Indian Management Studies Journal 22 (2018) 91-114

Indian
Management
Studies Journal

IT-based Banking : A Review of Studies on Acceptance, Service Quality and Sustainability Issues

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Abstract

The advances in the field of information technology have transformed the approach of business in past few decades. The banking industry is one of the leading adopters of technology-based innovations. Now-a-days, banks have implemented these technologies in all of their operations, i.e. ranging from their products, processes and to the channels of service delivery. These tools have uncovered numerous paybacks for the customers as well as for the banks themselves. The researches in the field of IT-based banking services have contributed immensely towards the better understanding of the different perspectives of integration of IT into banking. The present manuscript is a distinct endeavour to present a systematic review of the prior research on the diverse aspects of IT-based banking, i.e. the acceptance, service quality and sustainability issues associated with the use of IT in banking. By bringing together the findings of the relevant studies on varied aspects of the subject domain, this study does not only seek to contribute towards the existing branch of scientific knowledge but also puts forth its implications for the bankers/managers. The present paper also highlights a future agenda of research for the prospective researchers in the concerned thrust area.

Key Words

Information Technology, Banking, Acceptance, Service Quality, Sustainability.

INTRODUCTION

The adoption of information technology (IT) has increased potential of services in the modern banking system. In addition to the innovative business

processes, IT has changed the way of service delivery to the customers in the personal finance industry (Wang *et al.*, 2003). With the passage of time, several technological innovations have taken place in the financial services sector. These technology-based services were first introduced to support and complement the traditional branch banking (Chandio *et al.*, 2013), i.e. brick and mortar banking, but, nowadays, these developments and innovations have just reformed the traditional banking into modern or electronic banking by complete transformation of banking service delivery to satisfy the needs of highly demanding customers. These days, massive efforts are being attempted to obtain a number of innovative delivery channels to attract new customers in addition to retain the existing ones by improving their level of satisfaction and loyalty (George & Kumar, 2014). The internet and mobile are interesting tools which provide customers with the feature of anytime and anywhere banking to indulge in banking transactions with a very low cost along with an efficient mechanism of handling and controlling (Narayanasamy *et al.*, 2011). It does not only provide these benefits to the customers but the banks are also benefited in the form of reduced fixed and operating costs (Zhao *et al.*, 2010; Chen *et al.*, 2012). These modern techniques are highly significant in maintaining the improved customer relationships through effective service delivery (Rod & Ashill, 2010).

The importance of technology-based banking has received the increased attention of the researchers and practitioners. A great contribution has been made by the investigators in the discipline of IT-based banking in the literature. By providing the customers with multiple delivery channels and innovative products through effective market segmentation and targeting, the banks can increase their market share and, likewise, can enhance their benefits of mass customization in the form of the increased customer base (Jayawardhena & Foley, 2000; Martins *et al.*, 2014). Customers should be provided with a variety of services and diverse features to increase the level of customers' satisfaction and loyalty (Barcia, 2000; Jun &Cai, 2001; Cho & Park, 2001; Page & Lepkowska-White, 2002; Yang *et al.*, 2004; Malarvizhi, 2011) and this notion also applies to the financial services industry, i.e. banking industry.

In recent years, the organizations throughout the world economies have been facing several challenges in performing their business activities. One of the most important and challenging issues, these days, is that of integrating sustainability responsibility into the firm's present and future strategies and policies. Due to the heavy production of greenhouse gases every year, all sectors of the society are greatly concerned about the societal and environmental protection of the planet earth. The banking industry also needs

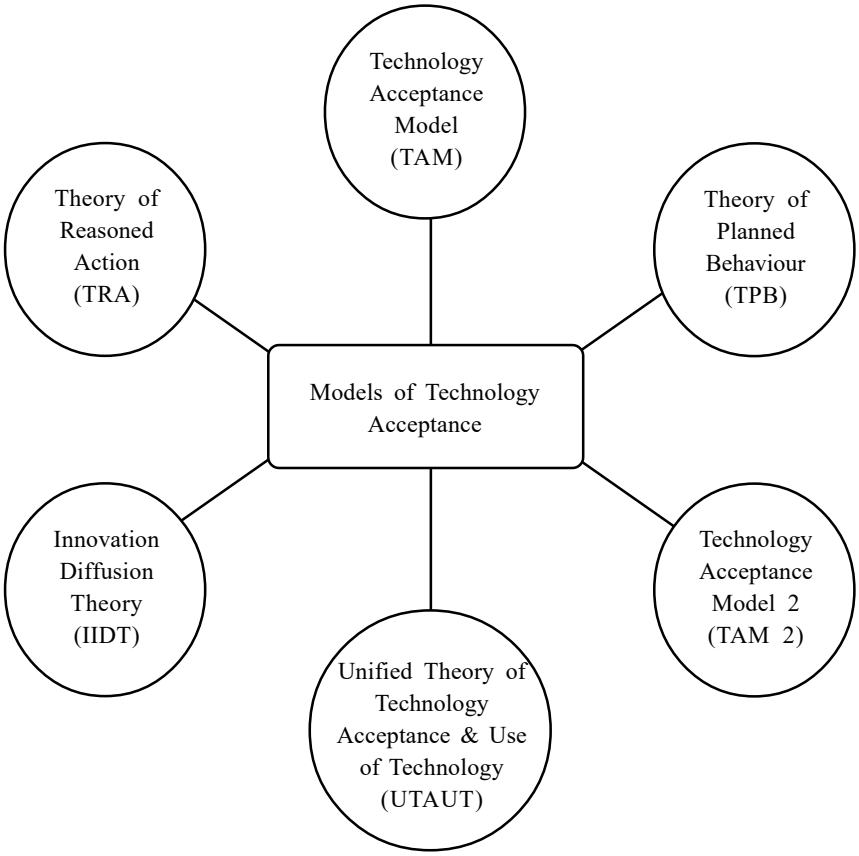
to incorporate the environmental responsibility into the long-term business policies. IT can have positive as well as negative effects on the society and environment (Elliot, 2011). Thus, by reducing the negative effects and capitalizing on the positive effects of IT (Watson *et al.*, 2008; Elliot, 2011), a firm can become environment-friendly and also enhance the firm's environmental performance (Gholami *et al.*, 2013). Many organizations in some countries such as China have started to integrate green IT (Faucheux& Nicolai, 2011), green IS (Jenkin *et al.*, 2011) and IT for green (Corbett, 2010; Butler, 2011) into their firm's sustainability initiatives due to increased pressure to promote environmental protection (Miao *et al.*, 2012). Molla & Abareshi (2012) have suggested the first order effects in terms of green IT and second order effects of IT for green into the business operations. Most of the organizations have started to include the triple bottom line (TBL) perspective (Dao *et al.*, 2011) in the sustainability decisions of the firm.

The present manuscript has been structured systematically as follows: Section-1 provides the review of studies concerning the examination and analysis of adoption & acceptance of IT-based banking services and systems. Section-2 deals with the literature survey of service quality of IT-based banking services; followed by a review of the studies comprising the aspect of sustainability of IT in the Section-3. Subsequent to the outline of the systematic review, we have oriented our efforts upon the implications of the present research work and future directions for workers in the concerned thrust area.

