

Risks in Internet Banking Adoption; A Case of Emerging Economy

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Abstract: The present research sought to assess the perceived performance, time, and financial hazards of Internet Banking (IB) adoption in Pakistan. A systematic questionnaire was used to obtain data on the resistance individuals have to IB adoption from 500 internet banking customers. The structural equation modelling approach was used in this work to investigate the connection between exogenous and endogenous factors. An approach for examining the influence of social and privacy hazards on online banking uptake. The Cronbach's alpha values for all variables were within the acceptable range, according to the reliability analysis. The study's findings suggest that all factors have a strong negative relationship with IB adoption. Further The findings also highlighted that end-user are hesitant to embrace IB because they believe that tiny errors may result in big losses when using the new IB system.

Keywords: Internet Banking, Adoption, Privacy risk, Social, Pakistan

Introduction

Internet banking (IB) is the use of the internet as a channel of delivery for the banking industry, which includes traditional services such as fund transfer, balance inquiry, printing services, and new services such as electronic bill payment and presentation without the need to visit a bank (Frustr, Lang, & Nolle, 2000; Chan 2004). The rapid growth and popularity of the internet creates new opportunities and threats for organizations in a variety of industries, as it changes the way businesses operate traditionally and encourages them to shape delivery of their products and services through the internet as a

distribution channel (Mukherjee & Nath 2003). Researchers have endorsed the significance of the internet for financial institutions more than other sectors (Tan & Teo, 2000; Chau & Lai, 2003).

The core of internet banking involves cost reduction by lowering operational expenses, revenue growth via value addition and non-financial services, performance improvement by making services available around the clock, and end-user comfort through updated service offerings (Martins et al., 2014). Internet banking, on the other hand, provides a handy way for users to manage their funds from anywhere (Amit, 2013). The number of IB users worldwide has increased significantly in recent years. However, the quantity of online banking transactions continues to be minimal (Roy & Sekhon 2016). It is articulated that end-users either do not embrace internet banking or do not utilize it continually after adoption.

Perceived risk theory describes a lack of confidence in a product or service due to prospective drawbacks that may influence the purchase of this product (Littler et al., 2006). Using this theory, several scholars have characterised perceived risk theory as a synthesis of various levels. These dimensions include social, physical, performance, security, financial, psychological, and privacy threats (Jacoby & Kaplan, 1972; Kaplan, Szybillo, & Jacoby, 1974; Roselius, 1971). Perceived-risk theory was utilized as a basic notion in this study.

According to the payment system review report, published in March of the fiscal year, 2020 by State Bank of Pakistan (SBP) registered internet banking users are up from 1.8 to 3.8 million in 2015-2020 third quarter with a growth of 47.4% (SBP, 2020). Although this increase in internet banking users is lower than other Asian economies, (Bashir & Madhavaiah 2015). Besides this, Pakistan yet retains the potential to increase its number in a couple of years.

It is advised that financial organisations, especially banks, conduct regular consumer demand surveys in order to comply with issues that discourage end-users from using online banking (Podder 2005). Previously, academic literatures have highlighted several factors such as trust, satisfaction, innovation, and security, customer loyalty, brand image, website design, etc. parallel to internet adoption studies. (Raza and Hanif, 2013; Rahi et al. 2019). However, no one yet conclusively draws a pattern on IB adoption in the case of Pakistan. Therefore, this study was proposed to measure the significant effect of performance, financial and time, risks on the internet banking adoption in Pakistan.

Literature Review

Internet banking is quite vital for banking industry to sustain itself in the market (Burnham, 1996). It is predicted that internet banking sector will grow at a huge pace (Liao et al., 1999; Duclaux, 1996). Arthur (2000) investigated that more than 50% of the customers, firstly contact their first bank to inquire about a new product or service. Therefore, if it is properly allied, online banking offers an extraordinary facility to perform shopper requests, cross banking facility, buys online products and enhances the banks' unassertive location (Currie, 1999; Lam & Burton, 2005).

