



Examination of Customers Intention to Adopt Digital Banking Services: Moderating Role of Perceived Risk in Banking Sector of Pakistan during COVID-19

Anita Ali	Hailey College of Banking and Finance, University of the Punjab, Lahore, Punjab, Pakistan.
Rizwan Qaiser Danish	Associate Professor, Institute of Business Administration (IBA), University of the Punjab, Lahore, Punjab, Pakistan.
Waqas Baig	Institute of Business Administration (IBA), University of the Punjab, Lahore, Punjab, Pakistan.

Vol. 2, No. 4 (Fall 2022)

Pages: 19 – 26

ISSN (Print): 2789-441X

ISSN (Online): 2789-4428

Key Words

Digital Banking Services, Banking Sector, UTAUT, Perceived Risk, Performance Expectancy, Effort Expectancy

Corresponding Author:

Anita Ali

Email: anitaali530@gmail.com

Abstract: The COVID-19 pandemic poses a huge challenge for the Pakistani financial industry, leading to an increase in digital banking as it has become a necessity for users of financial services. The research seeks to empirically test the impact of customer perceptions on the adoption of digital banking during COVID-19. In addition, this study investigates the impact of performance expectancy, Effort Expectancy, and Social influence on customer's intentions to adopt digital banking services with moderating effect of perceived risk. The population of the study consist of all the customers of banks which are providing digital banking services in Pakistan. A survey was conducted and 254 responses were analyzed with the help of structural equation modeling. Study concludes that Performance Expectancy, Effort Expectancy and Social Influence as independent variable and Perceived Risk as moderating variable has a significant impact on the perception of customers of digital banking applications. Study further contributes that Perceived Risk moderates the relationship between Performance Expectancy, Effort Expectancy, Social Influence and the intention of customers of digital banking applications to adopt digital banking services.

Introduction

The COVID-19 pandemic not only causes a serious health crisis but also changes the structure of the global economic system. The effect on our lives because of the monetary effect of the measures taken to battle the infection was exceptional in the last century. Moreover, aside the new emergency, a review of the banking business' digital devolpement shows that the role of banks in the financial sector has changed essentially (Chipeta & Muthinja, 2018)), which thus has changed customer requirements (Adeel Zaffar, Kumar, & Zhao, 2019). Clients are now ready to engage in banking transactions using digital operating systems (Mckinsey & Company, 2016). With the help of new financial technologies,

banks can effectively and efficiently provide more exclusive services to their customers. New banking technologies and tools can facilitate collaboration with customers and increase customer loyalty (Abualsauod & MajedOthman, 2019). Increasing customer engagement makes banks more efficient and profitable (Wang, Fan, & Yin, 2019).

One of the most important aspects of forth generation banking after the Industrial Revolution is branchless banking, which goes one step further than digital banking. Digital banking tools allows customers to use almost all banking operation without even visit to branch of bank,

and the latest new tools remove the limitations of physical interaction of customers with bankers. However, new banking channels and technologies cannot be developed without being accepted by clients. Client requirements may vary depending on environmental and cultural conditions (Hassan, Wood, Telematics, & Informatics, 2020). In Pakistan study by Kazi (2013) certain factors influence the acceptance of mobile banking services. They concluded that customer's intent to use digital banking was significantly influenced by social impact, perceived risk, perceived ease of use, and perceived usefulness. In the case of the United Kingdom, Moutinho and Smith (2000) found that convenience and simplicity were considered by customers to be a top priority for digital banking. Karjaluoto et al. (2002) concluded that the previous experience of digital customers using e-banking is the most important factor in accepting and using e-banking. Zhang (2018) A study of 62 samples from 27 countries showed that some cultural characteristics of each country could adversely affect the acceptance of electronic banking.

Most of the studies in this area have mainly focused on the adoption and development of a technology, while the technical development of a particular technology, regardless of the factors affecting its acceptance by users, would reduce the capabilities of 'one system and it would waste many resources of an organization and a country. It is therefore essential to systematically consider the issue of acceptance of the technology by banking customers. This research examines the acceptance issues associated with digital banking, particularly in the context of Pakistan.

