KASBIT BUSINESS JOURNAL

Acceptance of internet banking in Pakistan: Integration of unified theory of acceptance and use of technology and DeLone and McLean IS model

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ARTICLE INFO

ABSTRACT

This study explored the reasons impacting the continuation usage intent towards internet banking in Pakistan. In developing countries, internet banking is comparatively a new phenomenon. Hence it is imperative to find out elements influencing the persistent usage intention of banking customers. This research integrated DeLone and McLean's information system success model with a unified theory of acceptance and usage of technology to find out the factors contributing to satisfaction of customers and continuance usage intention. SEM was utilized for the analysis. The results explained 69% of the variance in continuance usage intention to adopt internet banking in Pakistan.

JEL Classification Code: *C53, G21, G29*

Introduction

In the last few decades, the banking industry has allocated many resources to use new technologies. Hence, the acknowledgment of these innovative technologies by the customers is still a big challenge (Thaker et al., 2018). Among these new technologies is internet banking (IB) also recognized as online banking which exemplifies the funding channel that permits the customer to use an extensive variety of fiscal and non-fiscal services using a bank's site, like fund transmission, utility bills payment, printing e-statements and collection of information regarding account balance, exchange rates and interest rates (Ilmudeen & Bao, 2019; Rahi & Ghani 2018). Internet banking can also be described as "the automatic allocation of banking facilities and products through electronics channels, mainly the internet". Often referred to as E-banking, internet banking as a term comes to encompass: "The online portal, through with which customers can utilize various kinds of financial transactions services varying from bill fee to doing funds" (Pikkarainen, Pikkarainen, Karjaluoto, & Pahnila, 2004). Earlier research has emphasized the significance of the internet banking (Olivera et al., 2016; Dhingra 2018).

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According to Olivera et al., (2016) revealed the trend of mobile banking usage amongst commercial bank customers in Portugal. The researchers extended the UTAUT with the diffusion innovation model (DOI). The results identified compatibility, working expectation, and innovativeness as the significant variables contributing to user behavior in adopting mobile banking in Portugal. Manrai & Gupta (2020) analyzed the factors affecting the communication intent of Indian clients concerning the implementation of mobile expenditures. The study integrated perceived benefits and trust with UTAUT. The results identified effort expectation, performance expectation, social inspiration, and perceived remunerations as influential factors influencing the intention to adopt mobile payments. On contrary, facilitating conditions did not contribute to explaining the customer intention towards the adoption of mobile payments.

Mansour (2020) studied Islamic mobile banking acceptance in Palestine by integrating DeLone & McLean's IS model with UTAUT. The finding revealed that intention of the customer is positively effected by UTAUT factors and system, service, and information quality.

Even though internet banking is extensively explored, some researchers still consider that it is in its infancy (Olivera et al., 2016). Despite rigorous research on the early recognition of internet banking, (Alwan and Al-Zubi 2016; Szopiński 2016; Pikkarainen et al. 2004; Shih and Fang 2006) less research has been performed concerning the continued usage intention of internet banking. However, marketing researchers emphasized more on the importance of continuance usage rather than one-time or initial usage because of the cost that is associated with the development of new customers as compared to retaining the existing customer (O'Cass & Heirati, 2015; Ko et al., 2008; Bhattacherjee, 2001). Based on the difference between continuance usage and initial acceptance, Tsai et al., (2014) believe that the theory of implementation might not be suitable for assessing the continuance intention of the customer to make use of internet banking. Thus, it is imperative to examine the continuing intent of the customers with admiration to internet banking usage. The present research, thus, is aimed to fill the gap by suggesting and examining the integration of DMIS success model and unified theory of acceptance and use of technology in situation of continuance usage intent of internet banking in Pakistan. This research adds to the existing literature by developing an intuition of the factors that contribute to the continuance usage

intention of internet banking services. Moreover, the integrated model presented in this research offers a comprehensive point of view to ascertain the antecedents of the continuance intention to utilize internet banking. The findings will help banks and IT professionals in understanding the customer's response after adopting internet banking and devising strategies to improve their continuance usage towards internet banking that contributes to the sustainable expansion of the banks in the long run.

Integrating UTAUT and DMIS, we claim that only satisfied customers will have continuance usage intention towards internet banking, whereas the satisfaction is based on the customer's expectation concerning the productivity, knowledge, and resource sufficiency, the influence of community and affluence of use which is pretentious by the system and service quality provided by the banks. The following section provides the literature review and development of the research model and hypothesis followed by the methodology, data analysis, and outcomes. The last section discussed the findings and conclusion.

