Journal of Central Banking Law and Institutions, Vol. 3 No. 1, 2024, pp. 153 - 176
e-ISSN: 2809-9885 – p-ISSN: 2827-7775
http://doi.org/10.21098/jcli.v3i1.172

IMPROVING DIGITAL BANKING THROUGH RISK ASSURANCE: TAM MODIFICATION ANALYSIS

Dwi Marlina Wijayanti,Hasan Al-Banna, Achmad Nurdany
UIN Sunan Kalijaga, Yogyakarta, Indonesia
e-mail: dwi.wijayanti@uin-suka.ac.id (corresponding author); hasan.albanna@uin-suka.ac.id ; achmad.nurdany@uin-suka.ac.id

Submitted: 8 April 2023 - Last revised: 29 November 2023 - Accepted: 12 December 2023

Abstract

The rapid growth of digital banks has been followed by changing customer behaviour patterns. On the other hand, customer perceptions of digital banks are that they still carry considerable risk. Therefore, the role of institutions in providing certainty and security guarantees for digital banking customers is very important. Based on this situation, this research explores what factors can encourage individuals to use digital banks, which are currently growing quite rapidly through the role of institutions. The Technological Acceptance Model (TAM) is used as a construct in exploring individual behaviour in reaction to technological innovation in digital banks. In addition, risk guarantees from government institutions are also explored as safeguarding customer security. The sample for this study were 977 digital bank users. Data was collected through a self-administered survey. The results show that perceived service quality (PSQ), service innovation (SI), perceived usefulness (PU), perceived ease of use (PEoU), attitude, and behavioural intentions are factors that encourage actual use of digital banking services. It is also known that perceived risk assurance moderates the relationship between attitude and behavioural intention. This research contributes to policy makers for the expansion of digital bank market share through appropriate marketing strategies for digital banks, as well as strategies to increase deposit insurance literacy.

Keywords: *technological acceptance model (TAM), risk assurance, actual behaviour, digital banking*

I. INTRODUCTION

The increase in internet users in Indonesia has had an impact on increasing digital-based services and products.[1] Internet market penetration is an indicator for measuring the development of Information, Communication and Technology (ICT) in a country. Furthermore, the increase in ICT can

[1] Yan Zhang, "Influence Effect of Internet on the Optimization of China's International Trade Structure Based on Gravity Model," *Mathematical Problems in Engineering 2022* (2022): 1–8, https://doi.org/10.1155/2022/4771947.

provide a stimulus for economic development[2] and production of goods and services,[3] as well as education.[4]

In the financial sector, digital banking is a fairly new innovation that has emerged following better access to ICT infrastructure. Services without branch offices, based on electronic/internet channels, while maintaining customer security are the advantages of today's digital banks compared to traditional bank models. Thus, the operational costs of digital banks are comparatively small. This is what has led to the rapid development of digital banking in Indonesia.

As of July 2022, there were approximately ten digital banks operating in Indonesia. Dailysocial.id launched a list of digital banks in Indonesia, the most active being Jenius, Jago Bank, Digibank, Neobank, LINE Bank, PermataMe, TMRW, SeaBank, Blu, and Motion. These digital banks are the result opening of an independent new bank (LINE Bank), opening existing digital bank subsidiaries (Jenius from BTPN, PermataMe from Bank Permata, TMRW from UOB), as well as bank acquisitions with the transformation of digital services (Jago Bank previously Artos Bank, Sea Bank previously *Bank Kesejahteraan Ekonomi*, and Blu/BCA Digital previously Bank Royal).

The rapid growth in digital banking has also been followed by changing customer behavioural patterns. Almost all services offered at digital banks are online based. This digital banking relationship starts with account opening, and continues through financial transactions, cash withdrawal/deposit services, and complaint management. Customers are more interested in online banking systems because they are easy to access, easy to use, support high mobility, and facilitate fast transaction processing.[5] Shifts in customer perceptions of banking services were also discovered by Mbama.[6] According to him, current customers preference for banking services are service quality, functional ease, perceived value, speed of service, novelty of innovation, customer involvement, brand trust, and minimisation of risks.