The researchers sought to examine the customer's intention to adopt digital services in the context of Pakistan's banking industry. Pakistan, the sixth most populous country in the world, is a money-based economy, with 85% of its population economically excluded. Pakistan could become an attractive market for developing digital technologies due to the increasing number of young people, a catastrophic penetration of the Internet and smartphones, consumer choices for

mobile and social media, and the spread of online commerce that promotes digital payments, and overall financial system having absorption capacity for innovation. So, this study investigates various factors effecting customers intentions to adopt digital banking services with moderating effect of perceived risk. It is evident that due to COVID-19 every organization face difficulties to manage their operation smoothly. This study sheds light upon the adoption intention of digital services in this pandemic and specifically its implication on banking sector which is a growing sector worldwide. This study attempts to answer the following questions:

1. Is there any relationship between performance expectancy and customer's intention to adopt digital banking?
2. Does effort expectancy has impact on customer's intention to adopt digital banking?
3. Is there any relationship between social influence and intention to adopt digital banking?
4. Does perceived risk moderates the relationship between performance expectancy, effort expectancy and social influence to adopt digital banking during?

Literature Review and Hypotheses Development

Understanding the variables that influencing the acknowledgment of technology has been the subject of examination by many researchers. For this reason, many models have been developed based on psychological and sociological theories, the most widely used being the technology acceptance model. Venkatesh (2003) developed the UTAUT model (Unified Theory of Acceptance and Use of Technology) by using the foundation of previous researchers in the field of technology. The creation of the UTAUT model is the result of the integration of the eight models used to explain the technology adoption process in the previous research. These models include "Theory of Reasoned Action, The Technology Acceptance Model, The Motivational Model, The Theory of

Planned Behavior, The Combined Theory of Planned Behavior/Technology Acceptance Model, The Model of Personal Computer Utilization, The Diffusion of Innovation Theory and Social Cognitive Theory”.

The UTAUT model has attracted in the consideration of many researchers, and its fruitful application has been affirmed by different empirical studies (Venkatesh, 2003; Zuiderwijk, Janssen, & Dwivedi, 2015). Its importance is not only reflected in the analysis of the most important precedents in the use of technology, but also in the analysis of moderators who amplify or limit the influence of the central determinant (Tessema, Ready, & Yu, 2012). The UTAUT model consists of four parts: performance expectations, effort expectations, social influence and promotion conditions (V. Venkatesh, Thong, & Xu, 2012). In addition, the UTAUT model uses gender, age, experience, and voluntary use as moderating factors, explaining the differences in behavior among different populations (Ji & Qu, 2008).

Performance Expectancy

Performance expectancy is defined as the extent to which the use of technology benefits consumers in the performance of specific activities (V. Venkatesh et al., 2012). Performance expectations are actually measured to the extent that people think digital banking is useful to banks (Tarhini, Hone, & Liu, 2013). Oliveira, Thomas, and Espadanal (2014) and Javed (2018) concluded that performance expectancy have an overall impact on the behavioral intentions of digital banks. The experience of Baptista and Oliveira (2015) and Basri (2018) shows that mobile banking users believe that performance expectancy are one of the most important precedents for behavioral intentions.

In this sense, this article tests the following hypotheses:

- H1:** Performance expectations have a statistically significant impact on the behavioral intention of using digital banking services.

Effort Expectancy

Effort expectancy define as “ease of use associated with the system” Venkatesh et al. (2003). The easier it is to use digital banking, the more probable it is that clients will use it for banking activities. Bankole et al. (2011), investigate the digital banking history in devopling county and findings shows that effort expectancy has a positive association with customer’s intentions to use digital banking. Another study by Bhatiasavi (2016), studied about the relationship between effort expectancy and customer’s intention to adopt digital banking in Thailand, the results of the study concluded that effort expectancy have a positive effect on customer adoption behavior. Further, one study conducted by Albashrawi et al. (2017) also indicate a positive association between effort expectancy and intention to adopt digital banking by observing a sample of U.S. bank clients. Based on the above, we can draw the following conclusions:

- H2:** Effort expectancy has a significant association with customer’s intention to use digital banking services.