THEORETICAL BACKGROUND

Since the inception of IT, scholars from academics and industry have been continuously showing considerable interest in the technology acceptance behaviour of various users in different contexts. The implementation of IT has been undertaken by the banks throughout the world economies. The applicability of these services and systems in banking can only serve their actual purpose if these techniques are whole-heartedly adopted and accepted by all of its users (Nath *et al.*, 2014). The researches have investigated several theoretical models which explain the acceptance of these technologies. The important models in this field are TRA, TPB, IDT (Rogers, 1995), TAM, TAM 2 (Venkatesh & Davis, 2000), and UTAUT (Venkatesh *et al.*, 2003) (See Figure-1). Technology Acceptance Model (Davis *et al.*, 1989) is the extension of two previous models, TRA, i.e. Theory of Reasoned Action (Ajzen & Fishbein, 1975, 1980) and TPB, i.e. Theory of Planned Behaviour (Ajzen, 1985).

Figure 1 : Models of Technology Acceptance



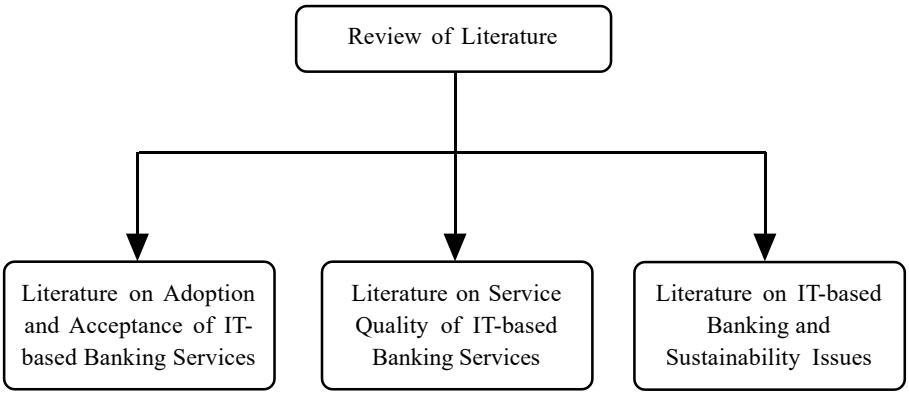
It is evident from the practical point of view that there is an urgent need to investigate the applications of IT-based banking in the multi-dimensional way. For the service industries in today's competitive business environment, service quality is a crucial issue to be considered (Marshall, 2006). A concept of e-service quality (Carlson & O'Cass, 2011; Zavareh *et al.*, 2012; Amin, 2016) has been framed by the scholars to investigate the quality of electronic banking services (Santouridis *et al.*, 2009) which has been further utilised and extended by new researchers in the field. The issue of sustainability in IT-based systems has also attracted our special attention in the present review of literature for the last about 15 years. The general public and society expect all the businesses to be socially, ethically and environmentally responsible, and should help in safeguarding our ecological system (Bose & Luo, 2011). In this way, the banks are making their efforts in ensuring lower energy consumption, reduced carbon emissions and

carbon footprints as well (Bansal, 2005) for the overall welfare of the present day societal system.

SELECTING THE STUDIES FOR REVIEW

The present study is an endeavour to present a systematic review of the researches reported in the literature from 2000 to 2017 concerning the multifaceted aspects of IT-based banking, i.e., its acceptance, service quality and sustainability issues. By drawing together the findings of prior studies in the field, and, thus, presenting a structured framework, the paper is an attempt to cover varied aspects of the abovesaid thrust areas in its ambit. The research papers required for our present work have been collected from different peer-reviewed journals available on various interdisciplinary databases, i.e. Sage, Science Direct, Emerald Insight, Jstor, Wiley, ProQuest, Taylor & Francis, Elsevier, and Researchgate. The key journals were identified considering the frequency of research papers published related to IT-based banking. The method adopted for the collection of research papers is based on keywords searches and the keywords applied thereon are information technology, banking, technology acceptance, service quality, sustainable banking, and sustainability. Figure 2 depicts the relevant review model on the basis of classification of the literature reviewed.

Figure 2 : Review Model



ADOPTION AND ACCEPTANCE OF IT-BASED BANKING

Numerous studies have been reported in the literature on varied areas of technology adoption. Whereas some of them emphasize upon the application of newly introduced technology-based banking services, while other studies are

based upon the scientific analysis of the factors influencing the adoption of those technology-based services which have already been deployed (Yusuf Dauda & Lee, 2015). Several studies have been undertaken by the previous researchers to investigate the factors that influence the adoption of IT-based banking services. There are several models such as Theory of Reasoned Action, Theory of Planned Behaviour, Innovation Diffusion Theory, Technology Acceptance Model, Unified Theory of Acceptance and Use of Technology to study the adoption and acceptance of a new technology or system. TAM developed by Davis *et al.* (1989) has been the most widely used model for explaining technology acceptance which has been applied by researchers on several types of new technologies such as microcomputers (Anandarajan *et al.*, 2000); e-commerce (Devaraj *et al.*, 2002; Pavlou, 2003), and internet banking (Liao & Cheung, 2008; Alsajjan & Dennis, 2010; Chandio *et al.*, 2013) and mobile banking (Crabbe *et al.*, 2009; Shen *et al.*, 2010) particularly in the IT-based banking context. Thus, TAM has been found to be an appropriate model that may be efficiently applied to the most of modern technologies. The most basic variables of TAM are perceived ease of use (Wang *et al.*, 2003; Liébana-Cabanillas *et al.*, 2013; Chandio *et al.*, 2017) and perceived usefulness (Pikkarainen *et al.*, 2004; Chandio *et al.*, 2013; Liébana-Cabanillas *et al.*, 2013; Chandio *et al.*, 2017). Other than the basic variables of the aforementioned models, various important factors have also been identified in the past studies. The security concerns, social network structure (Hasim& Salman, 2010), customers' readiness (Al-alak, 2014; Giordani *et al.*, 2014) and potential readiness to adopt (Rezaei *et al.*, 2014; Al-Ajam & Md Nor, 2015), personal traits and habits of the users (McNeish, 2015), customers' prior experience with computers (Venkatesh & Morris, 2000), understanding of the benefits of using IT-based banking services (Harrison *et al.*, 2014; Thakur, 2014), self-efficacy (Chandio *et al.*, 2013), self-control (Bobbitt & Dabholkar, 2001), accessibility (Liébana-Cabanillas *et al.*, 2013), trust (Kesharwani & Bisht, 2012; Chandio *et al.*, 2013) and trusting intention (Dimitriadis &Kyrezis, 2011) are found to be the significant factors influencing adoption of IT-based banking services by the users. Researchers have also tried to investigate the hindering factors in the adoption of different IT-based banking services. It has been opined that habits of the users (Chemingui & Ben lallouna,2013; Hanafizadeh *et al.*, 2014), their behaviour (Alsajjan & Dennis, 2010; Chen & Teng, 2013) in using a specific technology, level of dissatisfaction and poor service quality (Zhao *et al.*, 2010) are some of the barriers in customers' adoption of these technologies. Martins *et al.* (2014) have found that the users who adopt internet banking are less likely to leave the bank, and more likely to indulge in increased banking transactions, to get more products and services and maintain higher balance with the bank as well.