Theoretical Background

Internet Banking Continuance intention

Online banking or internet banking has witnessed exponential growth and has completely revolutionized traditional banking practices. IB has made busy people conduct banking transactions efficiently and cost-effectively irrespective of the physical bank at any time of the day (Makris et al., 2009). It permits the clients to participate in a wide range of banking activities like payment of bills, balance inquiry, and funds transfer using the bank's site (Tan and Teo, 2000). Internet banking can establish value for financial institutions (Witman & Roust, 2008) and can be beneficial for customers in terms of convenience (Hanafizadeh, 2014). However, the technological developments offered by banks in the form of developing internet banking infrastructure cannot guarantee acceptance and usage by potential bank customers despite the benefits offered by these services. According to Montazemi & Qahri-Saremi (2015) and Szopinski (2016), despite heavy investments made by the banks, the internet banking adoption rate is low. Therefore, researchers have started examining the aspects affecting customers' internet banking acceptance. Researchers from organization behavior, sociology, information technology, psychology, marketing, and economics have studied the contributing factors of new

technology or product acceptance with diverse achievement (Van Ittersum et al., 2006). According to Rahi et al., (2019) established an integrated research model for technology acceptance using social psychology and technological literature. The proposed model was composed of important factors of E-service quality and the UTAUT model. Moreover, research about technology acceptance at the individual level has been conducted in recent years under different approaches, representing a strong growth in these initiatives from mid of 1990 decade. These researches are conducted to search the extrinsic and intrinsic variables that impact the intentions, decisions, and satisfaction of the individual in the perspective of recognition and usage of equipment (Chen & Chan, 2011). Akgül (2018) identified the necessity for broadening the (TAM) Technology acceptance model by including contextual factors. (Ali Abdallah Alalwan, Dwivedi, & Williams, 2014) conducted research in Jordan to identify the function of trust, habit, and hedonic motivation on internet banking adoption.

Despite extensive research on internet banking adoption, less consideration has been given to the continuance usage of internet banking, though continuance comportment is considered more significant than initial usage (Tsai et al., 2014). The other research proposed that the continuance usage or adoption intention of technology may be influenced by various factors (Li et al., 2011), as the needs and wants of the customers keep on changing depending upon their experience (Erickson & Nilsson, 2007; Blake et al., 2005). Few pieces of research have been performed to find the determinants of continuance intention from the perspective of internet banking (Chen et al., 2011; Rahi & Ghani, 2019). Rahi & Ghani (2019) developed an integrated model using self-determination and expectation confirmation theory to explore the determinants of continuance intention towards internet banking. Tsai et al., (2014) discovered the role of fulfillment and system usability in the incessant procedure intention of customers towards internet banking. Montazemi & Qahri-Saremi (2015), discovered ten reasons that impact the internet banking continuance usage intention of the clients. Keeping in view, the importance of internet banking continuation use intent, more research is required to investigate the aspects affecting post-acceptance of extension intent to utilize internet banking

Unified theory of acceptance and use of technology

This theory is given by Venkatesh et al., (2003) and is related to technology adoption. UTAUT came into play through "the examination, planning, and incorporation of eight main theories and models. Venkatesh et al., (2003) examined that scholars were threatened with the choice of selecting large numbers of technology adoption models. They understood the requirement for a unified view in this regard. Therefore, they presented a new model which was the "Unified theory of acceptance and use of technology" model consisting of eight essential variables which include the performance anticipation and facilitating conditions that affect the individual's intention to adopt the technology. The working expectation is the level at which a person thinks the system would help attain gains in job performance (Venkatesh et al., 2003). "the effort expectancy is explained as the extent of ease related to the use of the system" (Venkatesh et al., 2003). Similarly, "the social influence is defined as the degree where an individual observes that best-known persons believe he/she should use the new system" (Venkatesh et al., 2003). While enabling situation is labeled as the extent to which an individual believes that managerial and technological structure occurs to assist and use the system. The enabling situation was similar to compatibility and apparent developmental management.

Since its emergence in 2003, the UTAUT model has been endorsed in numerous organizational and cultural contexts. Studies on cultural authentication include "a study on the University email system in Malaysia (Yamin & Lee, 2010); employees recognition and use of laptops in Saudi (Al-Gahtani, Hubona, & Wang, 2007); Internet banking in Korea" (Kang et al., 2011). Many research studies have used UTAUT to explore the intention and adoption of technology (C.-M. Chiu & Wang, 2008; S Rahi et al., 2018; Samar & Ghani, 2018). Ghani & Samar (2018) used the integration of DOI and UTAUT in the IB adoption context and assumed that effort and performance expectancy have a substantial influence on clients' intent concerning the adoption of IB in Pakistan. Additionally, Martins et al., (2014) suggested the considerable influence of UTAUT variables on consumers' intent to espouse internet banking in Portugal. Former researchers have established that UTAUT factors have a substantial effect on client's intent to the adoption of internet/ mobile banking (Samar & Mazuri 2019a, 2019b; Samar & Ghani 2018b; Olivera et al., 2016; Martins et al., 2014; Raza et al., 2020)

Lately, UTAUT is used in post-adoption scenarios to understand the intention of continued usage of innovative technology (Wu et al., 2014; Zhou, 2011) regard as it as implementation. Wu et al., (2014) used UTAUT with trust and satisfaction to discover the variables affecting continuance usage intention towards online social networking. Chen et al.,(2011) established a combined model using UTAUT2 and technology readiness to find the factors of intention to continue usage of particular cloud services. Considering these research studies, this research has also employed UTAUT to explore the customers' continuous use intent to internet banking in the perspective of Pakistan.