Social influence

Social influence define as “the degree to which an individual perceives that the use of new technology by him/her is considered important by others or he/she conforms to others’ expectations” Venkatesh et al., 2003). Individuals meet socially and they take impact from the value given to digital banking given by friends or relatives. It might impact the individual pattern towards digital banking. Different researcher’s empirically test the relationship between social influence and customers intentions to adopt digital banking services. Most of the researcher findings conclude a positive association between these variables (Bhatiasavi, 2015; Marinković & Kalinić, 2017). Moreover, in a context of devopling countries the impact of social influence on customer’s adoption to use mobile banking has observed significantly and positively (V. Venkatesh & Zhang, 2010). On the basis of the

above results, the researchers draws the following hypothesis.

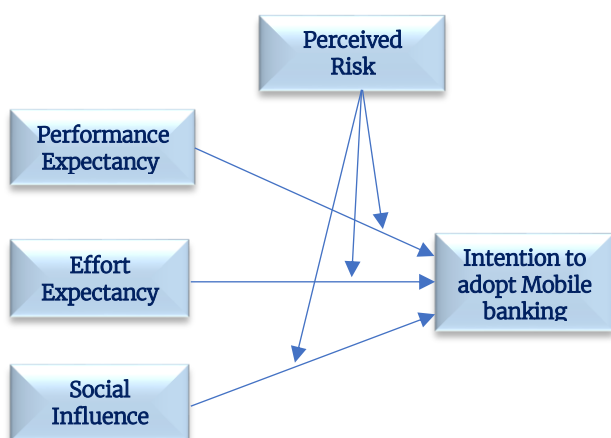
- H3:** Social influence has a significant association with customer's intention to use digital banking services.

Perceived risk

Perceived risk define as “the individual's subjective beliefs about the possible negative consequences of a certain planned action or behavior due to inherent uncertainty”. Risk perception is an important factor for customer's behavior since people appear to be more ready to try not to commit errors than to boost purchase returns (Mitchell, 1999). According to the researcher Pavlou and Stewart (2000) perceived risk is an important factor which determine the intention of banking customers to adopt digital banking services. Another researcher concludes that perceived risk may reduce the perception of behavior and environmental control, and this lack of control may effect on perception of digital customers behavior. The same is applicable for digital applications (Belkhamza & Wafa, 2009)). Some of the researchers also find a significant relationship between observed variables as it come from uncertainty and customers are really concerned about this (Andrews 2004). Perceived risk Therefore, researchers hypothesize.

- H4:** Perceived risks has a significant moderating effect impact on intention to adopt and use digital banking.

Conceptual Framework



Research Methodology

The main purpose of this research is to investigate the intention of bank customers to adopt digital banking services. For this reason, the population of this research is the current and potential users of digital banking services. The sample size of the survey consisted of 270 respondents from major cities in Pakistan. This sample size was calculated through response to item theory. The Researchers use convenience sampling technique to collect data.

The researchers used questioner as a toll for data collection. The questioner consists of two parts. The first part examines the factors that determine the intentions to adopt digital banking services, such as performance expectancy, effort expectancy, Social influence and Perceived risk. The second part examine the demographic information such as age, gender, income level, customer experience etc. The modified questioner was developed based on the intention to adopt digital banking developed by (Evon Tan, 2016; Gary Mortimer, 2015; Makanyeza, 2017). The 310 questioner was sent to customers. The overall response rate was 84.52%. Various data analysis tools and techniques have been used in current research to validate data. Various techniques that have been used in the current study analysis were comprised of Reliability analysis, descriptive statistics, correlation, Structuring model and Regression Analysis. The tool used for data analysis of this research was IBM SPSS and AMOS analytical tool.

Data Analysis and Results

Reliability Analysis

Name of Variable	Items No.	Cronbach's Alpha
Performance expectancy	7	.939
Effort Expectancy	4	.884
Social Influence	7	.866
Perceived Risk	6	.916
Intention to adopt	3	.859

Table 4.1 shows the internal consistency of the variables. According to the (reference) the value of Cronbach alpha should be higher than 0.7. The

result shows that all the values of constructs are reliable as above the threshold of Cronbach's alpha.

Summary of Model Fitness

Model	CMIN/DF	CFI	GFI	AGFI	PCLOSE	RMSEA	RMR
	1.475	.978	.911	.882	.848	.043	.062

Table 4.2 shows the model fitness summary. According to the results the values of "GFI, AGFI, CFI, and PCLOSE" is according to the standards and the values of "RMR, CMIN/DF and RMSEA" are below onset standards. Therefore, the model is good fit and can also be used for hypothesis testing.