Table 1
Important Models of Technology Acceptance Used in Literature

	Theory of Reasoned Action (TRA)	Theory of Planned Behaviour (TPB)	Innovation Diffusion Theory (IDT)	Technology Acceptance Model (TAM)	Technology Acceptance Model 2 (TAM 2)	Unified Theory of Acceptance & Use of Technology (UTAUT)
Anandarajan *et al.*, 2000				✓		
Bhattacherjee, 2000			✓			
Venkatesh and Davis, 2000					✓	
Armitage and Conner, 2001		✓				
Legris *et al.*, 2003				✓		
Oh *et al.*, 2003		✓	✓	✓		
Stoel and Lee, 2003				✓		
Wang *et al.*, 2003				✓		
Venkatesh *et al.*, 2003						✓
Pikkarainen *et al.*, 2004				✓		
Lai and Li, 2005				✓		
Anderson *et al.*, 2006						✓
King & He, 2006				✓		
Abushanab and Pearson, 2007						✓

Contd.

Contd. Table 1

Herna'ndez *et al.*, 2008				✓		
Venkatesh and Bala, 2008						✓
Al-Somali *et al.*, 2009				✓		
Selamat *et al.*, 2009				✓		
Alsajjan and Dennis, 2010						✓
Shumaila *et al.*, 2010	✓	✓		✓		
Yuen *et al.*, 2010					✓	
Dimitriadis and Kyrezis, 2011	✓			✓		
Chandio *et al.,* 2013				✓		
Liebana-Cabanillas *et al.*, 2013				✓		
Lee *et al.*, 2013				✓		
Montazemi and Saremi, 2013			✓	✓		
Nath *et al.*, 2014				✓		
Williams *et al.*, 2015						✓
Chandio *et al.*, 2017				✓		
Total	2	3	3	19	1	7

In addition to this, in an effort to move in a new direction, Yusuf Dauda & Lee (2015) carried out a research to study the customers' preference about the adoption of online banking services to be implemented in future. The study has used conjoint analysis and discrete choice model to analyse the preference of the customers in adopting the potential future services of online banking to be implemented in the Nigerian banking industry. These findings suggested that the banks should promote self-service and more convenient as well as entertaining e-services such as video banking (real-time), digital wallet (in mobile banking), cardless ATMs usage with the help of smart phones and biometric services to improve the adoption of online banking services.

The present review article has made a serious and systematic effort to include the studies on the mechanism of technology acceptance which are reported in the literature from 2000 to 2017. In this context, a total number of 29 research studies have been presented in Table 1. Some of the studies have applied more than one model, thus, making the total number greater than 29 articles as depicted in Table 1, i.e. 35. Out of the total 19 studies have used the basic TAM for examining technology acceptance behavior of the users which consist of 65 percent of the total articles considered. The second highest model used for this purpose in the literature is UTAUT (in 7 studies). Thus, it has been conferred that most of the studies have considered TAM as a basic model to gauge and explain the level of technology acceptance and these observations prove the relevance and applicability of this model in the field of acceptance of new technologies. At the same time, some of the researchers have extended the basic technology acceptance model to meet their requirements in different contexts. Therefore, the utility of TAM should also be tested for its validity for different technologies and in different contexts (King & He, 2006).

IT-BASED BANKING AND SERVICE QUALITY

In addition to the adoption and acceptance of IT-based services, numerous researchers have oriented their studies upon the analysis of service quality of the IT-based banking services and most of these studies have been carried out with respect to internet banking specifically and here major attention has been laid down upon the characterization of service quality in it (Singh & Kaur, 2013; Black *et al.*, 2014; Kaura *et al.*, 2015). Service quality has been examined by various researchers in varied industries in different constructs. The banking industry, being an important part of the service industry, i.e. financial service industry, needs to analyse the quality of the service provided to the customers so

that level of their satisfaction can be judged and hence, can be improved accordingly. There has been a significant relationship between better internet banking service quality and improved bank-customer relationship (Brun *et al.*, 2014). The improved service quality of the internet banking industry leads to higher customer satisfaction and their loyalty to the organizations (Black *et al.*, 2014; Dahlstrom *et al.*, 2014). It has been found that customers perceive and judge different dimensions of electronic services to evaluate their e-service quality (Carlson & O'Cass, 2011).

E-service quality is a broader concept where all aspects of transactions should be considered and it should also be expanded worldwide (Rolland & Freeman, 2010). Research on the concept of e-service quality has increased manifold with the passage of time and has been applied to various services (Wu &Ko, 2013; Bressolles *et al.*, 2014; Jiang *et al.*, 2016). The various dimensions considered are environment quality (Carlson & O'Cass, 2011), user-friendliness (Herington &Weaven, 2009), trust (Jayawardhena, 2004), credibility (Jayawardhena, 2004; Siu &Mou, 2005), assurance (Santouridis *et al.*, 2009; Ho & Lin, 2010), efficiency (Siu&Mou, 2005; Herington &Weaven, 2009), security (Zeithaml *et al.*, 2002; Siu&Mou, 2005; Poon, 2007; Thaichon *et al.*, 2014), network quality (Thaichon *et al.*, 2014), and website quality (Zeithaml *et al.*, 2002) etc. In this respect, Amin (2016) has conducted a research work to investigate internet banking service quality in relation to electronic customer satisfaction and loyalty, i.e. e-customer satisfaction and e-customer loyalty. The researcher identified four distinct constructs of internet banking service quality, i.e. user-friendliness (Herington &Weaven, 2009), personal need, the efficiency of the website (Siu &Mou, 2005), and site organization. The results indicated that high service quality of internet banking service positively affects the e-customer satisfaction and e-customer loyalty. The improvement in service quality of an electronic service is a determinant of increased customer satisfaction regarding using that e-service (Sheng & Liu, 2010; Singh & Kaur, 2013; Bressolles *et al.*, 2014; Kaura *et al.*, 2015; Kashif *et al.*, 2015; Raza *et al.*, 2015) and, thus, customer loyalty (Kassim & Abdullah, 2010; Amin *et al.*, 2013; Thaichon *et al.*, 2014). In case of internet banking, a significant relationship between e-customer satisfaction (Anderson & Srinivasan, 2003; Amin *et al.*, 2013; Carlson & O'Cass, 2011) and e-customer loyalty (Anderson &Srinivasan, 2003; Anderson & Swaminathan, 2011; Baumann *et al.*, 2012; Kandampully *et al.*, 2015; Melnyk &Bijmolt, 2015) has been very well investigated by Ramseook-Munhurrun & Naidoo (2011).

SUSTAINABILITY PERSPECTIVE OF IT-BASED BANKING

In the times of growing concerns over corporate social responsibility, all the businesses need to be incorporated with huge sense of sustainability perspective into their short-term and long-term policies (Dao *et al.*, 2011). IT can become a boon as well as a bane for the environmental & societal concerns. It may have several negative impacts on both the society and the environment together. But it can also be used to safeguard the environmental sustainability. The use of IT-based services may be helpful in reducing the carbon footprint of the banking industry which has been increased to a greater extent due to heavy usage of paper and other toxic stuffs in their service operations (Jenkin *et al.*, 2011). The Governments and other associated agencies such as UNEP are regulating all the businesses to adopt environment-friendly strategies and technologies as well. As sustainable development is one of the major challenges of our modern society, all the businesses need to evaluate the effect of their operations on this aspect. There are three pillars of sustainable development, i.e., social, economic and environmental. Social and economic mainstay of sustainable development is rooted in assuring financial inclusion of the rural and underprivileged masses in the developing countries like India (Mishra & Bisht, 2013). Technology plays a vital role in aiding the underprivileged, especially the rural areas (Warren, 2007). For the policy makers, the bearing on the rural population having lesser access to resources in a country is of prime importance (Donner & Tellez, 2008). The innovative IT-based banking models such as mobile banking model has been proven to increase the level of financial inclusion as a pillar of sustainable development (Cracknell, 2004; Porteus, 2007; Mishra & Bisht, 2013). Thus, the banking industry should seriously address the social, economic and environment-related issues while understanding their business/banking operations.

