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Factors influencing the adoption of internet banking: An integration of ISSM and UTAUT with price value and perceived risk

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The investigation of users' satisfactions and intentions in using the services provided by commercial banks needs to be focused on internet banking, since this is the widely used banking service. This paper analyzed the satisfactions and behavioral intentions of Malaysian customers in using Internet Banking, applying the Information System Success Model (ISSM) by the integration of adoption and application technology (UTAUT) theory. Some criteria, which were taken into consideration, are as follows: perceived Risk (PR), facilitating Conditions (FC), Price (PV), Performance expectancy (PE), Information Quality (IQ), Service Quality (SEQ), and System Quality (SQ). These aspects are important to measure customers' satisfaction and behavior toward Internet and Online Banking. A sample of 362 valid responses, consisting of Malaysian customers who used E-Banking, was used for the purpose of data collection. The relationship between customers' satisfaction and factors influencing their contentment in using Online Banking was investigated. In order to evaluate this, a model called "Structural Equation Model (SEM)" was developed and used. Findings showed that most of the Online Banking users were satisfied with the system. Hence, it proves that Online Banking System was generally accepted in the Malaysian community. However, this current research is solely focused on the Malaysian community. Therefore, it may provide the necessary grounds for the study of internet banking accreditation, some useful information for the practitioners, policy makers, and the researchers to improve the system of online banking in Malaysia only. For a future study, a more well-structured research, which can accommodate the global need, would be required.

KEYWORDS

internet banking, service quality, perceived risk, customers' satisfaction, performance expectancy

Introduction

This is the new age of technology and globalization. Therefore, the banking services provided by commercial banks should meet the needs of time. They should be flexible and fast. In this modern era, Internet Banking (IB) is considered as one of the major E-Commerce applications. Internet banking (IB) is defined as banking applications that allow customers to perform financial transactions through the use of World Wide Web wherever Internet is available, at anytime, anywhere (Shih and Fang, 2004). Majority of the banks have introduced IB to improve customers' service (Rahi and Abd.Ghani, 2019). Moreover, the internet banking is also a cost-effective medium of banking, and, at the same time, it creates a reciprocal relationship between the banks and customers (Rahi and Ghani, 2016; Rahi and Abd.Ghani, 2019). Besides, IB will not only benefit banks but will also fulfill customer needs (Rahi and Ghani, 2016; Shahzad et al., 2017). However, in Malaysia, only about 50% of people use Internet banking, which is very low as compared to any developed country as USA. Yuen et al. (2015) and Amin (2016) studied on the causes of low utilization of IB in Malaysia. In Pakistan, the similar situation is also perceived. The users of Internet in Pakistan are just 3.1 million out of 200 million populations (Rahi et al., 2020). Nevertheless, the use of Internet Banking has started to increase since the pandemic COVID-19 outbreak in 2019 (Islam et al., 2020; Apuke and Omar, 2021). The prohibitions, the lockdowns, and the social distancing are the major causes that "forced" people all over the world to opt for online banking (Apuke and Omar, 2021). Ever since, the technology has been widely accessible since all people were becoming paranoid of being infected by the disease (Naeem and Ozuem, 2021). The fear of getting ill makes people decide to stay in their houses. Thus, the excessive use of internet and internet banking has been observed in the form of online shopping and online billing, etc. People usually bought from grocery stores, hotels, shops, restaurants, etc. (Albort-Morant et al., 2021; Demirgüç-Kunt et al., 2021). According to Laato et al. (2020) fear and anxiety cause an abnormality in behavior of the customers. Buying extra groceries, food items, toiletries, face masks is an example (Laato et al., 2020; Prentice et al., 2020).

The behavior of the online banking customers has been studied, and it has become a subject of keen interest in recent times. According to Lin et al. (2015), Chaouali et al. (2016), and Tam and Oliveira (2016), the question that usually arouse is about the purpose of Internet Banking (Nabavi et al., 2016). This question is to figure out the reasons of a customer in using internet banking and why do they decide to continue using it (Rahi et al., 2017). Past researchers show that it is very important for any banks to study the purpose of continuity of online services. This will help them in improving their qualities toward a more stable and successful organization (Bello-Pintado et al., 2018; Kumar et al., 2018). According to Yuan et al. (2019), fast, cost-effective, widely accessible, and service hours are the

main concern of customers in choosing their online banking. Martins et al. (2014) found performance expectancy, effort expectancy, and social influence as significant factors influencing customers' intention to adopt Internet banking. Moreover, Shih and Fang (2004) reported that the actual usage of Internet banking was strongly associated with behavioral intention. In Oman, Riffai et al. (2012) revealed that performance expectancy, effort expectancy, playfulness, and website design were proved to be significant contributors to the customers' intention.

Rehman et al. (2020) observe that behavioral deterrents have received less attention in research. Prior research has mostly focused on drivers. This is one of the reasons why perceived risk (PR) and price value (PV) have been introduced to the UTAUT model in this research. In the past, academic research (Rod et al., 2009; Amin, 2016; Kumar et al., 2020; Al-Saedi and Al-Emran, 2021) has paid less attention to how customers' satisfaction (CS) may affect IB. Previous empirical studies have used the ISSM model to measure User Satisfaction (Lee and Chung, 2009; Tam and Oliveira, 2016). This study aims to analyze the mediating effect of Use in internet Banking. The results from this research are expected to provide input for customers in the banking sectors regarding the factors that influence the successful implementation of internet banking. It may also be useful as the improvements of existing literature, especially for the studies, which particularly focused on the successful implementation of Internet Banking.

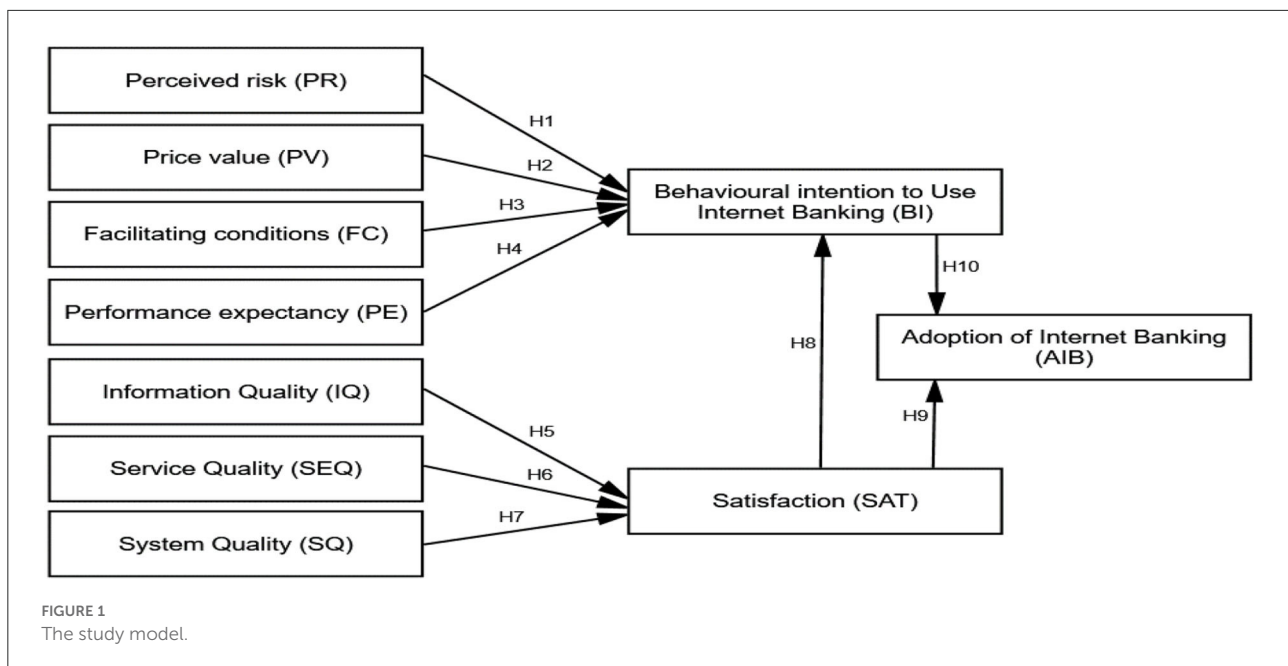
Internet Banking can help in almost every kind of purchase or transaction that would be needed at any hours of the day. We can pay bills, fees, rents, etc. We can also transfer a huge amount of money in just a blink of an eye. Now, almost every bank is using online banking as a medium of banking. An Internet Banking service enables customers to pay transaction fees, online purchases, and transfers, and make Internet Banking statements *via* an Internet Banking website. As for Malaysia, there are currently 3.1 million registered internet banking users (Naeem and Ozuem, 2021). Therefore, the actual use of Internet Banking services is considerably low compared to other e-banking services, such as real-time Internet Banking, the trading platform, and ATM. In the underdeveloped and developing countries where the literacy rate is comparatively low, COVID-19 has not much altered the behavior of the general population. There are not many pieces of evidence that shows the high level usage of internet banking. The gaps in this research are that previous models have focused either on TAM factors and UTAUT (Sobti, 2019) but not focused on ISSM factors to the developing model (Al-Rahmi et al., 2021). A lack of models in customers' behavioral intention to use and satisfaction in the adoption of internet banking involving the usage of internet banking services as the research subject in Malaysia (Amin, 2016) and previous research had less consideration toward models of adoption of internet banking under banking sectors (Janahi, 2013; Montazemi and Qahri-Saremi, 2015; Rahi et al., 2021). Therefore, the main aim of our