DeLone and McLean Information System success model

This model is associated with mathematical communication theory which was introduced by Shannon & Weaver (1949). The philosophy is composed of three levels of information; Effectiveness, Sematic and Technical. The first level of effectiveness represents the effect on the receiver, second level i.e. semantic level indicates the capability to transfer the proposed message, and the last technical level is associated with the efficacy and accuracy of the system which creates it. Three eras later, Mason (1978) modified the mathematical theory of communication concerning IS. Based on the modified version of Mason (1978), the level of effectiveness could additionally be expanded into three more types: impact on the receipt, system, and reception of information. The modification was related to the information system which included the elements of information and system quality (Mason 1978; Hannukainen et al., 2017).

Moreover, DeLone & McLean (1992) extended the theory by adding six additional variables related to information systems. The variables included were information quality, system quality, system use, workers' contentment, and managerial effect. Researchers after evaluating the literature on information systems identified that service quality, which was considered the most important factor, was missing in the original D&M model (Li, 1997; Pitt et al., 1994).

After considering the technological development and the criticism, DeLone & McLean (2003) revisited the literature on information systems and recognized the requirement of adding service quality to the existing DMIS model. Consequently, the updated DMIS methodology contains three core variables: "system and service quality, and information quality". The present research has used DMIS (2003) model to explore the customers 'actions from the perspective of internet banking recognition in Pakistan.

Prior research has established the significant effect of the factors incorporated in the DMIS model on customer pleasure and behavior (Samar & Mazuri, 2019a; Urbach et al., 2010). Samar & Mazuri (2019b) combined DMIS with self-determination theory and identified the significant influence of information, system, and service quality on IB customer satisfaction. In the context of mobile banking, Park & Ho Cheong (2005) discovered the significant influence of system quality on customer usage intention to adopt mobile banking. Mansour (2020) integrated DeLone & McLean's IS model and UTAUT to identify the recognition of online banking in Islamic banks of Palestine. Albashrawi & Motiwalla (2017) used IS success model to explore the variables affecting mobile banking acceptance. Following this stream of research, the present study has employed DMIS to discover the elements inducing satisfaction and continuation intent of internet banking usage in Pakistan.

Conceptual Model and Hypothesis

Subsequently reviewing the literature, this study integrated the substantial variables of DMIS and UTAUT for exploring customers' continuance usage intention towards recognition of internet banking in Pakistan. Theory integration is appropriate and is in line with the preceding research (Samar & Mazuri, 2019b; Jackson et al., 2013). Similarly, Jackson et al. (2013) emphasized the importance of an integrated model to deliver a more comprehensive account of the contributory mechanisms inherent in the associations that cannot be attained with a single model. Therefore, this research integrated DMIS & UTAUT concerning internet banking acceptance in the Pakistani Context. The suggested study model can be seen in Figure 1.
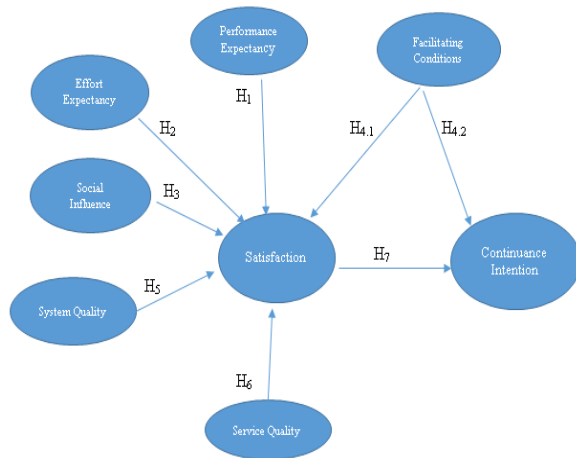
Figure 1: Proposed Research Model

Performance Expectancy (PE)

It refers to the benefits that are obtained by expanding internet banking facilities like time, and money saving, convenience concerning payment, and facility efficiency (Venkatesh et al., 2012b). Likewise, the Performance Expectancy is employed to evaluate the extent to which an individual considers the advantages of using internet banking in the execution of banking activities (Venkatesh et al., 2003). Since it is obtained from the recognized use of the technology acceptance model (TAM) (Venkatesh et al., 2003), it is assumed as a key factor for customer fulfillment (Chan et al., 2010). Various research findings have proposed a positive impact of performance expectancy on attitude and contentment, for instance, the perspective of banking (Albashrawi & Motiwalla, 2017) and banking information systems (Brown et al., 2008). Hence, it is suggested that:

H1   PE has a positive impact on customer satisfaction for using internet banking.