Rapid environment degradation is a matter of huge concern around the world. Information technology can be used in the various business activities and systems in a manner to reduce the negative effects as well as to maximize the positive impacts of human behaviour on the society and environment (Elliot, 2011). With increased industrialization around the world, the encumbrance on the environment has increased manifold. Thus, every business, while evaluating its performance, must consider the impacts on its stakeholders as well as on the environmental sustainability instead of only considering the profitability performance (Dao *et al.*, 2011). Though IT is highly responsible for increasing carbon footprint in the environment (Siegler & Gaughan, 2008), but the firms can also capitalize on undertaking green IT and green IS-related initiatives to become

environment-friendly (Watson *et al.*, 2008). So, IT can be used as a strategic tool in the organizations to bring about social and environmental well-being (Bose & Luo, 2011). On the same platform, some studies have highlighted the role of IT in maintaining and promoting social and environmental sustainability (Cameron, 2010; Hedman & Henningsson, 2011). A new concept of green IT (Jenkin *et al.*, 2011; Chou & Chou, 2012), green IS (Jenkin *et al.*, 2011) and IT for green (Molla & Abareshi, 2012) has been introduced by the eminent scholars in the field. But the organizations generally are ignorant and least concerned about integrating IT and IS into their environmental initiatives and assessments as a part of their societal responsibilities as they do not know how to capitalize on green IT and IS to become environment-friendly (Watson *et al.*, 2008). Only a few studies have incorporated the aspect related to sustainability in IT-based banking.

A very little research on the area of IT-based banking in relation to the sustainable practices of the banks has been undertaken (Jenkin *et al.*, 2011). This area needs to be more exploited by the researchers in this thrust-field as it could provide solutions to the banking industry and government to reduce greenhouse emissions directly or indirectly to a greater extent. As Boon *et al.* (2013) have investigated to study the commercial aspects of green banking by way of conducting in-depth interviews from various stakeholders as its respondents, i.e. the managers, bankers, and heads of households. The findings of the study revealed that both the individuals as well as corporations demand ethical and green banking. The study had also suggested that the banks should encourage green and ethical banking initiatives and should also create public awareness of these ethical practices. In the field of green IT and IS, Gholami *et al.* (2013) contributed towards the literature available on the adoption of green information systems by analysing the perception of senior managers on the adoption of IS and their environmental performance. They tried to find the antecedents of this adoption and also the consequences of adopting green IS into the business. The results of the study indicated that the coercive pressure instead of mimetic pressure affects the attitude towards adoption of green IS and also, they had found a positive relationship between green IS adoption and environmental performance. Cai *et al.* (2013) had undertaken a research work to explore the role played by the IT in promoting the energy and environmental sustainability in China and proposed a research framework based on the political and economic factors. Public concerns and regulatory forces were identified as the key political factors, and cost reduction and differentiation as key economic factors affecting the adoption of green IT and IT for green by the firms. In line with other researchers, Jenkin *et al.* (2011) considered

studying the employees' perception of green information technologies and systems in the financial industry. They examined the extent of employees' recognition of the importance of green information technologies and systems in the financial services sector in the development and application of environment-related/green initiatives. The findings suggested that organizations are in the early stage of awareness and adoption of Green IT/S. Their investigation identified different gaps: knowledge gaps, practice gaps, opportunity gaps, and knowing-doing gaps which should be overcome by the concerned banks by using the scientific and holistic approach in their systems.

IMPLICATIONS OF THE STUDY AND FUTURE AGENDA FOR RESEARCH

The study seeks to provide a deeper understanding of the different outlooks of IT-based banking research. With the help of present study, firstly the bankers/managers may be able to understand the significance of TAM as an elementary model and that of contextual factors to explain the acceptance of IT-based banking services and systems by all the stakeholders. The contextual or external factors are having a substantial effect on the acceptance of IT-based services. Secondly, the bankers need to gauge the service quality of all kinds of specific IT-based services and its impact on customer satisfaction and loyalty by considering the dimensions identified by the eminent scholars in the subject domain. The dimensions uncovered by the prior researchers can be well-thought-out by the managers in the development and delivery of a service for the sake of improvement in the service quality.

Sustainability responsibility is also a vital concern to be deliberated for a firm. In order to ensure sustainability responsibility for the business, the banking industry and the Government should take necessary steps towards ensuring environmental sustainability by using and capitalising on IT into their operations. Some examples of these initiatives taken by banks are installation of solar ATMs, installation of drive-up ATMs instead of drive-through ATMs (Jenkin *et al.*, 2011) to reduce the carbon emission due to car idling, promotion of electronic payment systems, promotion of internet and mobile banking to reduce paper wastage; recycling and proper disposal of hardware to reduce electronic waste, use of e-mails instead of paper mails, and use of video-conferencing instead of travel, etc. The present study also provides a future agenda of research to the prospective researchers in the thrust area. The future researchers should explore and identify more relevant and contextual variables in addition to the basic models propounded by the researchers to explain the acceptance of existing and prospective IT-based

banking services to be introduced. Next, the study has found that most of the studies on service quality aspect of IT-based banking services have been conducted in case of internet banking only. Thus, the future researchers should investigate the service quality of other IT-based services such as mobile banking, electronic payment systems, etc. In addition, there is a great need to study the aspect of environmental sustainability in use of IT-based systems and applications in banking in the current scenario of the banking system and to judge how the proper use of IT and IT-based systems can improve the banks' environmental performance. This area needs more exploration by the researchers as it could provide solutions to the banking industry and the government to reduce greenhouse emissions directly or indirectly to a greater extent.

CONCLUSION

The implementation of information technology and information systems requires the organizations to be flexible and adaptive. The successful incorporation of IT-based innovations into the banking system necessitates the need-based investigation of all the pertinent perspectives. The bankers/managers are required to emphasise the most relevant aspects of this domain. Firstly, the adoption and acceptance of IT-based systems or services should be contemplated, then proceeding to an analysis of the service quality of e-services provided to the customers and finally, evaluating the business performance in terms of impacts on environment and society by not only considering the profitability performance. The present manuscript has been aimed to consider these important issues of implementing and integrating IT-based services and systems into banking as a part of the review study. Thus, in conducting a review of the extensive literature, the paper has been divided into three parts. The first part consists of the adoption and acceptance of technology and technology-based banking. In this context, it can be established that TAM is the most basic and relevant model to be used to explain the acceptance of a new technology in banking but it must be validated before using it in varied contexts. Also, there is a great importance of the contextual variables as these variables have a significant effect on the mediating variables as well as on dependent variable. Next, the aspect of service quality of IT-based banking has been investigated in detail. In the field of research, the attention on the service quality of IT-based banking services is growing extensively. Most of the studies have been focussed upon the service quality of internet banking only whereas the service quality of other IT-based banking services such as mobile banking also needs to be addressed systematically to gauge its impact on customer

satisfaction and loyalty. Finally, in the process of review of sustainability outlook of IT-based banking, the study has found that a very little research has been reported on this aspect. Though many countries like China have started to incorporate the consideration of environmental sustainability into the business performance, but there is still a dire need to incorporate environmental sustainability into all the businesses, in general and in banking, in particular, to safeguard the environment.