study is to overcome weaknesses, which will be developed in a model with UTAUT, ISSM factors with perceived risk and price value of internet banking in the Malaysian context through the UTAUT model (Venkatesh et al., 2003) and the ISSM model (DeLone and McLean, 2003) to evaluate customers' adoption of internet banking. Customers' motivational problems are always manifested in their behavior. To fill this gap, this study was designed to test the hypotheses using the ISSM-integrated framework with UTAUT as the basis for determining customer satisfaction forecasts and the purpose of using an online bank to use an online bank in Malaysia. Technology adoption is a great challenge in the banking sector of Malaysia. A recent report issued by a state bank of Malaysia has revealed that there is a squeak growth in internet banking adoption. In order to effectively delve into the issue of internet banking adoption, the purpose of this paper is to integrate Information System Success Model (ISSM), namely, Information Quality (IQ), Service Quality (SEQ), System Quality (SQ), and the unified theory of acceptance and use of technology (UTAUT), namely Facilitating conditions (FC), Performance expectancy (PE) with two external factors, namely, Price value (PV), and Perceived risk (PR), as theoretical lens for this study. Instead, this study investigates the role of UTAUT and ISSM in customer satisfaction and the purpose of using Internet Banking approval. Instead, this study investigates the role of UTAUT and ISSM in customer satisfaction and the purpose of using Internet Banking approval.

In view of the above, this paper investigated the satisfaction and behavioral intention in using internet banking among Malaysian customers. Findings were evaluated using the Information System Success Model (ISSM), and unified theory of acceptance and use of technology (UTAUT). The "Structural Equation Model" (SEM) to examine the relationship between the factors that affect customers' adoption of internet banking was developed. In particular, the research model analyzes the impact of both collaborative design requirements, namely, "Facilitating conditions (FC), Performance expectancy (PE), Price value (PV), and Perceived risk (PR), and e-banking, namely, Information Quality (IQ), Service Quality (SEQ), System Quality (SQ)", customer satisfaction, and behavioral intention to use to be applied to the Internet Banking process and in their adoption of Internet Banking. As a test bed for this research, we employed IBM SPSS and Smart-PLS 3.3.3 as the primary statistical procedures in our research, which included constructing validity of the measures, convergent validity of the measures, discriminant validity of the measurement, and investigating the structural model. This research is organized as follows: Section 2: the Frameworks of theories and hypotheses; Section 3: Materials and methods; Section 4: Presentation of analyzed results; Section 5: Discussion and implication; and section 6: conclusion and direction of future work, are being highlighted.

Frameworks of theories and hypotheses

In this study, the UTAUT and ISSM were adopted as the underpinning study framework to tackle the question as to how users accept and adopt internet banking. The findings are expected to offer complementary and comparison evidence for research on the adoption of internet banking in developing countries. Our study is based on DeLone and McLean's (2003) ISSM success model (original and updated version). The original version of the D&M model revised ISSM measures and conceived a model of the interrelationships between six ISSMs' factors: system quality, information quality, use, user satisfaction, individual impact, and organizational impact. Later, in the updated version, DeLone and McLean (2003) added the "service quality" measure. For D&M, to measure the success of a single system, information quality or system quality may be the most significant quality component. For measuring the overall success of the IS department, as opposed to individual systems, "service quality" may become the most important variable. Internet banking users may face several problems and usage troubles that should be mitigated. Providing adequate supports for the end users could encourage customers' loyalty in continuing to use the services (Venkatesh et al., 2003). The UTAUT model provides a unified view of a number of important studies validating technology acceptance models in various contexts. It incorporates four key constructs: PE, EE, facilitating conditions, (FC) and SI to utilize technology. The eight IT adoption theories integrated in this theory are, namely, the Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model (MM), Theory of Planned Behavior (TPB), a model that combined TAM and TPB, Model of PC Personal Computer Utilization (MPCU), Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT). The UTAUT theory has been tested to show that it exceeds the eight separate models, with a variance of 70% (Venkatesh et al., 2003). The UTAUT model is considered as the most comprehensive research model when it comes to predicting consumer behavior in the context of electronic banking (Martins et al., 2014; Alalwan et al., 2017; Zhang et al., 2018). It was reported by Venkatesh et al. (2003) that, when compared to other models, the UTAUT model generally has a better explanatory power in predicting behavioral intention toward an information system. The literature models have studied "ISSM [Information Quality (IQ), Service Quality (SEQ), System Quality (SQ)], UTAUT [Facilitating conditions (FC), Performance expectancy (PE)], Price value (PV), and Perceived risk (PR), which consequently affect the customers' satisfaction and behavioral intention to use in adoption of internet banking" (see Figure 1). The proposed model incorporates key elements of UTAUT theory (Venkatesh et al., 2003), as well as the ISSM (DeLone and McLean, 2003) model for understanding Internet



Banking acceptance. Any new technology is not easily accepted by the general people. It is a very complex process that require times and study (Rahi et al., 2018a). The more study is conducted the more ideas and concepts are generated, thus giving us new models of research (Jackson et al., 2013). These models give us a dynamic account of mechanisms and their underlying relationships that cannot be determined by a single theory model. The above-mentioned information gives us a model comprises of the following factors: Service Quality, System Quality, Information Quality, facilitating Conditions, Prices, Performance expectancy, perceived Risk for User Satisfaction, and intention to use internet banking, which will provide a broader picture of technology adoption issues of the banking sector. The following section describes scientific linkage among factors proposed for the new research model.

Perceived risk

The chances of losing any customers due to the pursuit of popular Internet Banking results can be regarded as the perceived risk PR (Featherman and Pavlou, 2003). Indeed, aspects related to perceived risk (Curran and Meuter, 2005; Kesharwani and Bisht, 2012; Namahoot and Laohavichien, 2018) have been widely regarded as crucial negative determinants of customers' intentions and the adoption of IB (Laukkanen et al., 2008; Baabdullah et al., 2016; Chauhan et al., 2019). Some interest in these factors may be due to the high volatility, instability, uncertainty, and ambiguity noted in the Internet Banking environment, and the lack of human communication (Al-Gahtani, 2011; Kesharwani and Bisht, 2012; Martins et al., 2014). Internet banking's information quality should contain

useful and updated information for the user. Weak information quality can frustrate the users' experience as the need to spend much effort in the search for information would affect the level of users' satisfaction. Thus, the hypothesis can be drawn:

H1: Perceived risk significantly influences BI.