---

[2] Mounir Belloumi and Kamel Touati, "Do FDI Inflows and ICT Affect Economic Growth? An Evidence from Arab Countries," *Sustainability* 14, no. 10 (2022): 6293, https://doi.org/10.3390/su14106293.

[3] Xuehao Bi, Bo Wen, and Wei Zou, "The Role of Internet Development in China's Grain Production: Specific Path and Dialectical Perspective," *Agriculture* 12, no. 3 (2022): 377, https://doi.org/10.3390/agriculture12030377.

[4] Adel ben Youssef, Dahmani Mounir, and Ragni Ludovic. "ICT Use, Digital Skills and Students' Academic Performance: Exploring the Digital Divide." *Information,* 13, no. 3 (2022): 129. https://doi.org/10.3390/info13030129

[5] Bitkina Olga Vl, Park Jaehyun, and Kim Hyun K., "Measuring User-Perceived Characteristics for Banking Services: Proposing a Methodology," *International Journal of Environmental Research and Public Health* 19, no. 4 (2022): 2358, https://doi.org/10.3390/ijerph19042358.

[6] Mbama, Cajetan Ikechukwu, Patrick Ezepue, Lyuba Alboul, and Martin Beer. "Digital Banking, Customer Experience and Financial Performance." *Journal of Research in Interactive Marketing,* 12, no. 4 (2018): 432–51. https://doi.org/10.1108/JRIM-01-2018-0026.

The use of new technology by customers across several studies is measured using the Technology Acceptance Model (TAM).[7] In this model, ease of use, usefulness, attitude, and behavioural intention have become important factors in how customers to adopt new technology (actual use). This TAM model has been widely used in various studies, such as in the use of mobile banking,[8] online education,[9] and unmanned vehicles .

In the TAM model, the success of technology adoption is also influenced by external factors, including service quality and service innovation,[10] stating that perceived service quality refers to a comparison between customer expectations for the services provided with actual quality of services are enjoyed by customers. This perception influences whether someone adopts digital banking.[11] In addition, the digital bank business is principally a service business, so that quality service is an essential obligation for digital banks; able to increase the ease of use and usefulness of digital banking products.[12] Service innovation is also an important factor in increasing customer loyalty because services that continue to innovate and are increasingly suited to customer needs are a bank's strengths.[13] Therefore, the presence of a digital bank as one of the service innovations in the banking world can provide unique utility and ease of use for customers.

---

[7] Chee, Chew Chu, Rosli Mahmood, and Azizan Mohamed-Isa. "Factors Affecting Mobile Banking Adoption." *Journal of Information Technology Management*, 13, no. 3 (2021): 116–25. https://doi.org/10.22059/JITM.2021.83117; Abera Bekele Kejela, and Daniel Porath. "Influence of Attitude on Mobile Banking Acceptance and Factors Determining Attitude of End-Users in Ethiopia." *Journal of Internet and Digital Economics,* 2, no. 1 (2022): 68–88. https://doi.org/10.1108/jide-08-2021-0007.

[8] Albort-Morant, Gema, Carlos Sanchís-Pedregosa, and Jazmin R. Paredes Paredes. "Online Banking Adoption in Spanish Cities and Towns. Finding Differences through TAM Application." *Economic Research-Ekonomska Istrazivanja* 35, no. 1 (2022): 854–72. https://doi.org/10.1080/1331677X.2021.1945477.

[9] Muhammad Rahies Khan, Faiza Siddiqui, Mubashir Ali Khan, and Yasir Rasool, "Technology Induction in Education During COVID-19 Is Recreation or a Curse ?: Integration of Technological and Behavioral Factors from the Students ' Perspective" 11, no. 2 (2021): 267–79.