References

Abu Shanab, E.; and Pearson, J. M. (2007), Internet Banking in Jordan, *Journal of Systems and Information Technology*, 9(1) : 78–97.

Ajzen, I. (1985), From Intentions to Actions : A Theory of Planned Behavior, In *Action Control* (pp. 11-39), Springer Berlin Heidelberg.

Ajzen, I. (1988), Attitude, Personality, and Behavior, Open University Press, Milton Keynes.

Ajzen, I. (1991), The Theory of Planned Behavior, *Organizational Behavior and Human Decision Processes,* 50(2) : 179-211.

Ajzen, I.; and Fishbein, M. (1975), Belief, Attitude, Intention and Behavior : An Introduction to Theory and Research.

Ajzen, I.; and Fishbein, M. (1980), Understanding Attitude and Predicting Social Behavior, New Jersey : Prentice-Hall.

Al-Ajam, A. S.; and Md Nor, K. (2015), Challenges of Adoption of Internet Banking Service in Yemen, *International Journal of Bank Marketing*, 33(2) : 178-194.

Al-Alak, B. A. (2014), Impact of Marketing Activities on Relationship Quality in the Malaysian Banking Sector, *Journal of Retailing and Consumer Services*, 21(3) : 347-356.

Alsajjan, B.; and Dennis, C. (2010), Internet Banking Acceptance Model : Cross-market Examination, *Journal of Business Research*, 63(9-10) : 957–963.

Al-Somali, S. A.; Gholami, R.; and Clegg, B. (2009), An Investigation into the Acceptance of Online Banking in Saudi Arabia, *Technovation*, 29(2) : 130-141.

Amin, M. (2016), Internet Banking Service Quality and Its Implication on E-customer Satisfaction and E-customer Loyalty, *International Journal of Bank Marketing*, 34(3) : 280-306.

Amin, M.; Isa, Z.; and Fontaine, R. (2013), Islamic Banks : Contrasting the Drivers of Customer Satisfaction on Image, Trust and Loyalty of Muslim and Non-Muslim Customers in Malaysia, *International Journal of Bank Marketing*, 31(2) : 79-97.

Anandarajan, M.; Igbaria, M.; and Anakwe, U.P. (2000), Technology Acceptance in the

Banking Industry : A Perspective from a Less Developed Country, *Information Technology & People,* 13(4) : 298-312.

Anderson, J. E.; Schwager, P. H.; and Kerns, R. L. (2006), The Drivers for Acceptance of Tablet PCs by Faculty in a College of Business, *Journal of Information Systems Education,* 17(4) : 429-40.

Anderson, R. E.; and Srinivasan, S. S. (2003), E-satisfaction and E-loyalty : A Contingency Framework, *Psychology & Marketing*, 20(2) : 123-138.

Anderson, R. E.; and Swaminathan, S. (2011), Customer Satisfaction and Loyalty in E-markets : A PLS Path Modeling Approach, *The Journal of Marketing Theory and Practice,* 19(2) : 221-234.

Armitage, C. J.; and Conner, M. (2001), Efficacy of the Theory of Planned Behaviour : A Meta-analytic Review, *The British Journal of Social Psychology / the British Psychological Society*, 40(Pt 4) : 471-499.

Bansal, P.; (2005), Evolving Sustainably : A Longitudinal Study of Corporate Sustainable Development, *Strategic Management Journal,* 26(3) : 197-218

Barcia, S. M. (2000), Internet Pharmacies : All Hype With No Help?, *Health Management Technology*, 21(4) : 24.

Baumann, C.; Hamin, H.; and Tung, R. L. (2012), Share of Wallet in Retail Banking, *International Journal of Bank Marketing,* 30(2) : 88-101.

Bhattacherjee, A. (2000), Acceptance of E-commerce Services : The Case of Electronic Brokerages, *IEEE Transactions on Systems, Man and Cybernetics, Part-A : Systems and Humans* 30(4) : 411-420.

Black, H. G.; Childers, C. Y.; and Vincent, L. H. (2014), Service Characteristics' Impact on Key Service Quality Relationships : A Meta-analysis, *Journal of Services Marketing*, 28(4) : 276-291.

Boateng, H.; Adam, D. R.; Okoe, A. F.; and Anning-Dorson, T. (2016), Assessing the Determinants of Internet Banking Adoption Intentions : A Social Cognitive Theory Perspective, *Computers in Human Behavior*, *65* : 468-478.

Bobbitt, L. M.; and Dabholkar, P. A. (2001), Integrating Attitudinal Theories to Understand and Predict Use of Technology-based Self-service, *International Journal of Service Industry Management,* 12(5) : 423-50.

Boon, T. H.; Mei-Mei, P. A.; Kim, R. C. H.; and Khee, P. C. (2013), Green and Ethical Banking : Demand and Supply Perspectives from Bankers, Corporations and Heads of Households in Malaysia, *Banker's Journal, Malaysia,* 141(2013) : 12-20 .

Bose, R.; and Luo, X. (2011), Integrative Framework for Assessing Firms' Potential to Undertake Green IT Initiatives Via Virtualization — A Theoretical Perspective, *The Journal of Strategic Information Systems*, 20(1) : 38-54.

Boudreau, M. C.; Chen, A.; and Huber, M. (2008), Green IS : Building Sustainable Business Practices, *Information Systems : A Global Text*, 1-17.

Bressolles, G.; Durrieu, F.; and Senecal, S. (2014), A Consumer Typology-Based on E-Service Quality and E-Satisfaction, *Journal of Retailing and Consumer Services*, 21(6) : 889-896.

Brun, I.; Rajaobelina, L.; and Ricard, L. (2014), Online Relationship Quality : Scale Development and Initial Testing, *International Journal of Bank Marketing*, 32(1) : 5-27.

Butler, T.; (2011), Compliance with Institutional Imperatives on Environmental Sustainability : Building Theory on the Role of Green IS, *Journal of Strategic Information Systems,* 20(1) : 6-26.

Cai, S.; Chen, X.; and Bose, I. (2013), Exploring the Role of IT for Environmental Sustainability in China : An Empirical Analysis, *International Journal of Production Economics*, 146(2) : 491-500.

Cameron, K. W. (2010), Trading in Green IT, *IEEE Computer*, 43(3) : 83-85

Carlson, J.; and O'Cass, A. (2011), Developing A Framework for Understanding E-Service Quality, Its Antecedents, Consequences, and Mediators, *Managing Service Quality : An International Journal*, 21(3) : 264-286.

Chandio, F. H.; Irani, Z.; Zeki, A. M.; Shah, A.; and Shah, S. C. (2017), Online Banking Information Systems Acceptance : An Empirical Examination of System Characteristics and Web Security. *Information Systems Management*, 34(1).

Chandio, H. F.; Irani, Z.; Abbasi, M. S.; and Nizamani, H. A. (2013), Acceptance of Online Banking Information Systems : An Empirical Case in a Developing Economy, *Behaviour & Information Technology*, 32(7) : 668-680.