In parallel, the development of e-commerce has provided a platform to offer greater opportunities for retailers, manufacturers, and other stakeholders. It is indicated that internet technology has become the source of competition (Crespo, Del Bosque, & de los Salmones Sánchez, 2009). The technology adoption has not only provided multiple benefits to stakeholders but at the same time, there are also challenges created by this technology adoption. Internet banking adoption discloses studies in three groups; descriptive, comparative, and relational. These group research studies describe an attitude and attributes regarding internet banking adopters, appealing features and obstacles that lead to adoption. Sathye (1999) pioneer to study internet banking adoption, reveals that the absence of consciousness

about internet banking adoption; unreasonable prices as well as security concerns are elements for non-adoption in the Australian banking sector.

Technology Acceptance Model (TAM) focus on new technology for developing a good usage behavior. This theory pays special attention to the analysis of the potential beliefs of the customers which lead to impact individuals' intentions and attitudes (Davis, Bagozzi, & Warshaw, 1989). It based on two beliefs fundamentally: perceived ease of use and perceived usefulness. TAM following the Theory of Reasoned Actions, states that the use of computer innovation is determined by behavioral intentions, and two direct determinants of intentions of consumers: perceived usefulness and attitude toward a particular technology. (Ariff, Sylvester, Zakuan, Ismail, & Ali, 2014; Hassan, Kunz, Pearson, & Mohamed, 2006). Consumer perceived risk has been analyzed from various diverse perspectives. As per the classical theory of decision conceives, consumer perceived risk is recognized as the variable to be formed from two factors including importance attributed toward potential losses, and probability of loss for some particular consequences (San Martín & Camarero, 2009). Consumer perceived risk regarding e-commerce adoption is attributed to the elements of transaction frequency, intention to shop in the future, attitude toward a particular service delivery channel, and/or e-commerce adoption. It is stated that potential elements of the internet technology adoption to shape consumer perceived risk are not the same (Harridge -March, 2006). They are likely to be different in different types of technology adoption for being able to make the users attracted to use the technology.

It has been reported that different risk sources or facets which may lead to impact the internet shopping adoption. Researcher founded main facets of the consumer perceived risk regarding internet technology adoption including social and psychological risks (Li & Huang, 2009; Yang, Pang, Liu, Yen, & Tarn, 2015), but the change in impact of the existing factors; internet technology adoption may not be similar in future (Eggert, 2006). Few empirical pieces of evidence show that shopping behavior internet has been reported to be negatively influenced by economic, performance, privacy, and social factors. These all factors are expected to provide their negative impact on overall consumer perceive risk for negatively affecting the internet technology adoption (Crespo et al., 2009). The internet technology adoption is likely to not be positively affected by all the potential beliefs, intentions, and attitudes but there can also be some negative factors to impact. The level of experience to use technology is likely to shape the consumer adoption behavior regarding e-commerce (Chang & Tseng, 2013).

E-CRM has its concern with the delivery of effective relationship marketing programs on internet service. The role of ECRM is primary to develop a good level of attitude among the customers to adopt internet technology. The adoption of e-commerce technology can be done with confidence by the customers when there is the existence of ECRM (Samadi & Yaghoob-Nejadi, 2009; Sims & Xu, 2012). It can be simply argued that when there will be potential adoption of the internet technology then there will be high chances of getting control over the potential outcomes. Howcroft, Hamilton, and, Hewer, (2002) describe numerous factors which encourage internet banking adoption enlightening the significance of time efficiency, lower fees, 24/7 services, coverage in a popular area and good quality services. They also discuss the significance of difficulty in use, security concerns and poor access to different delivery channels. These factors discourage internet banking adoption. Many other factors which are discussed in the literature are user experience, accuracy, transaction rapidity, customer friendliness, customer convenience and involvement as well (Liao & Cheung, 2002), privacy and bank trustworthiness (Akinci, Aksoy, & Atilgan, 2004).