[10] Issam Alhadid, et al, ""Predictors for E-Government Adoption of SANAD App. Services Integrating UTAUT, TPB, TAM Trust, and Perceived," International Journal of Environmental Research and Public Health 19, no. 14 (2022): 1-23, https://doi.org/10.3390/ijerph19148281.

[11] Evon M. Abu-taieh, et al, "Continued Intention to Use of M-Banking in Jordan by Integrating UTAUT, TPB, TAM and Service Quality with ML," Journal of Open Innovation: Technology, Market, and Complexity 8, no. 3 (2022): 1-30, https://doi.org/10.3390/joitmc8030120.

[12] Bo Edvardsson, Pennie Frow, Elina Jaakkola, Timothy Lee Keiningham, Kaisa Koskela-Huotari, Cristina Mele, and Alastair Tombs. "Examining How Context Change Foster Service Innovation." *Journal of Service Management* 29, no. 5 (2018): 932–55. https://doi.org/10.1108/JOSM-04-2018-0112.

[13] Chih Wen Wu, "The Study of Service Innovation for Digiservice on Loyalty," *Journal of Business Research* 67, no. 5 (2014): 819–24, https://doi.org/10.1016/j.jbusres.2013.11.051.

On the other hand, customers generally perceive that digital banks still carry considerable risk.[14] Trust in the brand is a dominant factor in influencing customer perception.[15] What is more, customer knowledge of digital banks is still minimal because a bank, even though a subsidiary or the result of an acquisition, is still classified as a new bank. Therefore, the role of institutions in providing certainty and security assurance for digital bank customers is very important. With a risk assurance program, customers feel safer because every nominal currency deposited, both in digital banks and traditional banks, remain safe regardless of the condition of the bank.

Basically, there is no difference between the risk assurance program between digital banks and traditional banks. It is just that digital banks can be easy, fast, efficient, and effective alternatives means of conducting financial transactions. However, questions such as whether true consumers' desire to use digital banks today are the same as their desires to use traditional banks and what factors cause motivation of customers to use digital banks, are important to study. So far, there is a paucity of research on what factors can influence customers' willingness to use digital banks in Indonesia, though such research offers a significant contribution to the banking sector, practical policies, and academia. Therefore, this research was conducted by exploring what factors can encourage individuals to use digital banks, which are currently growing quite rapidly.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

II.A. Technological Acceptance Model (TAM)

The Technological Acceptance Model or what is often known as the TAM model was first introduced by Davis.[16] TAM was formulated to refine previous models such as Theory of Reason Action (TRA) and Theory of Planned Behaviour (TPB). TAM describes a person's behaviour in adopting a new technology. TAM argues that the factors that influence a person's adoption of

[14] Siyal, Abdul Waheed, Ding Donghong, Waheed Ali Umrani, Saeed Siyal, and Shaharbano Bhand. "Predicting Mobile Banking Acceptance and Loyalty in Chinese Bank Customers." *SAGE Open* 9, no. 2 (2019). https://doi.org/10.1177/2158244019844084.

[15] Rebecca Chan, et al., "Towards an Understanding of Consumers' FinTech Adoption: The Case of Open Banking," *International Journal of Bank Marketing* 40, no. 4 (2022): 886–917, https://doi.org/10.1108/IJBM-08-2021-0397.

[16] Fred D Davis, "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," *MIS Quarterly* 13, no. 3 (1989): 319–40, https://doi.org/10.2307/249008.

technology are due to factors of perceived ease of use, perceived usefulness, and one's attitude towards the technology (attitude).[17]