Price value

Price is thought to be "the consumer's intellectual trade between the perceived benefits of the app and the financial costs of using it" (Venkatesh et al., 2012). Instead of an employee context where the concept of cost may be represented by time and effort, which is thought to be less than expected, financial costs represent an important role in shaping the customer's willingness to embrace and embrace new technologies (Mallat et al., 2008; Venkatesh et al., 2012). In addition, "based on marketing literature, fair value is often determined by how the customer compares it by understanding how much it should pay instead of services and quality achieved" (Dodds et al., 1991). Therefore, "if the services, which the customer can obtain by obtaining a high-tech product, are higher than financial costs, the price will accurately predict the customer's intention to use the technology" (Venkatesh et al., 2012). In theory, "there are various studies in the relevant areas that address the impact of the limited price and the price point on the client's intention to use power channels" (Gerrard et al., 2006; Mohammed and Ward, 2006; Ho and Ko, 2008). Price value is positive when the perceived benefits of utilizing any system exceed its expenses. According to Chiang and Jang (2007), who demonstrated that user intentions are highly influenced by perceived price, the cost element plays an important role in user decision-making. Chan

et al. (2008) found that the acceptance of SMS (short message service), in Malaysia is attributed to its cheap cost relative to other internet channels. Several of IS studies have indicated a positive influence of Price value on user behavioral intentions (Arenas-Gaitán et al., 2015; Khan et al., 2018). The current study proposes that Price value will positively impact behavioral intentions to use internet banking in Malaysia. Therefore, the following hypothesis suggests:

H2: Price value significantly influences BI.

Performance expectancy

The degree of usage of any internet banking application to an extent where the consumers believe that their usage of online banking helps them in performing any banking task is known as Performance expectancy (Venkatesh et al., 2003). Morosan and DeFranco (2016) defined the term as effect on behavior of the customer who adopts E-banking. A few other scholars explain performance expectancy as the intentional behavior to adopt Internet banking (Sok Foon and Chan Yin Fah, 2011; Martins et al., 2014; Montazemi and Qahri-Saremi, 2015; Oliveira et al., 2016). According to Sharma et al. (2020), PE was positively associated with the behavioral intentions of bank customers. Taking the perspective of the consumers, they confirmed that the intentions of bank customers toward internet banking are dependent on performance expectancy. This research used PE as the antecedent of customers' behavioral intention to use mobile banking. Customers are more likely to adopt online banking if their performance increases as a result of utilizing the online system. The rise in performance is linked to how long-term customers feel about doing their transactions and managing their finances online. Therefore, the following hypothesis suggests:

By studying these models and studies, we derive the following hypothesis:

H3: Performance expectancy significantly influences BI.

Effort expectancy

The extent to which the user is comfortable to use and does not need much effort while using internet banking is defined as Effort expectancy. The ease in the use increases the chances of the adoption of the internet banking (Venkatesh et al., 2003). People, when believe that Internet Banking is effortless, can more easily adopt it (Chaouali et al., 2016). Earlier research has shown that effort expectancy has a substantial effect on behavioral intention to use online banking (Riffai et al., 2012; Martins et al., 2014; Rahi et al., 2018b). These findings indicate that the use of technology will improve performance, manage difficulties, and reduce the work required by customers who conduct online banking transactions. However, some research

showed that EE has no impacts on intention (Baptista and Oliveira, 2016; Khan et al., 2018). However, this research hypothesizes that EE will positively affect the behavioral intentions of bank customers in Malaysia. We, therefore, hypothesized that:

H4: Performance expectancy significantly influences BI.

Facilitating conditions

FC is another platform that drives Internet Banking users. FC is defined as “the degree to which a person believes that system utilization is supported by an organization and technological infrastructure” (Venkatesh et al., 2003). To access Internet Banking, you need to have internet, powerful internet resources (tablets, laptops, and PCs), the right software, and programming skills. To make full use of Internet Banking services, one must have some kind of skill, technology, and resources (Zhou et al., 2010; Tarhini et al., 2016). Therefore, in view of the support services and services available to customers, they will be strongly encouraged to use Internet Banking. Previous researchers found that FC has a positive relationship with usage behavior in multiple contexts. For example, McKenna et al. (2013) found the relationship in adoption of information services; Martins et al. (2014) found it in the adoption of internet banking. In the context of Malaysia, it is posited that FC will affect the behavioral intentions to use internet banking in Malaysia (Morosan and DeFranco, 2016; Tarhini et al., 2016). Therefore, it is hypothesized that:

H5: Facilitating conditions significantly influence BI.

Information quality

The D&M model has been used in several ISSM-related studies (Lee and Chung, 2009). The qualities of the information are measured by the output of the information systems and sources. The services used in the post-implementation phase such as the MB data format are affected by the need of the services required. Irrelevant, old fashioned, unreliable services can cost the credibility of the services but cause a distress among the users (Cheung et al., 2008; Zhou, 2011, 2013). Studies show that information Quality is a basic predictor of user satisfaction. Whether it is information quality or service quality, both are important (Ofori et al., 2017). It also ensures the continuity of the user to use the service. According to Sharma and Sharma (2019), information quality can be seen as the main factor that leads to satisfaction, as it affects behavioral beliefs that can lead to the intention to use internet banking (Ho et al., 2019). Jung et al. (2009) also said that the quality of the content can affect how the user feels about the site. Jung et al. (2009) highlighted that content quality may impact the user experience. Zhou (2013) said that if the information was not of high quality, users would

have to put in a lot of work to figure it out, which would make it harder for them to do their jobs. Gao and Waechter (2017) and Mezhuyev et al. (2018) found that online banking customers may be less satisfied if the information they get is not of high quality. We derived the following hypothesis:

H6: Information quality significantly influences SAT.

System quality

System quality as the Technical side in the IS model. DeLone and McLean (2003) described the nature of the framework as good elements of the data structure itself, data creation. Web banking structures have a variety of contrasting effects, including “small screens, a strong keypad, limited data transfer, and various barriers (Zwass, 2003; Chae and Kim, 2004; Zhou, 2011). The low quality of the framework will improve customer experience because online banking builds its complexity and is not able to fill customers’ needs (Petter and McLean, 2009). The quality of the online banking system has a significant impact on customer satisfaction (Cheong and Park, 2005; Koo et al., 2013). Bhattacharjee (2001) found that if the user experiences better system performance, it would lead to user satisfaction and continued usage, and *vice versa*. Based on the principles mentioned above, a better system quality may boost user satisfaction while compensating for online banking’s limited physical dimensions. We can derive the following hypothesis:

H7: System quality significantly influences SAT.

Service quality

The title in ISSM model Service Quality, Management quality, is seen as the type of management or support clients receive from an IS organization and employees who support the overall IT or clear IS (DeLone and McLean, 2003). In D&M, “management quality is a standard service provided by a co-op specialist”, and quotes (Petter et al., 2008), “the quality of emotionally supportive network clients entering the IS category and IT support staff” (e.g., responsiveness, reliability, speculation, special capacity, and empathy of employees). According to Ofori et al. (2017), providing greater support and ensuring customer satisfaction are widely regarded as the basic values that lead to sustainable use and service progress. In a financial business investigation, Marinkovic and Obradovic (2015) found that the quality of services significantly affected customer satisfaction and their impact on customer response (Ofori et al., 2017). The organization of internet banking professionals will provide comprehensive quality services linked to the smallest deviation in the financial business, which will significantly affect customer utilization and satisfaction. As a result, the service quality may be improved, which may

lead to customer satisfaction in terms of their connection with service personnel, and will also favorably affect their desire to use if their use issues are promptly addressed and handled efficiently. Hence, it is believed that focusing on the service quality of the internet banking system may boost user satisfaction and experience. Therefore, also on the side of this work (Lin et al., 2015; Humbani and Wiese, 2019), we derive the following hypothesis:

H8: Service quality significantly influences SAT.