Effort Expectancy

EE refers to "the level of comfort associated with clients' usage of technology". It is "the degree of ease related to the use of internet banking". The banking clients are expected to adopt IB if they believe that it requires less effort to use and it is easier to use. Subsequently, the intent to utilize online technology is influenced by the efforts the customer needs to put in while searching the website

for making the online transaction. Shen & Chiou, (2010) suggested that customer satisfaction is affected if the customers find the website complex and difficult to navigate. According to Dagger & O'Brien, (2010) ease of use affects the satisfaction of the customer concerning internet banking.

Still, the impact of customer experience on the effort required to utilize internet banking and their contentment requires further investigation. Hence, we propose that:

H2   EE has a positive impact on customer satisfaction for using internet banking.

Social Influence

It means that "a person's opinion that the majority individuals who are imported to him think he should or should not perform the behavior in question" (Ajzen, 1991). Environmental factors like a relative's or friend's opinions influencing the user behavior are termed social influence. As per Miltgen et al., (2013) it referred to the extent of an individual's feeling that his / her social circle must use mobile banking technology. People might show satisfaction and commitment to using IB when it is being recommended and appreciated by their colleagues, family members, and friends. It is suggested by Chan et al., (2010) that the influence of social circles can positively affect the attitude of an individual. As satisfaction principally is a positive mindset that is developed over some time employing internet banking services (Kim et al., 2009).

H3   SI has a positive influence on internet banking customer satisfaction.

Facilitating Conditions

These elements are explained as "the level to which people consider that an organizational and technical structure occurs to encourage the usage of the system" (Venkatesh et al., 2003). It can also be referred to as the technical and organizational support available to the customers for the facilitation of the customers during the use of technology. FC for technological innovations, includes peer support, help desk support, resource sufficiency, and knowledge that delivers a strong foundation for positive feelings

and system usage. Venkatesh et al. (2012) stated assisting situations is the perception of the customer concerning the funds and support available to perform a specific behavior. According to Martins et al (2014), certain skills like operating and configuring computers, and connecting to the internet are required to use and implement internet banking. Zhou et al, (2010) also supported the requirement of a particular skill, infrastructure, and resources to utilize internet banking. Supporting infrastructure and multiple avenues of promoting internet banking can help in removing the barriers faced by customers in using internet banking (Martins et al, 2014). Usage and acceptance of internet banking need the customers to know using computers, the internet, and technology. Facilitating conditions in the context of this research are gauged by the customer's perception of the accessibility of the resources and the support required by the bank to use internet banking services. Consequently, it is anticipated that if sufficient and prompt facilitating conditions are available, then consumers are more expected to make use of internet banking services. Prior research studies have confirmed the existence of a relationship between FC on satisfaction and actual usage concerning mobile banking (Baptista & Oliveira, 2015) and e-government services (Chan et al., 2010). Hence, we propose that:

H4.1   Facilitating conditions have a positive impact on customer satisfaction for using internet banking.

H4.2   Facilitating conditions have a positive impact on customers' intention to use/adopt internet banking.

System Quality

This element is referred to the degree the which internet banking technology is effortless to navigate and use (Zhou, 2013). Logically a customer would be more satisfied if he/ she finds the internet banking website user-friendly. Empirical studies have also validated the said relationship in the context of different information technology applications like e-services, e-government systems (Teo et al., 2008), and mobile payments (Zhou et al., 2013). Thus it is proposed that:

H5 System quality has a positive impact on internet banking customer satisfaction

Service Quality

Service quality (SRQ) is defined as the degree to which internet banking proposals appropriate, reliable, and personalized services (Zhou, 2013). Even though in traditional banking channels, service quality is considered a significant factor; it can play a vital role in online technologies like internet banking. The empirical literature has confirmed the considerable influence of service quality on satisfaction (Mansour, 2020; Xu et al., 2013; Cenfetelli, 2008). This association is also endorsed in the mobile technology context (Zhou, 2013). Thus, it is proposed that:

H6   SRQ has a positive influence on customer satisfaction.

Customer Satisfaction and Continuance Intention

The study on continuance intention concerning satisfaction suggested that it is more likely for a satisfied customer to continue using the services (Zhao & Lu, 2012). Several research studies have found a positive relationship between customer satisfaction and continuance intention (Lien et al., 2017; Zhou, 2013; Tsai et al., 2014). For example, Lu et al, (2019), found a positive significant effect of satisfaction on customers' continuance usage intention from the perspective of Massive Open Online Courses. Tsai et al., (2014) explored internet banking in Taiwan and identified a positive effect of customer satisfaction on the maintenance use intent of internet banking services. Hence, it is proposed that:

H7   Satisfaction has a positive effect on continuance usage intention towards internet banking.