Structural model

Table 4.3 shows the structural equation modeling to make a structural model. SEM investigated the effect of all exogenous latent variables on some other specific latent variables. Goodness of fit guides are applied for testing structural model.

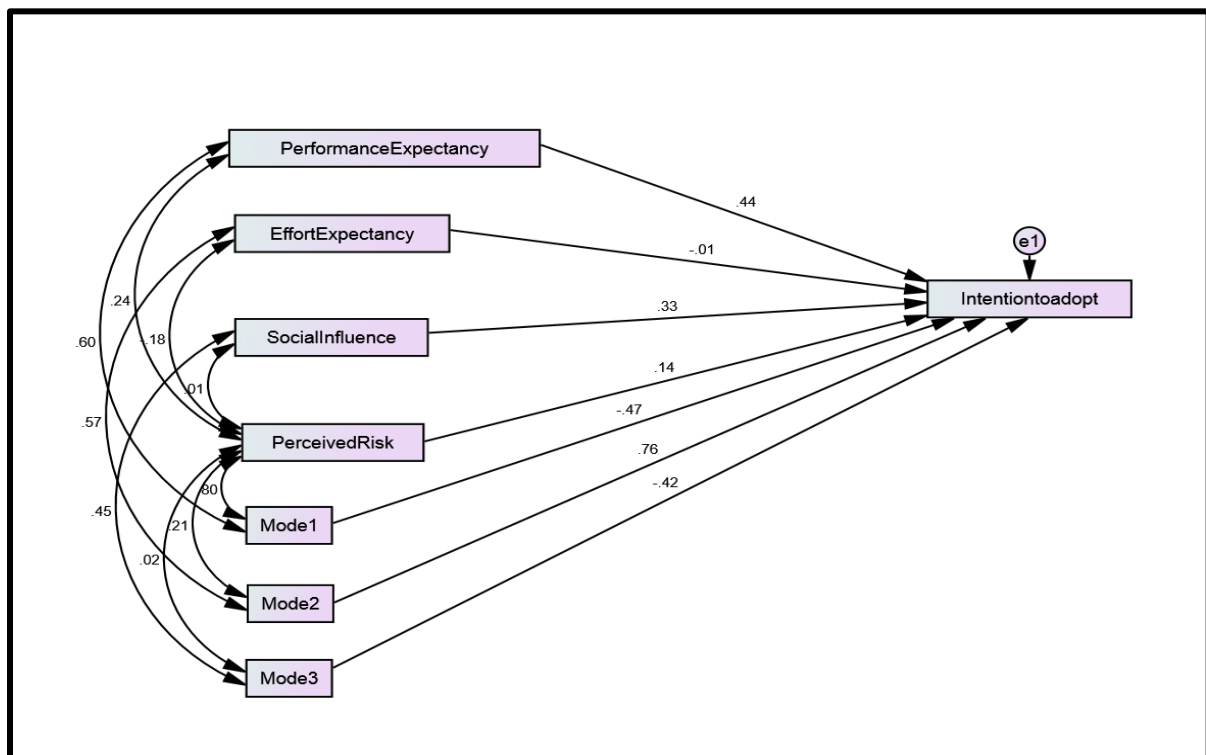


Figure: Structural Model (SEM)

Moderation Analysis

Table 4.4 shows the moderation analysis of the model. According to the results perceived risk as a moderator significantly change the relationship of Performance Expectancy, Effort Expectancy,

and Social Influence with intention to adopt Digital banking. Values of standardized regression weights with moderator given in table 4.4

Standardized Regression Weights with moderator

Path	Estimates	S.E	C.R	p
Intention to adopt < ---Performance Expectancy	.468	.041	11.27	***
Intention to adopt < ---Effort Expectancy	-.013	.052	-.243	.808
Intention to adopt < ---Social Influence	.378	.028	13.69	***
Intention to adopt < ---Perceived Risk	.179	.095	1.888	.059
Intention to adopt < ---Mode1	-.100	.017	-5.874	***
Intention to adopt < ---Mode2	.197	.011	18.03	***
Intention to adopt < ---Mode3	-.128	.007	-17.45	***

Hypotheses

Hypotheses	Path	Beta	P-value	Results
H1	PE → IN	.468	***	Accepted
H2	EE → IN	-.013	.808(NS)	Rejected
H3	SI → IN	.378	***	Accepted
H4a	MODE1→ IN	-.100	***	Accepted
H4b	MODE2 →IN	.197	***	Accepted
H4c	MODE3 →IN	-.128	***	Accepted

Above given table shows the association between variables and outcomes related to the research.