Satisfaction

Customer satisfaction is expected to be the major difference between service perceptions and UTAUT features (Tarhini et al., 2016). According to Li and Suomi (Li and Suomi, 2009), the level of customer satisfaction at Internet Banking has a strong relationship with how the Internet Banking service meets banking standards. Starting with the best product and delivering the product differently will create recurring customers, increase traffic to the related company site, and encourage new users who may be starting to use the product (Li and Suomi, 2009). Similarly, Hoehle et al. (2012) noted that practical assistance, expected assurance, and continuous purpose have a significant impact on customer satisfaction. Therefore, a better quality service can increase the level of customer satisfaction. Furthermore, Banerjee and Sah (2012) said clients who are generally happy with the digital financial help have all the earmarks of being faithful to the assistance and utilize the assistance again later on. The more clients are happy with their Internet Banking, the more extended the relationship they have with these administrations, the more dependable they are in these administrations, and, subsequently, the more they can collaborate as they utilize these administrations (Al-alak, 2014; Levy, 2014; Al-Sharafi et al., 2021). On which Tam and Oliveira (2016) and Albanna et al. (2022) further built the positive connection between user satisfaction and intention to use internet banking services, and they advanced the knowledge base by stressing upon user satisfaction as the outcome of the overall quality provided by the service provider in the context of internet banking. Therefore, we derive the following hypotheses:

H9: Satisfaction significantly influences BI.

H10: Satisfaction significantly influences AIB.

Behavioral intention to use internet banking

Petter et al. (2013) defined “The intention of Use, or the users’ belief about their potential to use IS”. Moreover, Petter

and McLean (2009) have described the “intention of Using the Expected Use of IS or Outputs”. Many studies have indicated that Intention to Use as is the user’s attitude toward IS (Petter et al., 2013). Aladwani (2002) said that customers in some countries do not think Internet banking is very important. They think ATMs and internet banking are more important than other ways of banking. Customers’ use of internet banking requires acceptance of the technology, which can be complicated because it involves the changing of behavioral patterns and developing a familiarity with both the technology and the financial services (Tsai et al., 2014). Behavioral intention is a measure of one’s intention to perform a specific behavior (Montazemi and Qahri-Saremi, 2015). The Internet requires the adoption of technology, which can be difficult because it involves changing patterns of behavior and adapting to both technology and financial services (Tarhini et al., 2016; Yuan et al., 2019; Alkhowaiter, 2020). In the previous studies, it has been proved that intentional behavior is related to actual behavior (Stewart and Segars, 2002). In the discussion of internet banking, it is thought that a person with good intentions to acquire or use will use Internet Banking services more or less often (Lin et al., 2015). The following hypothesis is proposed.

H10: BI significantly influences AIB.

Materials and methods

Design of the study

This survey study aims at reporting findings on the strength of quality assurance in medical education. The study included one primary endogenous construct, namely, adoption of internet banking. The proposed model shown in Figure 1 consists of ten constructs, namely, Information Quality (IQ), Service Quality (SEQ), System Quality (SQ), Facilitating conditions (FC), Performance expectancy (PE), Price value (PV), and Perceived risk (PR), satisfaction (SAT), Behavioral intention to use internet banking (BI), and adoption of internet banking (AIB). Ten different paths were suggested for each of the six constructs; four different paths were proposed for Facilitating conditions, Performance expectancy, Price value, and Perceived risk hypothesized to significantly predict Behavioral intention to use internet banking. Moreover, three path lines were proposed for Information Quality, Service Quality, System Quality, hypothesized to significantly predict satisfaction; and, also, one line of satisfaction was developed, hypothesized to strongly predict behavioral intention to use online banking. Meanwhile, it was hypothesized that satisfaction and behavioral intention to use online banking were predicted of internet banking adoption (AIB) (Figure 1).

Sample characteristics

Nearly 380 questions were distributed, of which 362 were returned by the respondents, indicating a 95.2% return rate. These question papers were examined in person, and 18 questions were incomplete. Hence, they had to be excluded. The rest of 362 questionnaires were submitted to SPSS. From 362 of the questionnaires, 257 (71.0%) were answered by male; and 105 (11%) were answered by female respondents. From this study, 40 (30.4%) were between the ages of 18 and 22, 108 (29.8%) were between the ages of 23 and 28, 146 (40.3%) were between 29 years old and 34 years, 56 (15.5%) were between 35 and 40 years, and 12 (3.3%) were over 40 years. Table 1 has depicted the majority of the respondents were male (71.0%). The respondents are mostly Malay (177 respondents or 48.9 percent). In terms of revenue, majority of the respondents (92.1%) were from the income group of RM 2,000–2,999 per month, which suggests that the majority of respondents were probably middle-income government servants. The table also shows that almost half of the respondents used ATM (50.8%), and, out of this, 49.2% of them are using Maybank accounts.

Instrumentation

All data obtained were assessed using a 5-point Likert scale, which includes features of the ISSM model, and UTAUT variables, demographics. The questionnaire was physically distributed, and all the respondents were required to answer it manually on papers, so an accurate collection of data could be obtained. Collected data were tested with IBM SPSS, as well as Structural Equation Modeling (Smart-PLS). IBM SPSS and Smart-PLS 3.3.3 are considered the main mathematical method used in our two-phase study; the first phase followed the construction of the suitability of the steps, the suitability of the flexible steps, the bias of the measurement suitability, and the second phase investigated the model of the structure. This approach is suggested by Alzahrani et al. (2012) and Hair et al. (2019).

Therefore, it can be argued that the above factors (Samar and Mazuri, 2019; Raza et al., 2020; Alarifi and Husain, 2021) increase customer service in banks with satisfaction and purpose of using Internet Banking and, respectively, to improve Internet Banking acceptance (Alalwan et al., 2018). The estimated risk factor was rated five (5) items, and each was accepted from Featherman and Pavlou (2003), Janahi (2013) and Sharma et al. (2020); and price value in five (5) items received from (Alalwan et al., 2018). Switched to auxiliary conditions and an expected operating time count to five items (5) factors considered from Rahi et al. (2019), Samar and Mazuri (2019), and Sharma et al. (2020). Service quality, and System Quality were also considered in more than five (5) items and followed from Tam and Oliveira (2016), Rahi et al. (2019), and Samar and Mazuri (2019). In

TABLE 1 Respondents' demographic profile.

Demographic	Discription	N	%	Cumulative %
Gender	Male	257	71.0	71.0
	Female	105	29.0	100.0
Age	18–22	40	11.0	11.0
	23–28	108	29.8	40.9
	29–34	146	40.3	81.2
	35–40	56	15.5	96.7
	41 and above	12	3.3	100.0
Ethnicity	Malay	177	48.9	48.9
	Chinese	108	29.8	78.7
	Indian	54	14.9	93.6
	Others	23	6.4	100.0
Income (RM)	<1,000	7	1.9	100.0
	1,000–1,999	30	8.3	98.1
	2,000–2,999	273	75.4	75.4
	≥3,000	52	14.4	89.8
Access Internet	Home	330	91.2	100.0
	School	24	6.6	8.8
	Office	4	1.1	2.2
	Others	4	1.1	1.1
Internet usage monthly	A few times a day	161	44.5	44.5
	Daily	176	48.6	93.1
	A few times a day	12	3.3	96.4
	Never	2	0.6	97.0
	A few times a month	11	3.0	100.0
Banks used	Maybank	178	49.2	56.6
	Bank Muamalat	61	16.9	73.5
	CIMB bank	96	26.5	100.0
	Others	27	7.5	7.5
Use of ATM	Daily	27	7.5	7.5
	A few times a month	184	50.8	58.3
	At least once a month	65	18.0	76.2
	A few times a week	86	23.8	100.0

addition, the behavioral intention of using Internet Banking equipment is measured by five options specifically (Rahi et al., 2019; Sharma et al., 2020); Satisfaction factor was assessed over five (5) items suggested by Tam and Oliveira (2016) and Sharma et al. (2020); Finally, Adoption of internet banking was measured through five (5) items suggested by Janahi (2013), Rahi et al. (2019), and Sudarsono et al. (2020); see Appendix A.