Chau, P.; and Hu, P. (2001), Information Technology Acceptance by Individual Professionals : A Model Comparison Approach, *Decision Sciences,* 32 : 699-710.

Chemingui, H.; and Ben lallouna, H. (2013), Resistance, Motivations, Trust and Intention to Use Mobile Financial Services, *International Journal of Bank Marketing*, 31(7) : 574-592.

Chen, M. Y.; and Teng, C. I. (2013), A Comprehensive Model of the Effects of Online Sstore Image on Purchase Intention in an E-commerce Environment, *Electronic Commerce Research*, 13(1) : 1-23.

Chen, R.-F.; Hsiao, J.-L.; and Hwang, H.-G. (2012), Measuring Customer Satisfaction of Internet Banking in Taiwan : Scale Development and Validation, *Total Quality Management & Business Excellence,* 23(7/8) : 749-767.

Cho, N.; and Park, S. (2001), Development of Electronic Commerce User-Consumer Satisfaction Index (ECUSI) for Internet Shopping, *Industrial Management & Data Systems*, 101(8) : 400-406.

Chou, D. C.; and Chou, A. Y. (2012), Awareness of Green IT and its Value Model, *Computer Standards & Interfaces,* 34(5) : 447-451.

Corbett, J. (2010), Unearthing the value of green IT in Proceedings of the Thirty-First International Conference on Information Systems, *St. Louis, Paper*, 198.

Crabbe, M.; Standing, C.; Standing, S.; and Karjaluoto, H. (2009), An Adoptation Model for Mobile Banking in Ghana, *International Journal of Mobile Communication*, 7(5) : 515-543.

Cracknell, D. (2004), Electronic Banking for the Poor – Panacea, Potential and Pitfalls, *Small Enterprise Development,* 15(4) : 8-24.

Dahlstrom, R.; Nygaard, A.; Kimasheva, M.; and M. Ulvnes, A. (2014), How to Recover Trust in the Banking Industry? A Game Theory Approach to Empirical Analyses of Bank and Corporate Customer Relationships, *International Journal of Bank Marketing*, 32(4) : 268-278.

Dao, V.; Langella, I.; and Carbo, J. (2011), From Green to Sustainability : Information Technology and An Integrated Sustainability Framework, *Journal of Strategic Information Systems*, 20(1) : 63-79.

Davis, F. D. (1989), Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology, *MIS Quarterly,* 13 : 319-340.

Davis, F. D.; and Venkatesh, V. (1996), A Critical Assessment of Potential Measurement Biases in the Technology Acceptance Model : Three Experiments, *International Journal of Human-Computer Studies*, 45(1) : 19-45.

Davis, F.; Bagozzi, R.; and Warshaw, P. (1989), User Acceptance of Computer Technology : A Comparison of Two Theoretical Models, *Management Science,* 35 : 982-1003.

Davis, F. D. (1986), A Technology Acceptance Model for Empirically Testing New End-User Information System : Theory and Result, *Doctoral Dissertation*, MIT Sloan School of Management, Cambridge, MA.

Devaraj, S.; Fan, M.; and Kohli, R. (2002), Antecedents of B2C Channel Satisfaction and Preference : Validating E-commerce Metrics, *Information Systems Research,* 13(3) : 316-333.

Dimitriadis, S.; and Kyrezis, N. (2011), The Effect of Trust, Channel Technology, and Transaction Type on the Adoption of Self-service Bank Channels, *The Service Industries Journal*, 31(8) : 1293-1310.

Donner, J.; and Tellez, C. A. (2008), Mobile Banking and Economic Development : Linking Adoption, Impact and Use, *Asian Journal of Communication*, 18(4) : 318-322.

Elliot, S. (2011), Transdisciplinary Perspectives on Environmental Sustainability : A Eesource Base and Framework for IT-enabled Business Transformation, *MIS Quarterly*, 35(1) : 197-236.

Faucheux, S.; and Nicolaï, I. (2011), IT for Green and Green IT : A proposed Typology of Eco-innovation, *Ecological Economics*, 70(11) : 2020-2027.

Gefen, D.; Karahanna, E. and Straub, D.W. (2003), Trust and TAM in Online Shopping : An Integrated Model, *MIS Quarterly,* 27(1) : 51-90

George, A.; and Kumar, G. G. (2014), Impact of Service Quality Dimensions in Internet Banking on Customer Satisfaction, *Decision*, 41(1) : 73-85.

Gerrard, P.; and Barton Cunningham, J. (2003), The Diffusion of Internet Banking Among Singapore Consumers, *International Journal of Bank Marketing*, 21(1) : 16-28.

Gholami, R.; Sulaiman, A. B.; Ramayah, T.; and Molla, A. (2013), Senior Managers' Perception on Green Information Systems (IS) Adoption and Environmental Performance: Results from a Field Survey, *Information & Management*, 50(7) : 431-438.

Giordani, G.; Floros, C.; and Judge, G. (2014), Econometric Investigation of Internet Banking Adoption in Greece, *Journal of Economic Studies*, 41(4) : 586-600.

Hanafizadeh, P.; Keating, B. W.; and Khedmatgozar, H. R. (2014), A Systematic Review of Internet Banking Adoption, *Telematics and Informatics*, 31(3) : 492-510.

Harrison T. S.; Onyia, O. P.; and Tagg, S. K. (2014), Towards a Universal Model of Internet Banking Adoption : Initial Conceptualization, *International Journal of Bank Marketing*, 32(7) : 647-687.

Hasim, M. S.; and Salman, A. (2010), Factors Affecting Sustainability of Internet Usage Among Youth, *The Electronic Library*, 28(2) : 300-313.

Hedman, J.; Henningsson, S. (2011), Three Strategies for Green IT, *IEEE IT Professional,* 13(1) : 54-57.

Herington, C.; and Weaven, S. (2009), E-retailing by Banks : E-service Quality and Its Importance to Customer Satisfaction, *European Journal of Marketing*, 43(9/10) : 1220-1231.

Herna'ndez, B.; Jimenez, J.; and Martín, M. J. (2008), Extending the Technology Acceptance Model to Include the IT Decision-maker : A Study of Business Management Software, *Technovation*, 28(3) : 112-121.

Ho, C. T.; and Lin, W. C. (2010), Measuring the Service Quality of Internet Banking : Scale Development and Validation, *European Business Review,* 22(1) : 5-24.

Igbaria, M.; and Ivari, J. (1995), The Effects of Self-efficacy on Computer Usage, *Omega International Journal of Management Science,* 23(6) : 587-605.

Igbaria, M.; Iivari, J.; and Maragahh, H. (1995), Why Do Individuals Use Computer Technology? A Finnish Case Study, *Information and Management,* 29 : 227-238.

Jayawardhena, C. (2004), Measurement of Service Quality in Internet Banking : The Development of An Instrument, *Journal of Marketing Management*, 20(1-2) : 185-207.

Jayawardhena, C.; and Foley, P. (2000), Changes in the Banking Sector – The Case of Internet Banking in the UK, *Internet Research*, 10(1) : 19-31.

Jenkin, T. A.; McShane, L.; and Webster, J. (2011), Green Information Technologies and Systems : Employees' Perceptions of Organizational Practices, *Business & Society*, 50(2) : 266-314.

