding is consistent with the findings of previous studies (Saparudin et al., 2020). Venkatesh et al. (2003) suggested that the performance expectancy represents the most powerful indicators in predicting the behavioural intention of a person. The users of mobile banking services in Malaysia believe that the performance will improve with mobile banking services such as credit payment and fund transfer. As they perceived mobile banking services bring them benefits such as time savings and mobility that

allow them to perform the banking tasks in any place and at any time, they will continuously use it rather than switch to other channels to obtain banking services.

Next, effort expectancy has no significant association with the user's continuance intention in mobile banking services. Therefore, hypothesis 5 is not supported and this finding is consistent with the previous studies (Amalia, 2019; Odoom & Kosiba, 2020). This may be due to the global technology advancement that makes mobile device a necessary item in life. Consequently, more and more Malaysians are familiar with the features of mobile devices and internet. Their frequent experience with the mobile device such as smartphone helps them adapt to any new technology fast, including easy learning of mobile banking applications in such a way that there is no longer any issue on the difficulty to operate mobile banking applications to obtain banking services. Therefore, the user's continuance intention will not increase, even though the difficulty is low in the operation of mobile banking services.

Social influence has no significant association with the user's continuance intention in mobile banking services. Therefore, hypothesis 6 is not supported. The result is consistent with the findings of Afshan and Sharif (2016) and Hew et al. (2015) which both suggested there is no significant relationship between social influence and intention to adopt mobile banking services. The result implies that there is a lack of supporting evidence that shows Malaysians who continuously use the mobile banking applications can influence the people in their surroundings to continuously use mobile banking services. It may be due to the privacy issue. Since financial information is private and confidential, an individual could be reluctant to share the experience of using mobile banking services with the people around them, thus limit the power to influence in their social network.

Facilitating condition has positive but non-significant association with user's continuance intention. Hypothesis 7 is not supported and this finding is consistent with the previous studies of Baptista and Oliveira (2015) and Owusu Kwateng et al. (2019). According to Amalia (2019), facilitating condition has no significant association with continuance intention as the users perceived that the availability and capability of resources provided is limited. The users of mobile banking services in Malaysia perceived that there is lack of professionals available or someone who can help assist them in using mobile banking services or the capability of resources cannot fully support their use. Thus, they do not expect too much on the facilitating condition of the mobile banking services.

Confirmation has significant positive association to user's satisfaction. Therefore, the hypothesis 8 is supported which is in accordance with the findings of previous studies (Kumar et al., 2018; Poromatikul et al., 2019; Susanto et al., 2016). Our results illustrate that satisfaction of users of mobile banking services in Malaysia is strongly affected by the confirmation. According to Bhattacharjee (2001b), the users' confirmation of expectation towards an information system use has a positive influence on their satisfaction. Confirmation has larger effect than the task technology fit on user's satisfaction in mobile banking services in Malaysia. The users of mobile banking services in Malaysia are more concern on how the performance of mobile banking applications create delighted experience with them to achieve beyond the expectations, therefore, they will gain greater satisfaction on it.

Confirmation has positive but non-significant association to user's continuance intention. Therefore, the hypothesis 9 is not supported and our findings are consistent with previous

study of Poromatikul et al. (2019). The result suggest that confirmation does not have a direct impact on user's continuance intention in mobile banking services in Malaysia. As Larsen et al. (2009) revealed that the degree of confirmation based on a set of initial expectations to information system lay the foundation for satisfaction, and satisfaction with that system has a strong impact in continuance intention. Therefore, there is no significant direct relationship between confirmation and continuance intention in mobile banking services. This anticipates that the users of mobile banking services in Malaysia will not necessarily use the mobile banking applications continuously even though their expectations towards the services have been achieved.