Data collection and analysis

For the purpose of the study, we distributed 380 questionnaires, of which 362 were returned back by the respondents. After the manual analysis of the questionnaires, 18

of the 380 questionnaires were incomplete, i.e., the customers did not finish the survey; thus, they had to be excluded. Thus, the number of questionnaire that can be considered is 362. Such exclusions were recommended by Arteaga Sánchez et al. (2014), who related that outliers could lead to inaccurate statistical results and should be eliminated. The chosen research model comprised internet banking users as its sample, and their behavioral intention to use internet banking and customer satisfaction were also examined. Data were collected from randomly selected local and international customers of Malaysian Bank from various states: Johor Bharu, Perak, Malacca, Selangor, and Negeri Sembilan. Based on that, the sample size of this study ($N = 362$) is acceptable according to Hair et al. (2012); they stated the minimum sample size

for quantitative research is ($N = 354$). For data analysis, procedures “(PLS-SEM)” were used. In this review, the Smart PLS 3.3.3 framework was used to test the scope and models of the design. Information accuracy and reliability are measured within your calculations in the measurement model: ≥ 0.500 . The Fornell–Larcker criteria, crossloading, and heterotrait–monotrait ratio computation approaches were used to assess discriminant validity (HTMT). The Cronbach’s alpha and composite steadfastness (CR) were two types of instability; the two attributes should be significantly higher than the 0.700. For the assessment model, we reported the significance of the relationship through path coefficient, t -value, and p -value.

Results

Model of measurement

Hair et al. (2019) advocated for four types of measurement model evaluations for PLSSSEM: reflective indicator loadings, discriminant validity, convergent validity, and internal consistency reliability.

Reflective indicator loadings

The reflective indicator loadings accomplished in SEM ought to be >0.700 (Hair et al., 2019). From the calculation, all loadings were higher than 0.700. The most noteworthy stacking was accomplished by Performance anticipation, PEX_2 (0.906), while the least stacking alluded to Perceived risk, PR_1 (0.710). After the process of indicators, thirty-four pointers were incorporated for the following information examination process (Table 2).

Internal consistency reliability

CR was carried out to assess the outcomes consistency of results across indicators. In the present methodology, Cronbach’s alpha and composite dependability (CR) were accounted for. Cronbach’s alpha and CR values ought to be more noteworthy than 0.700 (Hair et al., 2019; Muhaimin et al., 2020). Table 2 presents the reports of Cronbach’s alpha and CR. The Cronbach’s alpha and the CR values for all builds are adequate, surpassing the suggested sum. Perceived risk had a Cronbach’s alpha of 0.852 and CR of 0.913, while Price value had an alpha of 0.916 and CR of 0.937. Moreover, Performance expectancy obtained an alpha of 0.735 and CR of 0.950; and also, facilitating conditions had an alpha of 0.913 and CR of 0.935. Additionally, Information quality had a Cronbach’s alpha of 0.910 and CR of 0.933, while system quality obtained an alpha of 0.919 and CR of 0.939. Furthermore, Service quality had an alpha of 0.901 and CR of 0.926. Customer satisfaction obtained an alpha of 0.908 and CR of 0.932. Likewise, Behavioral intention to use internet banking had an alpha of 0.913 and CR of 0.935. Finally, adoption

of internet banking (AIB) obtained an alpha of 0.871 and CR of 0.907.

Convergent validity

Convergent validity is defined as a topic related to construct validity; experiments with similar or similar structures should be closely related (Hair et al., 2019). The appropriateness of the combination in this study was reported by average variance extracted (AVE). We used Smart-PLS 3.3.3 to calculate AVE (Hair et al., 2019). By algorithm, the AVE values should be 0.500 or more, defining 50% or more of variance (Table 2). From the calculation, all developers received AVE values higher than the 0.500 variance (see Table 2).

Discriminant validity

The Validity of discrimination is the degree to which construction differs strongly from other structures. Three methods were used in this study to assess discriminant validity, namely, Fornell-Larcker criterion, cross-loadings, and HTMT. According to Fornell-Larcker, the shared construction variance should be smaller than the AVE of others (Fornell and Larcker, 1981). Table 3 shows that the values of each variant are smaller than the construct. For example, the Perceived risk value (0.792) is greater than all the variance shared; Information Quality (0.050), Facilitating Conditions (0.033), Behavioral intention to use internet banking (0.040), and Adoption of internet banking (0.057). Discriminant validity was established based on the Fornell-Larcker criterion. Discriminant validity occurs when the index uploaded to a building is larger than its cross-loadings (Hair et al., 2019).

Discriminant validity will also appear when the HTMT is higher than 0.900. HTMT above 0.900 refers to a lack of discriminant validity (Hair et al., 2019). As shown in Table 3, all HTMTs are <0.900 and vary substantially from one; hence, HTMT examination supported discriminant validity. The higher HTMT value exists between Information Quality (IQ) and Adoption of internet banking (AIB) (0.881), while the lowest HTMT emerges on the path between Satisfaction and Perceived risk (0.053). The other HTMT values that resulted from the computation are Behavioral intention to use internet banking and Adoption of internet banking (0.868), Performance expectancy and Facilitating conditions (0.722), System Quality and Service Quality (0.797). Table 3 provides a more detailed explanation of the HTMT values.

Structural model

Collinearity

Basic model testing also included advanced model skills testing. However, “before providing details of the main model,

TABLE 2 Reflective indicator loadings, internal consistency reliability, and convergent validity.

Construct	Items	Load	Alpha	CR	AVE	Construct	Items	Load	Alpha	CR	AVE
Perceived risk	PR_1	0.710	0.852	0.893	0.628	Service quality	SEQ_1	0.810	0.901	0.926	0.716
	PR_2	0.796					SEQ_2	0.869			
	PR_3	0.853					SEQ_3	0.862			
	PR_4	0.856					SEQ_4	0.864			
	PR_5	0.735					SEQ_5	0.823			
Price value	PV_1	0.845	0.916	0.937	0.748	System quality	SQ_1	0.838	0.919	0.939	0.755
	PV_2	0.881					SQ_2	0.897			
	PV_3	0.879					SQ_3	0.879			
	PV_4	0.881					SQ_4	0.888			
	PV_5	0.837					SQ_5	0.841			
Facilitating conditions	FC_1	0.867	0.913	0.935	0.742	Behavioral intention to use internet banking	BI_1	0.856	0.913	0.935	0.743
	FC_2	0.849					BI_2	0.865			
	FC_3	0.888					BI_3	0.873			
	FC_4	0.873					BI_4	0.873			
	FC_5	0.830					BI_5	0.841			
Performance expectancy	PEX_1	0.887	0.935	0.950	0.793	Satisfaction	SAT_1	0.887	0.908	0.932	0.733
	PEX_2	0.906					SAT_2	0.790			
	PEX_3	0.902					SAT_3	0.875			
	PEX_4	0.868					SAT_4	0.873			
	PEX_5	0.889					SAT_5	0.853			
Information quality	IQ_1	0.734	0.910	0.933	0.738	Adoption of internet banking	AIB_1	0.793	0.871	0.907	0.660
	IQ_2	0.883					AIB_2	0.745			
	IQ_3	0.901					AIB_3	0.850			
	IQ_4	0.898					AIB_4	0.852			
	IQ_5	0.868					AIB_5	0.817			

the importance of collinearity should be noted by announcing the values to change the expansion factor” (VIF). Notably, the indexing was assessed for collinearity (Hair et al., 2019); Facilitating conditions, perceived risk, Performance expectancy, Price value, and Satisfaction are the predictors of Behavioral intention to use internet banking (Table 4). “VIF values must be <3; more than three attributes are generally considered to be multiple problems. From the results of the data test, all VIFs are <3. Satisfaction as a predictor of the Behavioral intention to use internet banking obtained a VIF value of 2.930, and Adoption internet banking had a VIF value of 2.103, respectively (Table 4). Therefore, collinearity is not an issue for the model of this study.