Social Cognitive Theory (SCT) by Bandura (1986), offers a design for considering, forecasting, and altering human behavior and attitude, interacting with personal aspects environment. The interaction

among a person and his behavior comprises cognitive capabilities human beliefs which are designed and amended by social impact and arrangements within environment. Perceived Risk Theory (Roselius, 1971) also describes that the consumers' patterns are categorized under two positions risk-decreasing and risk-increasing behavior technique. In this regard, (Marche & McNiven, 2003) was conducted a study that examined the actual impact of moral philosophy and perceived risk, particularly on the moral decision-making process (Tan, 2002). By utilizing this theme, different researchers have described perceived risk theory as an amalgamation of numerous extents. These extents embrace social, physical, psychological and privacy risks (Jacoby & Kaplan, 1972; Roselius, 1971). Perceived-risk theory was utilized as a basic notion in this study. It refers to the models that utilized in analyzing internet banking adoption, Hanafizadeh and Khedmatgozar, (2012) described the key aspect which differentiates it from other models.

Fadare, (2015) investigated the perceived risk intention to utilize internet banking adoption. Martins, Oliveira, and Popovič, (2014) designed a model which combined two theories named "Unified theory of acceptance" and "Use of technology," also described as (UTAUT).Kesharwani and Tripathy (2012) results postulate that the intrinsic risk such as computer self-efficacy while extrinsic risk like social, privacy risk employs a considerable impact on the adoption of internet banking.Farzianpour, Pishdar, Shakib, and Toloun, (2014) highlight elements of customers' perceived risk analysis .examined factors reducing the intention to adopt internet banking services involve privacy and social risks.

Luo et al., (2010) concluded that, privacy risk, and social risk, negatively affect consumers' intention toward IB adoption. Roy & Sekhon, (2016b) endorsed results of Lee, (2009); Luo et al., (2010); Martins, Oliveira, et al., (2014); Rawashdeh, (2015); Yang et al., (2015),Khedmatgozar and Shahnazi, (2018). On these bases, we conceptualized that privacy risk, and social risk negatively impact internet banking adoption.

H1: Privacy risk has a negative impact on internet banking adoption

H2: Social risk has a negative impact on internet banking adoption

Methodology

The present investigation is both quantitative and explanatory. We used a self-administered questionnaire to evaluate the significant association between various factors (Aydın, 2014; Khedmatgozar, & Shahnazi, 2018; Roy, et al., 2017). The questionnaire consisted of the demographic and variable values of the study. A five-point Likert scale was used to collect the data and the scale is ranging from "strongly disagree=1" to "strongly agree=5" Total of 44 items are used to measure all variables. 500 self-administered questionnaires were delivered in person and through mail to collect the data.

The present investigation is both quantitative and explanatory. We used a self-administered questionnaire derived from to evaluate the significant association between factors. Raosoft Inc calculator is used to selecting the sample size at the 95% level of confidence and keeping the 5% error margin we choose the minimum 377* sample size as supported by (see for instance Raosoft.Inc, 2004; Rao & Rao, 2009). For pilot testing 55 questionnaires were delivered only 51 questionnaires were received for pilot testing.

Structural equation modeling technique was used to examine the relationship between exogenous and endogenous variables. run preliminary data analysis, reliability test and path analysis technique were used to examine the impact of performance, time, and financial risks on internet banking

adoption. The sampling technique's appropriateness was tested through Kaiser-Meyer-Olkin (KMO) and Bartlett's test was used for Elementary Factor Analysis (EFA) as followed by Mukherjee & Nath (2003).

Results

Response Rate

The target population of this study was male and female, students, teachers, employed, unemployed bankers, and non-bankers, and so on from Sahiwal, Okara, and Pakpattan of Punjab, Pakistan. Total 500 questionnaires were distributed through person-administrated and via web survey 484 (96.8%) questionnaires were received in which 477 were filled and 7 were incomplete.

Demographic Characteristics

Data was gathered by using questionnaires on the independent and dependent variables. Respondents were of different age groups, there were 26 respondents of 40 and above, 200 respondents were from the 28-37 age group while 197 lies between 18-27 age group, and 54 were from the 38-47 age group.

The study sample consists of 477 respondents who retains varying qualification i.e. 11 of them hold metric or under metric qualification, twenty-five of them hold an intermediate degree and 132 of them were undergraduate. Interestingly, 64.65% of sample retains master and higher degrees and it is quite influential that these respondent faces sever risks from adopting internet banking.