Research Design

The aim is to analyze the factors that influence the continued usage intention of the customers towards IB, therefore the sample comprises IB users in Pakistan. Convenience sampling was used for data collection which is consistent with prior research (Rahi et al., 2017a; Hulland et al., 2017; Rahi, 2015, 2016b; Samar & Mazuri, 2016). "Convenience sampling permits investigator to carry out interviews or get responses in a cost-efficient manner" (Rahi et al., 2018b). In another research, Rahi & Ghani (2018) proposed that convenience sampling may be used in exploratory research studies in the arena of

marketing. The sample required for the present research is based on the statistical technique that is utilized to evaluate the data which is SEM. This statistical analysis requires a suitable size of the sample to find reliable estimates (Hair et al., 2006). The sample size was selected using the guidelines provided by Lee & Comrey (1992) who suggested 50, 100, 200, 300, 500, and 1000 as very poor, poor, reasonable, good, very good, and brilliant respectively for SEM. The questionnaire was circulated, through a hyperlink, to the respondents of diverse demographic backgrounds (all, however, resided within Pakistan to enable the researcher to fully analyze the local landscape and explore the Pakistani context fully). This method of circulating the questionnaire online is an easy and cost-effective method to get responses from a large group of respondents in a limited time frame. Additionally, some questionnaires were distributed physically. Altogether, 500 questionnaires were distributed electronically, and physically 421 questionnaires were received representing an 84.2% response rate. 35 forms were rejected because of incomplete responses (Rahi and Ghani, 2016). Overall 386 responses were utilized for the data analysis.

Research Instrument

A survey was created to test the research framework. The initial section of the instrument was based on the constructs which were adopted from prior research studies. Scale for PE, EE, SI, and FC was adopted from Venkatesh et al. (2012). The constructs including SQ, SRQ, customer satisfaction, and continuance intent were altered by Samar & Ghani (2019). The second section gathered the information concerning demographics of the respondents including age, gender, qualification, and experience. Seven points Likert scale was used to measure all items from strongly disagree to strongly agree. Generally, the research is built on a positivist paradigm and has applied a quantitative approach.

Data analysis

SEM was utilized to analyze the association among the suggested hypothesis. SEM is the statistical procedure used for analyzing and assessing causal relations (Rahi and Ghani, 2018b). SEM is of two kinds: Variance and Co-variance based SEM. There are advantages and disadvantages associated with both techniques (Rahi & Ghani 2018a). This research has used Partial Least Square (PLS) technique which is variance-based structural equation modeling (Rahi et al., 2018a). According to Samar et

el., (2017) using the PLS approach in a complex research model is appropriate. Data analysis is done using Smart PLS 3.3.5 software.

Measurement model

Two-stage methodology in SEM analysis includes a measurement model and a structural model which is used to analyze the data (Byrnes, 2001). In the first stage, the fitness of the model and construct validity and reliability were measured using Smart PLS which was done by the measurement model (Byrne, 2010). For reliability analysis of the indicators, outer loading is used which should be greater than 0.7 (Chin, 2010). Table 1 represents the factor loadings of all the items for each construct. Cronbach's alpha and Composite reliability (CR) were employed to measure the reliability of the constructs which must be higher than 0.7 (Henseler et al., 2009). For convergent validity assessment, AVE was used which must be more than 0.5 (Rahi et al., 2018; Fornell & Larcker, 1981). The CR of each construct is well above the threshold of 0.7. Results of AVE, CR, and Cronbach's alpha, (See Table 1) validated the convergent validity of the constructs. After the confirmation of convergent validity, it is necessary to evaluate the discriminant validity of the constructs. The present research used Fornell & Larcker (1981) criterion to measure the discriminant validity of the constructs. Discriminant validity can be described as "the degree to which perceived constructs items measure distinct concepts" (Samar et al., 2017a). "The square of AVE should be better than all associations between each pair of constructs for the satisfactory discriminant validity of the constructs" (Fornell and Larcker, 1981). Table 2 presents the results of correlations and the square root of AVE. AVE values (in Bold) are found greater than the corresponding columns and rows indicating that the measure is discriminant. The discriminant validity of the structures can also be determined by the Hetrotrait Monotrait ratio (HTMT) which is considered an improved criterion (Henseler et al., 2015). To determine discriminant validity, the threshold value must be less than 0.90 (Teo et al., 2009). The results of HTMT presented in Table 3 indicated that all values are below the threshold value of 0.9, indicating the measure is discriminant. After the acceptable outcomes of reliability and validity of the structural mode, the second stage, where the structural model assessment of the proposed model was done by assessing the proposed hypotheses (Hair et al, 2006; Byrne, 2010). An assessment of the model was also performed with causal paths amid variables.