Discussion

The result of the study report that performance expectancy has a significant and positive impact on customers intention to adopt digital banking during COVID-19. So, researcher reject the null hypothesis. Previous studies report similar results as different researchers findings argues that customers are positively attracted through the factor of performance expectancy (Evon Tan, 2016; Gary Mortimer, 2015; Makanyeza, 2017; Richard Glavee-Geo, 2017). The results of the study also reveals that effort expectancy has insignificant relationship with customers adoption to adopt digital banking. So, the researcher fails to reject the null hypothesis. The findings of current study is contradict with the findings of literature as most of the researchers find a positive relationship between observed variables. (Evon Tan, 2016; Gary Mortimer, 2015; Makanyeza, 2017; Richard Glavee-Geo, 2017). Further, results reveals that social influence has positive and significant relationship with customers intention to adopt digital banking in Paksitani context. Social influence is construct of UTAUT model in

determining the intention to adopt technology. Social influence means that the extent to which individual feelings, opinion and behavior are influenced by others. So, researcher reject null hypothesis. Previously, many researchers report the same findings and consider social influence as an important factors that affect the adoption behavior of digital banking customers (Evon Tan, 2016; Gary Mortimer, 2015; Makanyeza, 2017).

The major contribution of current study was to check the moderating effect of perceived risk on observed variables. In the previous studies perceived risk was used as an independent variable which shows that there was a significant negative relationship with intention to adopt digital banking (Evon Tan, 2016; Gary Mortimer, 2015; Makanyeza, 2017; Richard Glavee-Geo, 2017). In current research when Perceived Risk examine as moderator variable, results shows that there is a significant relationship with intention to adopt Digital banking. So, it is concluded from the results of this study is that there is a moderation. It has been concluded from significant results of the study that perceived risk

play moderating role in the relation between Performance Expectancy and intention to adopt Digital banking. The study results reveals that during COVID-19 the intention of customers toward digital banking has increased and the discussed factors contribute to adopt digital banking in Pakistan.

References

- Abualsauod, E. H., & Othman, A. M. (2020). A study of the effects of online banking quality gaps on customers' perception in Saudi Arabia. *Journal of King Saud University - Engineering Sciences*, 32(8), 536–542. <https://doi.org/10.1016/j.jksues.2019.09.001>
- Adeel Zaffar, Kumar, & Zhao. (2019). Using agent-based modelling to investigate diffusion of mobilebased branchless banking services in a developing country. *Decision Support Systems*, 117, 62–74.
- Baptista, G., & Oliveira, T. (2015). Understanding mobile banking: The unified theory of acceptance and use of technology combined with cultural moderators. *Computers in Human Behavior*, 50, 418–430. <https://doi.org/10.1016/j.chb.2015.04.024>
- Belkhamza, Z., & Wafa, S. (2009). The Effect of Perceived Risk on the Intention to Use E-commerce: The Case of Algeria. *Journal of Internet Banking and Commerce*, 14.
- Bhatiasevi, V. (2015). An extended UTAUT model to explain the adoption of mobile banking. *Information Development*, 32. doi:10.1177/0266666915570764
- Chipeta, & Muthinja. (2018). Financial innovations and bank performance in Kenya: evidence from branchless banking models. *South African Journal of Economic and Management Sciences*, 21(1).
- Evon Tan, J. L. L. (2016). Behavioural intention to adopt mobile banking among the millennial generation *Young Consumers* 17(1), 18–31.
- doi:<https://doi.org/10.1108/YC-07-2015-00537>
- Gary Mortimer, L. N., Syed Fazal E. Hasan and Benjamin Dunphy (2015). Investigating the factors influencing the adoption of m-banking: a cross cultural study. *International Journal of bank marketing*, 33(4). doi:<https://doi.org/10.1108/IJBM-07-2014-0100>
- Hassan, Wood, Telematics, & Informatics. (2020). Does country culture influence consumers' perceptions toward mobile banking? A comparison between Egypt and the United States, 46. doi:10.1016/j.tele.2019.101312
- Javed, S. (2018). UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY (UTAUT) MODEL-MOBILE BANKING.
- Ji, S., & Qu, G. (2008). Mobile commerce user acceptance study in China: A revised UTAUT model. *Tsinghua Science & Technology*, 13, 257–264. doi:10.1016/S1007-0214(08)70042-7
- Kazi, A. K. (2013). Factors affecting adoption of mobile banking in Pakistan: Empirical Evidence. *International Journal of Research in Business and Social Science*, 2(3).
- Makanyeza, C. (2017). Determinants of consumers' intention to adopt mobile banking services in Zimbabwe *International Journal of bank marketing*, 35(6), 997–1017. doi:<https://doi.org/10.1108/IJBM-07-2016-0099>
- Marinković, V., & Kalinić, Z. (2017). Antecedents of customer satisfaction in mobile commerce: Exploring the moderating effect of customization. *Online Information Review*, 41, 138–154. doi:10.1108/OIR-11-2015-0364
- Mckinsey, & Company. (2016). Cutting through the finTech Noise: Markers of Success. *Imperatives for Banks*.
- Mitchell, V. W. (1999). Consumer perceived risk: conceptualisations and models. *European*