Table 1. Demographic Analysis

Demographics	Frequency	Percentage (%)
Age		
18-27	197	41.3
28-37	200	42.1
38-47	54	11.3
47 and above	26	5.3
Qualification		
Matric or lower	11	2.2
Intermediate	25	5.3
Bachelor	132	22.5
Masters	305	63.9
Higher Education (PHD)	4	0.75
Occupation		
Student	35	7.5
Employed	373	78.2

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Unemployed	8	1.5
Retired	0	0.0
Self-employee (Business)	61	12.8
Gender		
Male	408	85.7
Female	69	14.3
Income Status		
15000-30000	104	21.8
31000-45000	122	25.6
46000-60000	136	28.6
61000-75000	40	8.2
76000 and above	75	15.8
Total	477	100

It is noted that the majority of respondents earn up to 60000 and just 75 of 477 earn more than 76000 a month. To minimize gender bias author included both male and female respondents. However, 85% of them were male and the rest of the sample consisted of female respondents from different classes and education as well as income levels.

Interestingly, about 86% of study's respondents are having bachelor's and master's degrees and about 53% earn from 31-60000. It is revealed that educated people are well known of the risk associated with internet banking. As per previous literature, it could be assumed that either most of them are yet not connected with the IB or are not usual users of IB. Further, it exposes the way stakeholders portray IB adoption. On contrary to this, demographics reveal that 76% of respondents just earn to meet their basic desires as their income level remains at 60,000.

Reliability Analysis

Our results show significant values of alpha as both endogenous and exogenous variables have values more than 0.70. Reliability analysis showed that the Cronbach's alpha values for all the variables were lying within the acceptance range i.e. .704 to .811 (Table 2).

Table 2. Reliability Analysis

Sr. no	Variables	Cronbach's alpha (α)
1	Internet Banking adoption	0.864
2	Privacy Risk	0.823
3	Social Risk	0.864

Multicollinearity Analysis

The variance inflation factor (VIF) explains the fluctuation in regression variance by retaining R^2 zero. VIF is normally used to meet the basic assumptions of data normality. This test reveals the multicollinearity issues among independent variables. The study reveals that all variables have VIF values less than 4 (table 2). Therefore, it is argued that over data is normally distributed and there is no multi-issue in the dataset (Gujarati, 2009).

Table 3 Variance Inflation Factor

Sr. No.	Variables	Tolerance	VIF
1	Privacy Risk	.924	1.082
3	Social Risk	.909	1.100

CFA (Confirmatory Factor Analysis)

Analysis of Confirmatory Factor Analysis (CFA) reveals that the items used to measure the latent variables are good indicators for the constructs. CFA was performed to calculate the validity of the scale. Convergent and discriminant validity of all unobserved variables have been computed.

Table 3. Confirmatory Factor Analysis

Variable Name	Measures	Factor Loading	Eigenvalue	%age of Variance	Croanbach's alpha (α)
Internet Banking Adoption	IBA1	.877	2.369	76.959	0.864
	IBA2	.770			
	IBA3	.778			
Privacy Risk	PR1	.783	2.215	73.837	0.823
	PR2	.729			
	PR3	.752			
	PR4	.718			
Social Risk	SR1	.783	2.358	78.790	0.864
	SR2	.787			
	SR3	.854			

Model Fit Indices

To evaluate the model fitness is a very difficult task in SEM because this fit is connected with the model of study, its empirical data, and method to analyze the estimates, model fit indices are developed after a long period of study (Caster, 2009). According to Jaccard and Wan (1996) different indices values are analyzed to check the model fitness.

Table 4. Model fit.