Structural model

For the structural model, the significance of all direct effects or hypotheses was assessed by examining the path coefficients, t -value, and p -value. We computed the data through a bootstrapping procedure with 5,000 resamples. The results of the bootstrapping computation are presented in Table 5 and

Figure 2; Table 5 informs the hypotheses, relationship, path, t -value, and p -value, while Figure 2 presents the loading value of the path lines within the bootstrapping procedure. Table 5 illustrates the bootstrapping procedure’s t -value and loading value for the path lines. The path from Satisfaction \rightarrow Adoption in online banking had the greatest t -value ($\beta = 0.165$; $t = 9.811$), while the lowest value was the relationship between Perceived risk \rightarrow Behavioral intention to use internet banking ($\beta = 0.003$; $t = 0.082$).

All hypotheses proposed in this study were supported, and only one was rejected, which is “no perceived risks between male and female customers” that were found for Behavioral intention in using internet banking. In details, H1 Perceived risk was shown to have no effects on behavioral intention in utilizing online banking ($\beta = -0.003$; $t = 0.082$). H2 was also supported where price value is significantly affected by behavioral intention of customers to use internet banking ($\beta = 0.324$; $t = 5.340$; $p < 0.001$). Similarly, the significant role of Facilitating conditions to Behavioral intention to use internet banking (H3) was also reported ($\beta = 0.187$; $t = 2.576$; $p <$

TABLE 3 Fornell-Larcker criterion (FLC) and (HTMT) for discriminant validity (HTMT < 0.900).

	AIB	BI	FC	IQ	PR	PEX	PV	SAT	SEQ	SQ
Adoption internet banking.	FLC									
	0.813									
HTMT										
Behavioral intention to use internet banking	FLC	FLC								
	0.776	0.862								
HTMT	0.868									
Facilitating conditions	FLC	FLC	FLC							
	0.753	0.717	0.862							
HTMT	0.844	0.783								
Information Quality	FLC	FLC	FLC	FLC						
	0.788	0.728	0.727	0.859						
HTMT	0.881	0.801	0.794							
Perceived risk	FLC	FLC	FLC	FLC	FLC					
	0.057	0.040	0.033	0.050	0.792					
HTMT	0.076	0.045	0.044	0.064						
Performance expectancy	FLC	FLC	FLC	FLC	FLC	FLC				
	0.729	0.693	0.669	0.641	0.043	0.891				
HTMT	0.809	0.748	0.722	0.700	0.054					
Price value	FLC	FLC	FLC	FLC	FLC	FLC	FLC			
	0.625	0.741	0.713	0.757	0.068	0.666	0.865			
HTMT	0.832	0.808	0.778	0.825	0.083	0.718				
Satisfaction	FLC	FLC	FLC	FLC	FLC	FLC	FLC	FLC		
	0.778	0.724	0.832	0.698	0.025	0.674	0.744	0.856		
HTMT	0.775	0.794	0.813	0.765	0.053	0.731	0.815			
Service quality	FLC	FLC	FLC	FLC	FLC	FLC	FLC	FLC	FLC	
	0.770	0.797	0.747	0.758	0.047	0.686	0.763	0.714	0.846	
HTMT	0.867	0.876	0.821	0.832	0.060	0.747	0.837	0.786		
System quality	FLC	FLC	FLC	FLC	FLC	FLC	FLC	FLC	FLC	FLC
	0.783	0.726	0.711	0.714	0.058	0.775	0.767	0.715	0.727	0.869
	0.875	0.792	0.776	0.783	0.067	0.835	0.836	0.782	0.797	

0.001). Performance expectancy is also a significant predictor for Behavioral intention to use internet banking, H4 ($\beta = 0.241$; $t = 4.008$; $p < 0.001$). This finding agrees with the previous studies (Samar and Mazuri, 2019; Alkhowaiter, 2020; Raza et al., 2020; Sharma et al., 2020). The result of PLS-SEM results supports H5 because there is a significant direct effect of Information Quality on Satisfaction ($\beta = 0.241$; $t = 4.021$; $p < 0.001$). Additionally, H6 is also supported as Service Quality is significantly predicted by Satisfaction ($\beta = 0.290$; $t = 5.453$; $p < 0.001$). As mentioned in Table 5, System Quality (H7) was positively and significantly related to Satisfaction for adoption of internet banking ($\beta = 0.331$; $t = 5.563$; $p < 0.001$). Furthermore, the mediation consumers' satisfaction (H8) shows a substantial and positive relationship with behavioral intention to utilize online banking ($\beta = 0.165$; $t = 2.126$; $p < 0.001$). Similarly, the significant role of Satisfaction to Adoption internet banking (H9) was also reported ($\beta = 0.456$; $t = 9.811$; $p < 0.001$). Finally,

the findings also support Hypothesis 10. Positive correlations emerged between Behavioral intention to use internet banking and Adoption internet banking ($\beta = 0.445$; $t = 9.854$; $p < 0.001$). This result confirms prior studies (Tam and Oliveira, 2016; Jaafreh, 2017; Alalwan et al., 2018; Saadilah et al., 2021).

Discussion

The results of our research provide insight into customers' adoption to internet banking and relationships of some aspects, such as "Information Quality (IQ), Service Quality (SEQ), System Quality (SQ), facilitating conditions (FC), Performance expectancy (PE), Price (PV), and Perceived risk (PR), Satisfaction (SAT) toward clients' behavioral intention in using Internet Banking (IB). The acceptance of Internet Banking dictates customers' satisfactions and behavioral intentions to

TABLE 4 Variance inflation factor (VIF < 3).