- Journal of Marketing*, 33(1/2), 163-195. doi:10.1108/03090569910249229
- Moutinho, L., & Smith, A. (2000). Modelling bank customer satisfaction through mediation of attitudes towards human and automated banking. *International Journal of Bank Marketing*, 18(3), 124-134. doi:10.1108/02652320010339699
- Oliveira, T., Thomas, M., & Espadanal, M. (2014). Assessing the Determinants of Cloud Computing Adoption: An Analysis of the Manufacturing and Services Sectors. *Information & Management*, 51. doi:10.1016/j.im.2014.03.006
- Pavlou, P., & Stewart, D. (2000). Measuring the Effects and Effectiveness of Interactive Advertising: A Research Agenda. *Journal of Interactive Advertising*, 1. doi:10.1080/15252019.2000.10722044
- Richard Glavee-Geo, A. A. S., Heikki Karjaluo, . (2017). Mobile banking services adoption in Pakistan: are there gender differences? . *International Journal of bank marketing*, 35(7), 1088-1112. doi:<https://doi.org/10.1108/IJBM-09-2015-0142>
- Tarhini, A., Hone, K., & Liu, X. (2013). User Acceptance Towards Web-based Learning Systems: Investigating the Role of Social, Organizational and Individual Factors in European Higher Education. *Procedia Computer Science*, 17, 189-197. doi:10.1016/j.procs.2013.05.026
- Tessema, M., Ready, K., & Yu, W. (2012). Tessema, M., Ready, K., & Yu, W. (2012). Factors affecting College Students' Satisfaction with Major Curriculum: Evidence from nine years of data. *International Journal of Humanities and Social Science*, 2 (2), 34-44. *International Journal of Humanities and Social Science*, 2, 34-44.
- Venkatesh. (2003). User Acceptance of Information Technology: Toward a Unified View. *Management Information Systems Quarterly*, 27(3).
- Venkatesh, V., Thong, J., & Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly*, 36, 157-178. doi:10.2307/41410412
- Venkatesh, V., & Zhang, X. (2010). Unified Theory of Acceptance and Use of Technology: U.S. Vs. China. *Journal of Global Information Technology Management*, 13, 5-27. doi:10.1080/1097198X.2010.10856507
- Wang, Fan, & Yin. (2019). Financing online retailers: bank vs electronic business platform, equilibrium, and coordinating strategy. *European Journal of Operational Research*, 276(1), 343-356.
- Zhang. (2018). Banking “on-the-go”: examining consumers’ adoption of mobile banking services. *International Journal of Quality and Service Sciences*, 10(4).
- Zuiderwijk, A., Janssen, M., & Dwivedi, Y. K. (2015). Acceptance and use predictors of open data technologies: Drawing upon the unified theory of acceptance and use of technology. *Government Information Quarterly*, 32(4), 429-440. doi:<https://doi.org/10.1016/j.giq.2015.09.005>