Table1   Measurement Model

	Constructs / Items	Loadings	Cronbach's Alpha	CR	AVE
	Continuance intention (CI)				
CI1	I intend to continue using internet banking in the future	0.931	0.94	0.957	0.848
CI2	I will always try to use internet banking in my daily life	0.906			
CI3	I plan to continue using internet banking frequently	0.925			
CI4	I will strongly recommend the others to use internet banking.	0.922			
	Effort Expectancy (EE)				
EE1	Learning how to use Internet banking is easy for me.	0.868	0.918	0.942	0.803
EE2	My interaction with Internet banking is clear and understandable.	0.910			
EE3	I find Internet banking easy to use.	0.910			
EE4	It is easy for me to become skilful at using Internet banking.	0.895			
	Facilitating Conditions (FC)				
FC1	I have the resources necessary to use Internet banking.	0.924	0.882	0.927	0.809
FC2	I have the knowledge necessary to use Internet banking.	0.868			
FC3	Internet banking is compatible with other technologies I use.	0.906			
	Performance Expectancy (PE)				
PE1	I find Internet banking useful in my daily life.	0.884	0.917	0.941	0.801
PE2	Using Internet banking increases my chances of achieving tasks that are important to me.	0.935			
PE3	Using Internet banking helps me accomplish tasks more quickly.	0.906			
PE4	Using Internet banking increases my productivity.	0.853			
	Satisfaction (SAT)				
SAT1	I feel satisfied with using internet banking website	0.926	0.904	0.94	0.839
SAT2	I feel contented with using internet banking service	0.927			
SAT3	Overall, I am satisfied with internet banking service	0.896			
	Social Influence (SI)				
SI1	People who are important to me think that I should use Internet banking.	0.931	0.913	0.945	0.852
SI2	People who influence my behaviour think that I should use Internet banking.	0.936			
SI3	People whose opinions that I value prefer that I use Internet banking.	0.902			
	System quality (SYSQ)				
SQ1	Internet banking is easy to navigate	0.888	0.92	0.943	0.806
SQ2	Internet banking allows me to easily find the information I am looking for	0.900			
SQ3	Internet banking is well structured	0.892			
SQ4	Internet banking offers appropriate functionality	0.910			
	Service quality (SERQ)				
SRQ1	The responsible service personnel are always highly willing to help whenever I need support with the internet banking	0.921	0.943	0.959	0.854
SRQ2	The responsible service personnel provide personal attention when I experience problems with the internet banking	0.929			
SRQ3	The responsible service personnel provide services related to the internet banking at the promised time	0.93			
SRQ4	The responsible service personnel have sufficient knowledge to answer my questions with respect to the internet banking	0.916			

Table 2: Discriminant Validity Fornel & Larcker

	CI	EE	FC	PE	SAT	SI	SQ	SRQ
CI	**0.921**							
EE	0.756	**0.896**						
FC	0.75	0.807	**0.9**					
PE	0.754	0.755	0.73	**0.895**				
SAT	0.75	0.672	0.661	0.59	**0.916**			
SI	0.525	0.527	0.635	0.532	0.429	**0.923**		
SQ	0.651	0.64	0.691	0.52	0.755	0.52	**0.898**	
SRQ	0.464	0.486	0.499	0.394	0.632	0.488	0.649	**0.924**

Note: Bold values indicate the square root of the AVE of each construct.

Table 3 HTMT

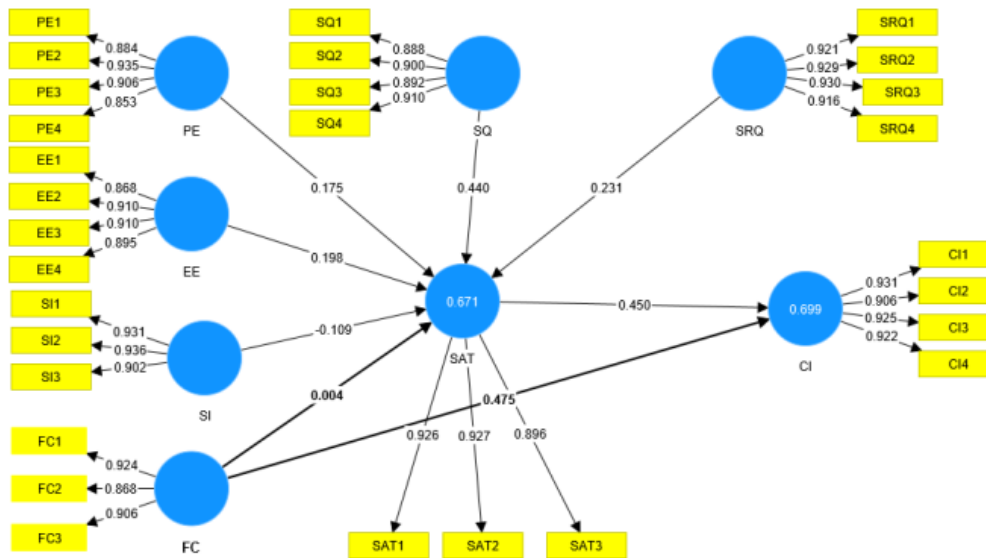|	CI	EE	FC	PE	SAT	SI	SQ	SRQ
CI								
EE	0.809							
FC	0.832	0.89						
PE	0.811	0.819	0.811					
SAT	0.809	0.734	0.753	0.647				
SI	0.582	0.59	0.751	0.594	0.454			
SQ	0.695	0.69	0.781	0.564	0.827	0.549		
SRQ	0.491	0.516	0.558	0.422	0.682	0.542	0.695	