Model Indices	Recommended	Obtained
CFI	> .95	.99
CMIN/df	< 3	1.372
GFI	> .95	.970
IFI	> .95	.957
NFI	> .95	.962
RMR	< 0.10	.003
RMSEA	< .10	.058

Path Analysis

Results of the study show that the variables retain significant negative relation with the IB adoption while one of five rejected to support the proposed variable. Particularly, privacy risk has a negative impact on IB adoption as the β coefficient is -0.212 and lies in the critical region of -4.119 with a p-value of 0.00. It is revealed that customers do not avoid banking adoption as they perceive that IB adoption is good in performance and time management and no financial risk involved in IB adoption. Further, study results endorse perceived risk theory see for instance (Khedmatgozar, &Shahnazi, 2018; Roy, et al., 2017).

Table 5. Path analysis results with coefficient and their associated p-values.

			Estimate	S.E.	C.R.	P	Supported
IBA	↔	PR	-.212	.051	-4.119	***	Accepted
IBA	↔	SR	-.057	.041	-1.390	.165	Not Accepted

Secondly, end-users move away from the adoption of IB as they assume that minor mistakes could lead to major losses while operating the new IB system. Time risk has shown a higher β coefficient as -0.335 with 0.101 as standard error and significant p-value. IB users avoid opting for the new system as many of the respondents reveal that they have no time to understand the new operating system. While answering the questions, they responded that the new IB system may need more time to understand as it is quite difficult from paper as well as other modes of banking. Further, they reveal that in case of any hurdle, misconception, an issue they need much time to understand and resolve. It is acceptance of our hypothesized objective as time risk restricts customers from the adoption of the new internet banking system. These results are also supported through an extensively discussed theory of perceived risk as well technology acceptance model (TAM) which is advocated as adoption of the theory of reasoned action (TRA) (see, for instance, Bashir, &Madhavaiah, 2015).

While responding to financial risk, they reveal that we do not adopt IB as it can create a loss of amount due to entrance of wrong account number, transaction error, and hacking of accounts. This may serve to severe loss to their low incomes. These results are also supported by both prevailing literatures as well

as the theory of PRT see for example (Moradi, Ghomian, & Sarjanian, 2012; Alam, Musa, & Hassan, 2009).

Finally, answering to performance risk it was argued that due to technological advancement, unique products, and trust it is difficult to adopt IB. It is also revealed that lack of trust in transaction patterns rigid their behavior toward IB adoption. Results of the study reveal that these risks demoralize non-users and thus, users restrict themselves from IB adoption.

Overall, these results are an indication of a significant relationship between internet banking adoption and predictor variables. The structural model also provides a correlation between predictor variables. It is presented that no predictor variable has a correlation coefficient of more than 0.60.

Discussion

This study investigates the impact of social and privacy risks on internet banking adoption. Internet banking is considered a modified mode of banking channel that reduces cost and makes it efficient for both individuals and businesses. IB adoption gains significant popularity in both academic as well as banking markets.

Results of the study revealed that coefficient values are less than 0.6 that depicts no issue of autocorrelation among predictor variables. The p-value shows the significant relationship among predictor as well as dependent variables. Further, privacy risk has a negative relationship with the internet banking adoption as supported by Khedmatgozar, & Shahnazi, (2018). While social risk is insignificant to the IB adoption.

To analyze the reliability and validity of the data, we run factor analysis, i.e., CFA and EFA. To perform the EFA, we run KMO and Bartlett's test, and the results revealed a .782 KMO value above the threshold of 0.50 for KMO. Bartlett's value was also significant, with a p-value of 0.000. EFA eigenvalues were found greater than 1, and the percentage of variance remained more than 60%. Further, the value of Cronbach's alpha meets the threshold of 0.7, as suggested in the academic literature.

The research revealed that end-users move away from the adoption of IB as they assume that minor mistakes could lead to major losses while operating the new IB system. While answering the questions, they responded that the new IB system might need more time to understand as it is quite difficult from paper and other banking modes. Further, they reveal that in case of any hurdle, misconception, issue, they need much time to understand and resolve it. These results are also supported through an extensively discussed theory of perceived risk as well technology acceptance model (TAM), which is advocated as adoption of the theory of reasoned action (TRA) see for instance (Bashir, & Madhavaiah, 2015). Conclusively, privacy risks reveal negative significant relation with internet banking adoption as supported by the literature.

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