Satisfaction has a significant association to the user's continuance intention in mobile banking services. Hypothesis 10 is supported, and this finding is consistent with previous study by Bhattacharjee (2001b). Satisfaction is a significant determinant of the purpose of continuance. Continuing IS research has empirically established that user satisfaction is a key determinant of IS continuing intention (Thong, Hong and Tam, 2006; Kim, 2010). The continuing intention of using the mobile banking services is supposed to be positively decided by the satisfaction of the users. The users of the mobile banking services in Malaysia perceived that when they are satisfied with the features of mobile banking services, they tend to continue using the services. Therefore, the satisfaction is significantly affecting the continuance intention of using mobile banking services in Malaysia.

MANAGERIAL IMPLICATIONS

Theoretically, this research contributes to the literature of mobile banking services user continuance intention by examining the mobile banking user's continuance intention using an integrated TTF, UTAUT and ECT models. The findings from this study partially support the conceptual model that some association between the variables do exist.

Mobile banking services has gained growing popularity among the users especially during COVID-19 pandemic as the finding of this study has shown that, 167 out of 197 respondents have increased the number of times to use mobile banking services. As the study identified that task characteristics and technology characteristics significantly and positively influence the task technology fit, this illustrates that the users of mobile banking services need to be able to access to their account to check account balances, to conduct instant transfer or real time control at anytime and anywhere. Any delay to access to the information will undermine the user experience and therefore reduce the level of task technology fit perceived by users.

Besides, this research contends that task technology fit has a strong impact to affect user satisfaction. Thus, banks are suggested to take into consideration of the fit between the mobile banking service functions and the task requirements by the users when promoting mobile banking services. For example, as due to the COVID-19 pandemic, everyone is advised to stay at home to prevent the spread of the virus, therefore, the users who stay home may perceive greater task technology fit towards the mobile banking services because they can easily conduct banking transactions with mobile banking applications. As they are encouraged to stay at home and work from home, mobile banking services can save time and avoid the need to contact with others. Consequentially, the satisfaction of users toward mobile banking will be improved and once the users feel satisfied by the fit, they will choose to continue to use the mobile banking services.

Furthermore, the study also finds out the significant effect of the task technology fit on the performance expectancy. For example, the mobile banking interface nowadays has been enhanced with the fingerprint password. Most of the banks start using fingerprint technology which will improve the performance expectancy of users. Therefore, the banks should invest in advanced technology to improve the performance of the system, for instance, by replacing the fingerprint with facial recognition technology. The facial recognition can be utilized to replace the password input which create more convenience for the users and more security when using the mobile banking service.

Apart from that, this study also discovers that the performance expectancy has a positive significant impact on the continuance intention of using the mobile banking services. When the users find mobile banking services useful in conducting financial services provided by banks, they will be pleased to continue using the service. Hence, the development of the mobile banking services needs to be improved based on users' expectations to enhance their utilization in mobile banking services. If the features of mobile banking services can meet users' performance expectations, the users will choose to continue their usage in mobile banking services rather than switching to other methods such as internet banking or traditional banking. Therefore, the improvement and development of function of mobile banking services need to be provided in an accurate and stable manner to retain the existing users.

As a conclusion, the fit of mobile banking services is able to strengthen the user's continuance intention in mobile banking services. Hence, banks need to offer timely updates to this security technology and inform users about the latest changes on how the changes will further benefit their use in mobile banking services. Timely notice of technological updates for a better user experience will encourage users to try new functions of mobile banking services rather than sticking with the fundamental inquiry function. In this way, users' continuance intention will be greatly improved.

FUTURE RESEARCH DIRECTIONS

Firstly, future researchers are suggested to conduct a longitudinal study in both qualitative and quantitative method. This enables them to capture more accurate data using improved method of interviewing the respondents to allow the researchers to gain more detailed opinions.

Secondly, the future researchers on this topic are recommended to further their study to other communities and other age groups in Malaysia. Further study can be conducted beyond the boundary of Malaysia in other countries to compare the behaviour of Malaysians with residents overseas. In this way, other countries with totally different culture might provide contrasting perceptions that could possibly contribute to a better generalizability of the results.

Finally, further investigation regarding other undiscovered determinants of mobile banking services continuance intention can also be explored in future. Other IS models such as cognitive model can be considered in addition to ECT, UTAUT and TTF models in examining the user's continuance intention.

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