Figure 2: Measurement Model

Structural model assessment

After the measurement model, the structural model is evaluated. This assessment included the predictive competency of the model as well as the identification of the relationship among the constructs. Q2 and R2 were computed for this purpose. The R2 for continuance intention was 69.9% while for the satisfaction it was 67.1%. The model explained 69.9% of the variation in continuance intent to use internet banking in Pakistan. It indicated that the model has significant explanatory power. Moreover, the blindfolding technique was applied for the assessment of the predictive relevance of the model. It is suggested by Hair et al., (2014), that this blindfolding technique must be used for dependent variables only that have a reflective measurement. The threshold of Q2 greater than 0 showed the predictive relevance of the model. Table 4 shows the Q2 value of 0.577 and 0.55 for continuance intention and satisfaction respectively. The results indicated that both satisfaction and continuance intention has adequate predictive relevance to the model.

Table 4

	R^2	Q^2
CI	0.699	0.577
SAT	0.671	0.55

Though, Q2 is criticized for not gauging the case-wise predictability and prediction at the aggregate level (Evermann & Tate, 2016). Thus, PLSpredict suggested by Shmueli et al.(2016) is used for predictive relevance. This method permits the evaluation of out-of-sample predictive power (Shmueli et al., 2016). PLSpredict results are shown in Table 5. when comparing the RMSE value from PLS-SEM with LM values, it can be seen that all the values of PLS-SEM are less than LM values; indicating high predictive power of the research model (Shmueli et al., 2019). In other words, the difference between RMSE values of the PLS-SEM and LM model were negative for all the items of continuance intention and satisfaction which is an indication of the high predictive power of the model. Based on these results, it is established that the research model showed high predictive power.

Table 5 Results of PLSpredict

	Q²predict	PLS-SEM_RMSE	LM_RMSE	SEM - LM
CI1	0.627	0.673	0.695	-0.022
CI2	0.453	0.907	0.951	-0.044
CI3	0.54	0.815	0.851	-0.036
CI4	0.519	0.852	0.869	-0.017
SAT1	0.534	0.842	0.932	-0.09
SAT2	0.567	0.737	0.798	-0.061
SAT3	0.494	0.782	0.828	-0.046

Moreover, the impact size of the exogenous variables was also assessed using f2. It is utilized to measure the exclusive effect of each predictor on the endogenic variable. The threshold f2 values of 0.02, 0.15, and 0.35 are classified as small, medium, and large respectively. Hence, the effect size of Facilitating conditions and satisfaction towards continuance intention is identified to be large while the medium effect size of system quality is identified towards satisfaction. The rest of the predictors have a small impact on customer fulfillment to use internet banking in Pakistan. Table 5 presents the results of the hypothesis testing and the effect size of the constructs.

To test the hypothesized relationships, PLS-SEM was run. Bootstrapping method with a sample of 5000 is used to analyze the relationship among the suggested hypothesis (Hair et al., 2016; Alnaser et al., 2018). Table 5 presents the outcomes of hypothesis testing.

Table 6: Results of Hypothesis Testing

Hypothesis	Relationship	β	t- values	P Values	Decision	f^2
H1	PE -> SAT	0.175	2.099	0.036	Supported	0.035
H2	EE -> SAT	0.198	1.926	0.054	Not Supported	0.03
H3	SI -> SAT	0.109	2.135	0.033	Supported	0.022
H4.1	FC -> SAT	0.004	0.043	0.966	Not Supported	0.000
H4.2	FC -> CI	0.475	7.602	0.000	Supported	0.451
H5	SQ -> SAT	0.440	4.134	0.000	Supported	0.24
H6	SRQ -> SAT	0.231	3.547	0.000	Supported	0.088
H7	SAT -> CI	0.45	6.462	0.000	Supported	0.405

*Note: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (one-tailed).*

Results of the structural model suggested that H1 is supported with β = 0.175 and p < 0.05, representing a positive and substantial relationship between performance expectancy and customer satisfaction. The H2 represents the relationship between effort expectancy and satisfaction and is not supported indicating that effort expectancy and satisfaction do not have a direct relationship. (β = 0.198 and t = 1.926). H3 indicates the link between social influence and satisfaction which is found to be significant as β = 0.109, t= 2.135, and p < 0.05. The relationship between enabling conditions and pleasure given in H4.1 is found to be insignificant and the hypothesis is not supported (β = 0.004 and t = 0.043). The relationship between facilitating conditions and continuance intention presented in H4.2 is found to be significant and the hypothesis is supported (β = 0.475, t = 7.606, and p < 0.001). H5 presents the relationship between service quality and satisfaction and is supported with β = 0.440, t= 4.134, and p < 0.001. H6 is also supported which indicates the relationship between service quality and fulfillment with β = 0.231, t= 3.547, and p < 0.001. H7 indicates the relationship between satisfaction and continuance intention and is supported by β = 0.45, t= 6.462, and p < 0.001. Therefore, the results supported all the hypothesized relationships except H2 and H4.1. The result has significant implications for the banks offering internet banking which are discussed in the last section of the research.