Jiang, L.; Jun, M.; and Yang, Z. (2016), Customer-perceived Value and Loyalty : How Do Key Service Quality Dimensions Matter in the Context of B2C E-commerce?, *Service Business*, 10(2) : 301-317.

Jun, M.; and Cai, S. (2001), The Key Determinants of Internet Banking Service Quality : A Content Analysis, *International Journal of Bank Marketing*, 19(7) : 276-291.

Kandampully, J.; Zhang, T.; and Bilgihan, A. (2015), Customer Loyalty : A Review and Future Directions with a Special Focus on the Hospitality Industry, *International Journal of Contemporary Hospitality Management*, 27(3) : 379-414.

Kashif, M.; Wan Shukran, S. S.; Rehman, M. A.; and Sarifuddin, S. (2015), Customer Satisfaction and Loyalty in Malaysian Islamic Banks : a PAKSERV Investigation, *International Journal of Bank Marketing*, 33(1) : 23-40.

Kassim, N.; and Asiah Abdullah, N. (2010), The Effect of Perceived Service Quality Dimensions on Customer Satisfaction, Trust, and Loyalty in E-commerce Settings : A Cross Cultural Analysis. *Asia Pacific Journal of Marketing and Logistics*, 22(3) : 351-371.

Kaura, V.; Durga Prasad, C. S.; and Sharma, S. (2015), Service Quality, Service Convenience, Price and Fairness, Customer Loyalty, and the Mediating Role of Customer Satisfaction, *International Journal of Bank Marketing*, 33(4) : 404-422.

Kesharwani, A.; Bisht, S. S. (2012), The Impact of Trust and Perceived Risk on Internet Banking Adoption in India, *International Journal of Bank Marketing,* 30(4) : 303-322.

King, W. R.; and He, J. (2006), A Meta-Analysis of the Technology Acceptance Model, *Information and Management*, 43(6) : 740-755.

Lai, V. S.; and Li, H. (2005), Technology Acceptance Model for Internet Banking : An Invariance Analysis, *Information & Management*, 42(2) : 373-386. http://doi.org/10.1016/j.im.2004.01.007

Lee, S. G.; Chae, S. H.; and Cho, K. M. (2013), Drivers and Inhibitors of SaaS Adoption in Korea, *International Journal of Information Management*, 33(3) : 429-440.

Legris, P.; Ingham, J.; and Collerette, P. (2003), Why Do People Use Information Technology? A Critical Review of the Technology Acceptance Model, *Information & Management*, 40(3) : 191-204.

Liao, Z.; and Cheung, M. T. (2008), Measuring Consumer Satisfaction in Internet Banking : A Core Framework, *Communications of the ACM,* 51(4) : 47-51.

Liébana-Cabanillas, F.; Munoz-Leiva, F.; and Rejón-Guardia, F. (2013), The Determinants of Satisfaction with E-banking, *Industrial Management & Data Systems*, *113*(5), 750-767.

Malarvizhi, V. (2011), An Analysis on the Usage of E-banking Services in Coimbatore City, *IJBEMR*, 2(1) : 226-242.

Malhotra, P.; and Singh, B. (2007), Determinants of Internet Banking Adoption by Banks in India, *Internet Research,* 17(3) : 323-339.

Marshall, L. (2006), Flying High on Service Automation, *Customer Relationship Management,* 10 : 2-42.

Martins, C.; Oliveira, T.; and Popovi, A. (2014), Understanding the Internet Banking

Adoption : A Unified Theory of Acceptance and Use of Technology and Perceived Risk application, *International Journal of Information Management,* 34(1) : 1-13.

McFarland, D. J.; and Hamilton, D. (2006), Adding Contextual Specificity to the Technology Acceptance Model, *Computers in Human Behavior*, 22(3) : 427-447.

McNeish, J. (2015), Consumer Trust and Distrust : Retaining Paper Bills in Online Banking, *International Journal of Bank Marketing*, 33(1) : 5-22.

Melnyk, V.; and Bijmolt, T. (2015), The Effects of Introducing and Terminating Loyalty Programs, *European Journal of Marketing*, 49(3/4) : 398-419.

Miao, Z.; Cai, S.; Xu, D.; (2012), Exploring the Antecedents of Logistics Social Responsibility : A Focus on Chinese Firms, *International Journal of Production Economics,* 140(1) : 18-27

Mishra, V.; and Bisht, S. S. (2013), Mobile Banking in a Developing Economy : A Customer-Centric Model for Policy Formulation, *Telecommunications Policy*, 37(13) : 503-514.

Molla, A.; Abareshi, A.; (2012), Organizational Green Motivations for Information Technology : Empirical Study, *Journal of Computer Information Systems,* 52(3) : 92-102

Montazemi, A. R.; and Saremi, H. Q. (2013), Factors Affecting Internet Banking Pre-usage Expectation Formation, *Proceedings of the Annual Hawaii International Conference on System Sciences*, 4666-4675. http://doi.org/10.1109/HICSS.2013.231

Murari, K.; and Tater, B. (2014), Employee's Attitude Towards Adoption of IT-based Banking Services, *Competitiveness Review*, 24(2) : 107-118.

Narayanasamy, K.; Rasiah, D. and Tan, T.M. (2011), The Adoption and Concerns of E-Finance in Malaysia, *Electronic Commerce Research,* 11(4) : 383-400.

Nath, R.; Bhal, K. T.; and Kapoor, G. T. (2014), Factors influencing IT Adoption by Bank Employees: An Extended TAM Approach, *Vikalpa : The Journal for Decision Makers*, 38(4) : 83-96. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=94611286&site=bsi-live

Oh, S.; Ahn, J.; and Kim, B. (2003), Adoption of Broadband Internet in Korea : The Role of Experience in Building Attitudes, *Journal of Information Technology*, 18(4) : 267-280.

Page, C.; and Lepkowska-White, E. (2002), Web Equity : A Framework for Building Consumer Value in Online Companies, *Journal of consumer marketing*, 19(3) : 231-248.

Patsiotis, A. G.; Hughes, T.; and Webber, D. J. (2012), Adopters and Non-adopters of Internet Banking : A Segmentation Study, *International Journal of Bank Marketing*, 30(1) : 20-42. http://doi.org/10.1108/02652321211195686

Pavlou, P. (2003), Consumer Acceptance of Electronic Commerce : Integrating Trust and Risk with the Technology Acceptance Model, *International Journal of Electronic Commerce,* 7(3) : 69-103.

Pikkarainen, T.; Pikkarainen, K.; Karjaluoto, H.; and Pahnila, S. (2004), Consumer Acceptance of Online Banking : An Extension of the Technology Acceptance Model, *Internet Research*, 14(3) : 224-235. http://doi.org/10.1108/10662240410542652

Poon, W. C. (2007), Users' Adoption of E-banking Services : The Malaysian Perspective, *Journal of Business & Industrial Marketing*, 23(1) : 59-69.

Porteous, D. (2007), Just How Transformational is M-banking II, Commissioned by Finmark. Retrieved 2nd December, 2016 from http://www.finmarktrust.org.za/accessFrontier/Documents/transformational_mbanking.pdf

Ramseook-Munhurrun, P.; and Naidoo, P. (2011), Customers' Perspectives of Service Quality in Internet Banking, *Services Marketing Quarterly*, 32(4) : 247-264.