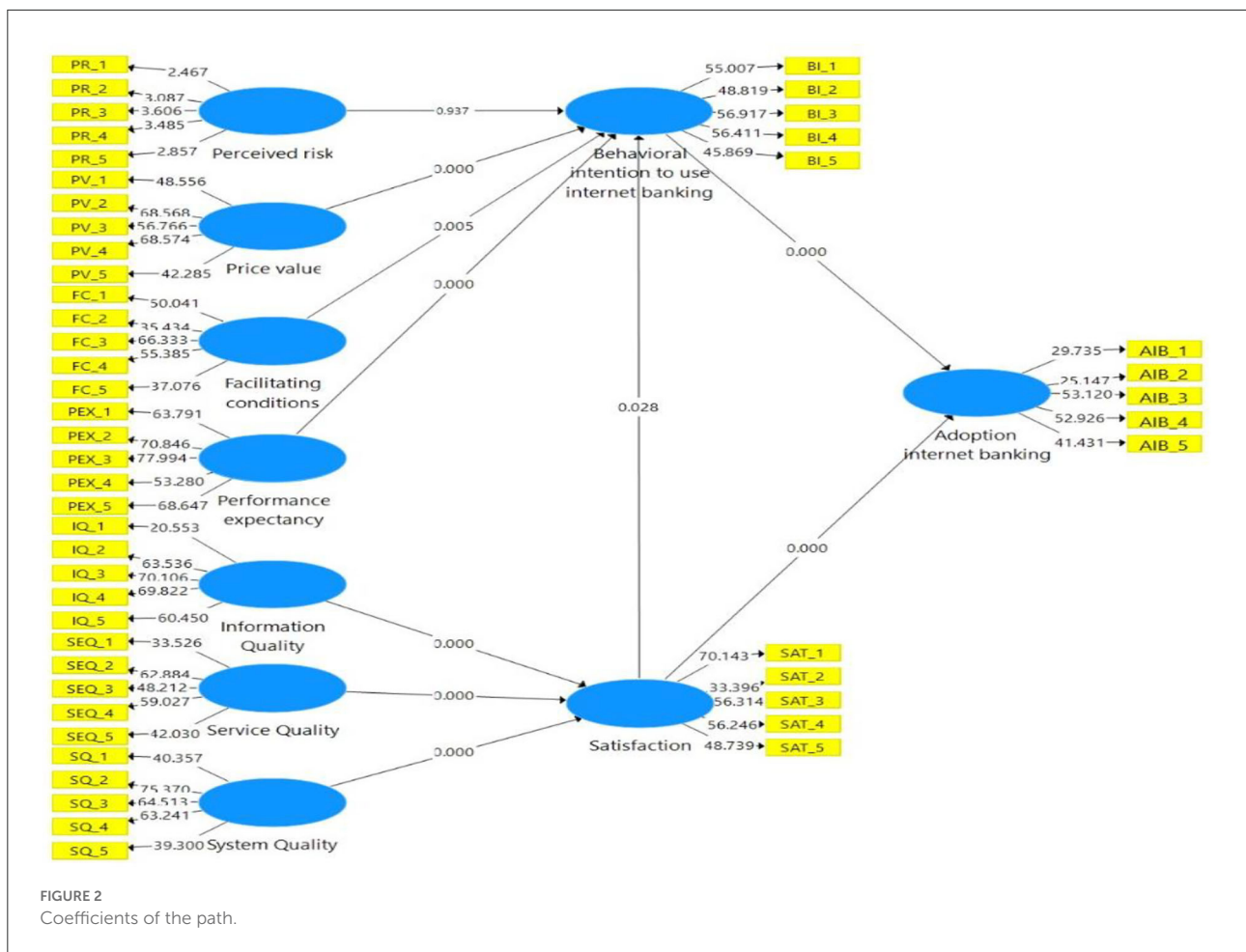
	AIB	BI	FC	IQ	PR	PEX	PV	SAT	SEQ	SQ
Adoption internet banking										
Behavioral intention to use internet banking	2.103									
Facilitating conditions		2.605								
Information Quality								2.711		
Perceived risk		1.006								
Performance expectancy		2.143								
Price value		2.617								
Satisfaction	2.103	2.930								
Service quality								2.814		
System quality								2.446		

TABLE 5 Relationships for hypotheses.

H	Relationships	Path (β)	T-value	P-values	Results
H1	Perceived risk -> Behavioral intention to use internet banking	-0.003	0.082	0.935	Rejected
H2	Price value -> Behavioral intention to use internet banking	0.324	5.340	0.000	Accepted
H3	Facilitating conditions -> Behavioral intention to use internet banking	0.187	2.576	0.010	Accepted
H4	Performance expectancy -> Behavioral intention to use internet banking	0.241	4.008	0.000	Accepted
H5	Information Quality -> Satisfaction	0.241	4.021	0.000	Accepted
H6	Service Quality -> Satisfaction	0.290	5.453	0.000	Accepted
H7	System Quality -> Satisfaction	0.331	5.563	0.000	Accepted
H8	Satisfaction -> Behavioral intention to use internet banking	0.165	2.126	0.034	Accepted
H9	Satisfaction -> Adoption internet banking	0.456	9.811	0.000	Accepted
H10	Behavioral intention to use internet banking -> Adoption internet banking	0.445	9.854	0.000	Accepted

use Internet Banking. Based on the results and conclusions of this research, an “Internet Banking” approval may result in the development of a good or relevant status qualification for Information Quality (IQ), Service Quality (SEQ), System Quality (SQ) for customers’ satisfaction, and, also, facilitating conditions, Performance expectancy, Price value, and Perceived risk for the Behavioral intention to use internet banking. This enhances customer adoption of internet banking by accessing valuable services from their peers. Reasonably, empirical evidence recommended that customers required additional support in using internet banking in order to access services (Alalwan et al., 2018; Merhi et al., 2019; Malaquias and Silva, 2020). This also applies to the relationship between stakeholders and customers, where Internet Banking allows for specific instructions as well as information quality and service quality.

The effect of perceived risk (H1) on behavioral intention to use of internet banking in this study was not-significant. This result may be explained by the relatively low use of internet banking among Malaysians. The findings in this study argue that the intrinsic dimension of perceived risks has no positive impact on shaping an individual behavioral intention to use Internet banking services. It means that, when a customer has not high perceived risks (i.e., the more they perceive themselves to be able to effectively navigate computers and computer-related technology), the less they will be prone to make errors and mistakes. Hence, the chances of those individuals accepting Internet banking services are not high. However, the findings are different in terms of the order and number of perceived risk from Martins et al. (2014), Sobti (2019), and Kaur and Arora (2021), who identified perceived risk types that were salient in affecting the behavioral intentions to use the IB in



Portugal. Moreover, price value (H2) was confirmed to be a significant factor determining behavioral intention to adopt IB. It was demonstrated that Malaysian customers are more concerned about the cost values in deciding to use or reject Internet banking. To put differently, respondents seem to be more inspired to use the IB if the provided utilities are worth the paid cost. These results are in line with what has been proved by prior studies, addressing the important role of price and perceived value (Lee, 2002; Gerrard et al., 2006; Mohammed and Ward, 2006; Ho and Ko, 2008). With respect to the UTAUT model variables, the results showed that facilitating conditions and performance expectancy (H3 and H4) have a significant positive effect on the behavioral intention to use internet banking. This result corresponds to the original theoretical foundation of the UTAUT model (Venkatesh et al., 2003). This result is as expected, because, when customers perceive that internet banking is useful to them, their intention to use the adoption of internet banking increases. When customers perceive that an internet banking interface is user-friendly, simple, and easy to use, this increases the customers' behavioral intention to use internet banking. Many studies examined the effect of facilitating conditions and performance expectancy on

the behavioral intention to use internet banking (Arenas-Gaitán et al., 2015; Alalwan et al., 2018; Sharma et al., 2020). Based on results, we confirmed that information, system quality, and service quality had a significant influence on the satisfaction of internet banking, and these findings are consistent with Rahi and Abd.Ghani (2019). Therefore, findings revealed that information, system quality, and service quality (H5, H6, H7) are significantly influenced on customers' satisfaction. Many studies examined the effect of information, system quality, and service quality on the customers' satisfaction to use internet banking (Rahi and Abd.Ghani, 2019; Saadilah et al., 2021). Based on the findings of this research, the hypotheses (H8, H9, H10) suggest that customer customers' satisfaction and behavioral intention to use is a direct predictor of adoption of internet banking. Results confirmed that customers' satisfaction and behavioral intention to use internet banking (H8, H9, H10) significantly influence adoption of internet banking. These findings are in line with one researcher who reported that the purpose of use and satisfaction has a positive impact on customer Internet Banking (Tam and Oliveira, 2016; Sharma et al., 2020; Saadilah et al., 2021), as evidenced by the development of adult research skills and exchange of ideas between clients. Therefore, by proposing

a model such as the “Information System Success Model (ISSM) and the unified theory of acceptance and use of technology (UTAUT)”, this study contributes to the literature and also demonstrates a useful model to understand the following:

- Performance expectancies and facilitating conditions of internet banking may increase customers’ adoption of IB.
- Price values are the most perceived risk influences toward customers’ intention in utilizing IB. This simultaneously increases adoption of internet banking among stakeholders and customers.
- Information Quality, Service Quality, and System Quality also strongly influence the satisfaction of stakeholders and customers in using IB
- Development of a theater model, incorporated with other technologies, to improve IB for the purpose of customers’ satisfaction should be developed and used.