Model Fit

To examine the model fitness, standard root mean square (SRMR) is utilized in PLS models (Henseler et al., 2015). Being an absolute measure of fitness, Zero SRMR represents a perfect fit. It is proposed by Hu & Bentler (1998) that a value less than 0.08 suggests a good fit. Table 6 shows the model fit results for the research model Since the SRMR value (0.058) is less than 0.08, thus, the model indicates a good fit.

Table 6 Model fit

Criterion	Value
SRMR	0.058

Discussions

The research examined the factors influencing the fulfillment and continuation usage intention of internet banking in Pakistan. The research incorporated a unified theory of acceptance and use of technology and an information system success model to study the continuance usage intention of internet banking customers. Moreover, the link between satisfaction and continuance intention was also assessed.

The research hypothesized that contentment is positively linked to continuation intent and performance expectancy, effort expectancy, social impact, enabling situations, system quality, and service quality are the antecedents of customer satisfaction. The results indicated a significant positive relationship between customer fulfillment and maintenance intent. It means that a satisfied customer will remain to make use of the inter-banking services provided by the bank. The findings are supported by Tsai et al., (2014) and Pereira et al., (2015). Moreover, results discovered that performance expectancy has a significant positive impact on customer satisfaction. It means that customers are satisfied by using internet banking services that help them in attaining the benefits concerning banking operations. The results are supported by previous research (Brown et al., 2008; Thong et al., 2006). SI is also observed to have a substantial impact on customer satisfaction. It is the extent to which a customer feels that internet banking should be used by his/her social circle. It is more likely that a satisfied customer will influence his/her social circle towards the continuance use of internet banking facilities. The results are supported by Chan et al., (2010). Similarly system quality and service quality also show a positive significant effect on customer satisfaction; confirming the results of the previous studies (Zhou, 2013; Mansour, 2020). Facilitating conditions are found to have a major and positive effect on continuation intention but were insignificant concerning customer satisfaction. It means that the infrastructure and support provided by the banks to facilitate the customer while using the internet banking facilities leads to customer satisfaction and continuance intention to use these services. The results are supported by Bapsita & Olivera, (2015) and Albashrawi & Motiwalla (2017). Overall the results suggested that if customer satisfaction depends on the information technology's (Internet banking) usefulness, facilitation in terms of support and infrastructure, good system, and service quality, that further leads to customers' continuance intent to practice internet banking services in Pakistan.

Theoretical & Practical Implications

This study integrated UTAUT and DeLone & McLean IS model to identify the issues impacting the endurance usage intention of internet banking in Pakistan. The study finds out that customer

satisfaction impacts the continuance procedure intention of customers towards banking in Pakistan.

The study contributed to the theory and practice by introducing a new integrated model for the measurement of customer gratification and endurance intention in the internet banking context and to identify if this integrated model can facilitate in providing a robust theoretical foundation in the internet banking context. This study is built on the IT success model which includes system-oriented factors and a unified theory of acceptance and use of technology which is derived from previous adoption models. The results indicated the substantial predictive power of this integrated model which can guide future researchers in revealing a deeper understanding of internet banking continuance usage. This research also contributed to the literature on UTAUT by expanding UTAUT from pre-adoption to post-adoption context on continuation intent to use internet banking in Pakistan. Also, the UTAUT model along with the information system success model is not frequently used in the situation of internet banking continuance use intent.

Since continuance intention is determined by customers' experiences and system-based factors, the study identified four critical factors performance expectation, facilitating conditions, and service quality that leads to customer satisfaction which in turn takes it to continuation intention to utilize internet banking. These significant factors which are identified can help banks and software developers to address issues related to internet banking acceptance and improve them accordingly to increase or sustain the level of customer satisfaction in the banking customers. As it is more likely that a satisfied customer will continue to use internet banking which can help banks in promoting long-term value for them, the results proposed that managers devise strategies keeping the focus on performance expectancy, system quality, and service quality to sustain or improve the internet banking customer satisfaction. In addition to the existing internet banking services, the banks must offer additional value-added services like personalized service, online customer service, and loan facilitation services through internet banking. Moreover, bank managers can make efforts to create attractiveness by providing convenience and better services with minimum cost to make internet banking more attractive as compared to traditional banking.

Conclusion

This research concluded that satisfaction plays a vital part in enhancing the customer's continued intent to utilize internet banking in Pakistan. Separately from that, the research has also identified the substantial effect of performance expectancy, Social influence, facilitating conditions, system quality, and maintenance quality on internet banking customer fulfillment. In other words, a banking customer would be more satisfied if internet banking service is easy to use, provides facilitation in terms of system support, and provides efficient service quality; and a satisfied customer more likely would continue to use internet banking which leads to increase internet banking adoption in Pakistan. Moreover, the future studies to scrutinize how the newly assimilated (UTAUT+E-SQ) model affects the association of the constructs put across in this study in other cultural settings. Therefore, applying this model to the other emerging economies.

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