Raza, S. A.; Jawaid, S. T.; and Hassan, A. (2015), Internet Banking and Customer Satisfaction in Pakistan, *Qualitative Research in Financial Markets*, 7(1) : 24-36.

Rezaei, S.; Amin, M.; and Khairuzzaman Wan Ismail, W. (2014), Online Repatronage Intention : An Empirical Study Among Malaysian Experienced Online Shoppers, *International Journal of Retail & Distribution Management*, 42(5) : 390-421.

Rod, M.; and Ashill, N. J. (2010), Management Commitment to Service Quality and Service Recovery Performance : A Study of Frontline Employees in Public and Private Hospitals, *International Journal of Pharmaceutical and Healthcare Marketing,* 4(1) : 84-103.

Rogers, E. (1995), Diffusion of Innovations (4th ed.), New York : Free Press

Rolland, S.; and Freeman, I. (2010), A New Measure of E-service Quality in France, *International Journal of Retail & Distribution Management*, 38(7) : 497-517.

Santouridis, I.; Trivellas, P.; and Reklitis, P. (2009), Internet Service Quality and Customer Satisfaction : Examining Internet Banking in Greece, *Total Quality Management*, 20(2) : 223-239.

Selamat, Z.; Jaffar, N.; Ong, H. B. (2009), Technology Acceptance in Malaysian Banking Industry, *European Journal of Economics, Finance and Administrative Sciences*, 1(17) : 143-155.

Shen, Y. C.; Huang, C.-Y.; Chu, C. H.; and Hsu, C. T. (2010), A Benefit — Cost Perspective of the Consumer Adoption of the Mobile Banking System, *Behaviour & Information Technology,* 29(5) : 497-511.

Sheng, T.; and Liu, C. (2010), An Empirical Study on the Effect of E-service Quality on Online Customer Satisfaction and Loyalty, *Nankai Business Review International*, 1(3) : 273-283.

Shumaila, Y.; Foxall, G. R.; and Pallister, J. G. (2010), Explaining Internet Banking Behavior : Theory of Reasoned Action, Theory of Planned Behavior, or Technology Acceptance Model?, *Journal of Applied Social Psychology*, 40(5) : 1172-1202. http://doi.org/10.1111/j.1559-1816.2010.00615.x

Siegler, K.; and Gaughan, B. (2008), A Practical Approach to Green IT, Retrieved from http://www.itmanagement.com/webcast/practical-green-it/

Singh, J.; and Kaur, P. (2013), Customers' Attitude Towards Technology-Based Services Provided by Select Indian Banks : Empirical Analysis, *International Journal of Commerce and Management*, 23(1) : 56-68.

Siu, N. Y. M.; and Mou, J. C. W. (2005), Measuring Service Quality in Internet Banking : The Case of Hong Kong, *Journal of International Consumer Marketing*, 17(4) : 99-116.

Stoel, L.; and Lee, K.-H. (2003), Modeling the Effect of Experience on Student Acceptance of Web-based Courseware, *Internet Research : Electronic Networking Applications and Policy,* 16(5) : 364-374.

Thaichon, P.; Lobo, A.; and Mitsis, A. (2014), An Empirical Model of Home Internet Services Quality in Thailand, *Asia Pacific Journal of Marketing and Logistics*, 26(2) : 190-210.

Thakur, R. (2014), What Keeps Mobile Banking Customers Loyal?, *International Journal of Bank Marketing*, 32(7) : 628-646.

Venkatesh, V.; and Bala, H. (2008), Technology Acceptance Model 3 and A Research Agenda on Interventions, *Decision Sciences*, 39(2) : 273-315.

Venkatesh, V.; and Morris, M. G. (2000), Why Don't Men Ever Stop to Ask for Directions? Gender, Social Influence, and Their Role in Technology Acceptance and Usage Behavior, *MIS Quarterly*, 115-139.

Venkatesh, V.; Morris, M. G.; Davis, G. B.; and Davis, F. D. (2003), User Acceptance of Information Technology : Towards a Unified View, *MIS Quarterly,* 27(3) : 425-478.

Wang, Y. S.; Wang, Y. M.; Lin, H. H.; and Tang, T. I. (2003), Determinants of User Acceptance of Internet Banking : An Empirical Study, *International Journal of Service Industry Management*, 14(5) : 501-519.

Warren, M. (2007), The Digital Vicious Cycle : Links Between Social Disadvantage and Digital Exclusion in Rural Areas, *Telecommunications Policy*, 31(6-7) : 374-388.

Watson, R. T.; Boudreau, M. C.; Chen, A.; and Huber, M. H. (2008), Green IS : Building Sustainable Business Practices, In R. T. Watson (Ed.), Information Systems, Athens, GA, USA : Global Text Project.

Williams, M. D.; Rana, N. P.; and Dwivedi, Y. K. (2015), The Unified Theory of Acceptance and Use of Technology (UTAUT) : A Literature Review, *Journal of Enterprise Information Management*, 28(3) : 443-488.

Wu, H.-C.; and Ko, Y. J. (2013), Assessment of Service Quality in the Hotel Industry, *Journal of Quality Assurance in Hospitality & Tourism,* 14(3) : 218-244.

Yang, Z.; Jun, M.; and Peterson, R. T. (2004), Measuring Customer Perceived Online Service Quality : Scale Development and Managerial Implications, *International Journal of Operations & Production Management*, 24(11) : 1149-1174.

Yuen, A.H.K.; and Ma, W.W.K. (2002), Gender Differences in Teacher Computer Acceptance, *Journal of Technology and Teacher Education,* 10(3) : 365-382.

Yuen Y. Y.; Yeow P. H. P.; Lim N.; and Saylani N. (2010), Internet Banking Adoption : Comparing Developed and Developing Countries, *The Journal of Computer Information Systems,* 51(1) : 52-61

Yusuf Dauda, S.; and Lee, J. (2015), Technology Adoption : A Conjoint Analysis of Consumers' Preference on Future Online Banking Services, *Information Systems*, *53*, 1-15. http://doi.org/10.1016/j.is.2015.04.006

Zavareh, F. B.; Ariff, M. S. M.; Jusoh, A.; Zakuan, N.; Bahari, A. Z.; and Ashourian, M. (2012), E-Service Quality Dimensions and Their Effects on E-Customer Satisfaction in Internet Banking Services, *Procedia-Social and Behavioral Sciences*, 40 : 441-445. http://doi.org/10.1016/j.sbspro.2012.03.213

Zeithaml, V. A.; Parasuraman, A.; and Malhotra, A. (2002), Service Quality Delivery Through Websites : A Critical Review of Extant Knowledge, *Journal of the Academy of Marketing Science*, 30(4) : 362-375.

Zhao, A. L.; Hanmer-Lloyd, S.; Ward, P.; and Goode, M. M. (2008), Perceived Risk and Chinese Consumers' Internet Banking Services Adoption, *International Journal of Bank Marketing*, 26(7) : 505-525.

Zhao, A. L.; Koenig-Lewis, N.; Hanmer-Lloyd, S.; and Ward, P. (2010), Adoption of Internet Banking Services in China : Is It All about Trust?, *International Journal of Bank Marketing,* 28(1) : 7-26

Zhou, T.; Lu, Y.; and Wang, B. (2010), Integrating TTF and UTAUT to Explain Mobile Banking User Adoption, *Computers in Human Behavior,* 26 : 760-767, http://dx.doi.org/10.1016/j.chb.2010.01.013