Theoretical implications

The seven dimensions of internet banking adoption, namely, perceived risk, price value, performance expectancy, facilitating conditions, service quality, information quality, and system quality were used as potential constructs that may influence customers’ satisfactions and behavioral intentions to use internet banking in Malaysia.

This study used two models, namely, ISSM and UTAUT models to measure and evaluate the findings. The major impacts and implications of this study are mentioned below:

- The ISSM model has been proved to be an ideal model for understanding Information Quality, Service Quality, and System Quality in improving customers’ satisfaction. The customer’s satisfaction subsequently could increase the customer’s adoption of internet banking.
- The UTAUT model has provided evidence that it is an appropriate model that helps to understand customers’ intention in accepting and using IB as the medium of banking.

Practical implications

This study has a number of practical implications for decision-makers in banking. The proposed research model and understanding of the interrelationships among multiple decision variables provide substantial information for decision-makers from the banking and telecommunication industry. The current study offers two perspectives; the ISSM and UTAUT model promotes a wide range of priorities to understand customer behavior in using IB and, also, customers’ satisfaction in order to increase their adoption of IB. In addition, test metrics and

steps are important factors in research or practice. Therefore, the online bank acceptance model developed in this study can be used in the practical evaluations of the Internet Banking designed with the aim to increase IB customer acceptance. At present, although some hypotheses of this study are not supported by any research theories, they were still significant to be used to quantify the various aspects of IB. Another important theater contribution of our research—we successfully figured out some information that might be useful to be used in fulfilling customers’ satisfactions and demands in using IB.

This study provides two lines of evidence: initial evidence of operational intent to be used in the context of motivation, expected operating time, price, and perceived risk. “The second strongest evidence of customer satisfaction is a method of Information Quality, Service Quality, System Quality that can improve customer acceptance in the context of an Internet Banking.” This is a major theoretical contribution to previous ISSM and UTAUT studies that have not seen the effect of customer satisfaction on the ethical purpose to be applied (Alalwan et al., 2018; Rahi et al., 2019, 2021; Geebren et al., 2021; Saadilah et al., 2021). The main conclusions that have been drawn from the study are:

- It is important to use IB to your satisfaction or for the purpose of using it to encourage customers’ acceptance of Internet Banking. One of the important components of IB is Internet. The use of Internet and its availability should be improved so that the system will be widely accessible to all consumers, regardless of wherever they are. The customer services may also help to support customers by appropriately answering customer queries and, at the same time, improving their information qualities and quality of services through which consumers can access information.
- Banks usually encourage their customers to register for IB. Therefore, banks may integrate all IB tools and materials needed during registration to ease the process.
- Aside from this, undeniably, costs are the main concern in using any types of services. Thus, banks may take initiative to ensure the costs needed to use their IB are low, or at least the utilities provided should be relevant with the cost paid.

Conclusion and future work

The results of this study prove that Information Quality (IQ), Service Quality (SEQ), and System Quality (SQ) are important aspects that need to be considered in satisfying customers toward their acceptance of IB. The findings also suggest that facilitating Conditions (FC), performance expectancy, price, and perceived risk of behavioral Internet Banking also ultimately affect the IB acceptance among consumers. Customers’ satisfactions have a positive impact on their behavioral intentions to use IB. Customers satisfaction

and intention to use via internet banking enhances the customers' activities, knowledge sharing, information quality, and facilitates discussion with stakeholders. Although this study has successfully presented good findings, it still has some drawbacks. The first one is the study is just restricted to Malaysia as it was carried out to the respondents in Malaysia. Hence, findings may be usable to be used only in the context of Malaysian local banks. Secondly, the questions used in this study were only limited to quantity based and did not include any questions that may contain quality types of data. Therefore, for the future study, it can be improvised by using a larger number of simple size by the engagements of respondents from other countries (can be divided into stages/groups, e.g., Southeast Asia, and so on). Other than that, we suggest that a "multidisciplinary approach (quantity and quality) could be used to provide more detail explanations of the results of current research, especially regarding those unrelated relationships. The models: ISSM and UTAUT also can still be upgraded in order to get better results. For example, incorporation of different expectations" (for example, practice, bank commonality) might expand the utilization of ISSM and UTAUT in an assortment of innovative settings.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

MAA, AA-R, and FA: conceptualization, methodology, resources, data curation, and project administration. MAA,

AA-R, WA-R, SA, and AL: software. AA-R and WA-R: validation. MAA, AA-R, ABA, and WA-R: formal analysis. AA-R: investigation. AA-R, WA-R, and SA: writing—original draft preparation and writing—review and editing. MAA, AA-R, WA-R, ABA, MA, and SA: visualization. AA-R, WA-R, and FA: supervision. All authors have read and agreed to the published version of the manuscript.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Appendix A: Measurement items adopted

Factors	Code	Items
Perceived risk	PR1	Internet banking might not perform well and create problems with my credit
	PR2	If I use Internet banking, it will negatively affect the way others think of me.
	PR3	My signing up for and using Internet banking would lead to a social loss for me because my friends and relatives would think less highly of me.
	PR4	PR4 I think that Internet banking will not fit in well with my self-image or self-concept,
	PR5	The security systems built into the Internet banking system are not strong enough to protect my checking account
Price value	PV1	Internet banking is reasonably priced.
	PV2	Internet banking is a good value for the money.
	PV3	At the current price, internet banking provides a good value.
	PV4	
	PV5	
Facilitating conditions	FC1	I have the resources necessary to use the internet banking.
	FC2	I have the knowledge necessary to use the internet banking.
	FC3	Internet banking is compatible with other technologies I use.
	FC4	A specific person is available for assistance of internet banking difficulties.
	FC5	I can get help from others when I have difficulties using Internet banking
Performance expectancy	PEX1	Internet banking services would be useful for me to complete my tasks.
	PEX2	Internet banking services would allow me to complete my tasks more quickly.
	PEX3	Using internet banking would increase my productivity levels.
	PEX4	Using internet banking would improve my performance.
	PEX5	It would be easy for me to become skillful at using internet banking.
Information quality	IQ1	The information provided by Internet banking is useful.
	IQ2	The information provided by Internet banking is understandable.
	IQ3	The information provided by Internet banking is interesting
	IQ4	The information provided by Internet banking is reliable.
	IQ5	The information provided by Internet banking is up-to-date
Service Quality	SEQ1	The responsible service personnel are always highly willing to help whenever I need support with the Internet banking.
	SEQ2	The responsible service personnel provide personal attention when I experience problems with the Internet banking.
	SEQ3	The responsible service personnel provide services related to the Internet banking at the promised time
	SEQ4	The responsible service personnel have sufficient knowledge to answer my questions regarding the Internet banking.
	SEQ5	the Service Quality provided by Internet banking is complete
System Quality	SQ1	Internet banking is easy to use.
	SQ2	Internet banking offers appropriate functionality.
	SQ3	Internet banking offers comfortable access to all the business applications.
	SQ4	Internet banking is easy to navigate.
	SQ5	Internet banking is well-structured.
Behavioral intention to use	BI 1	Intend to use internet banking in the next months
	BI 2	I foresee I will use internet banking in the next months.
	BI 3	I plan to use the internet banking system in coming months.
	BI 4	I intend to check my account balance <i>via</i> internet banking.
	BI 5	I intend to transfer money on the internet banking platform.
User satisfaction	SAT1	I am satisfied with my previous internet banking experience.
	SAT2	Internet Banking is a pleasant experience.
	SAT3	I am content with the overall experience of using internet banking.
	SAT4	I am delighted with the overall experience of using internet banking.
	SAT5	I am pleased with the overall experience of using internet banking.
Adoption internet banking	AIB1	I intend to continue using Internet banking in the future.
	AIB2	I will always try to use Internet banking in my daily life.
	AIB3	I will encourage my friends and family to use internet banking service.
	AIB4	I often use internet banking to manage my account.
	AIB5	I often use internet banking to make payments.