Perceived ease of use is a perception that adopting technology does not require much effort (effortless). Meanwhile, perceived usefulness is the belief that adopting a technology has many benefits. In addition, the "attitude" factor is the desire of the user to want or not to adopt a technology.[18] Until now, TAM has been widely used to observe a person's behaviour in adopting technology in various fields of study.[19] Several studies have been conducted by various researchers related to the TAM model in various fields of study,[20] have found that the TAM model successfully predicts mobile banking technology adoption behaviour in Ethiopia and Finland.[21] This research has also found that all TAM variables have had a significant effect on technology adoption in online banking in Spain. Similar results as have been shown in the topic of online education, [22] TAM is the best predictor for predicting technology adoption in education. In this study, digital banking is a new technology in the banking sector that is different from banking in the previous era. With digital banks, the banking business is run with full technological support to make it easier and provide benefits to a wider range of customers with fewer physical offices. Therefore, the hypothesis is formulated as follows.

H1 = Perceived ease of use has a positive effect on perceived usefulness
H2 = Perceived usefulness has a positive effect on attitude
H3 = Perceived ease of use has a positive effect on attitude
H4 = Attitude influences behavioural intention
H5 = Behavioural intention has a positive effect on actual use

On the other hand, many researchers have made changes regarding external variables in the TAM (expanding TAM) model.[23] In the context of digital banking, researchers add several external variables outside the TAM, namely

---

[17] Fred D. Davis, "User Acceptance of Information Technology: System Characteristics, User Perceptions and Behavioral Impacts," *International Journal of Man-Machine Studies*, 1993, https://doi.org/10.1006/imms.1993.1022.

[18] *Ibid.*

[19] Marangunić and Granić, "Technology Acceptance Model"

[20] See also Chee, Chew Chu, et al. "Factors Affecting"; See also Abera Bekele Kejela, and Daniel Porath. "Influence of Attitude".

[21] See also Albort-Morant, Gema, et al. "Online Banking Adoption".

[22] Muhammad Rahies Khan, Faiza Siddiqui, Mubashir Ali Khan, and Yasir Rasool, "Technology Induction in Education During COVID-19 Is Recreation or a Curse?: Integration of Technological and Behavioral Factors from the Students' Perspective" European Journal of Tourism, Hospitality and Recreation 11, no.2 (2021): 267-279. https://doi.org/10.2478/ejthr-2021-0024.

[23] Ting Chi, "Understanding Chinese Consumer Adoption of Apparel Mobile Commerce: An Extended TAM Approach," *Journal of Retailing and Consumer Services* 44, (2018): 274–84, https://doi.org/10.1016/j.jretconser.2018.07.019.

perceived service quality and service innovation. Perceived service quality is an evaluation that has been carried out when a customer compares the service received with services expectations.[24] Meanwhile, some scholars[25] argue that perceived service quality is a comparison between service expectations and services received by customers. Thus, it can be concluded that perceived service quality is about the perception of a customer who has expectations about service compared to the reality of the service received.

The results show that perceived service quality is also the best predictor of customer decisions to adopt new technology. Further, some[26] found that perceived service quality influences people to use e-tax services.[27] It has also been found that perceived service quality affects perceived ease of use and perceived usefulness of online retail technology in China. In Jordan, it was found that perceived service quality and TAM influence customers to adopt telecommunications services.[28] In addition, service quality in digital business can increase customer trust in the company.[29] It can be concluded that digital businesses must still consider perceived service quality as an important factor in gaining customer trust. Moreover, in the digital banking business, which in principle is a service business (perceived service quality), even though it has been assisted by the presence of technology, excellent service is an obligation for digital banks in convincing customers and increase the number of digital users.

Apart from service quality, service innovation is important for the digital banking business. Banking digitalisation is a technological innovation introduced by management to present a new experience for customers, as well as to increase customer awareness that there are many benefits from using digital banks. Service innovation at digital banks can also increase customer loyalty because customers have been offered many benefits and conveniences in accessing excellent digital services.[30] Technology creates innovative services

---

[24] Olga Polyakova and Mohamed Mirza, "Perceived Service Quality Models: Are They Still Relevant?," *The Marketing Review* 15, no. 1 (2015): 59–82.

[25] See also Issam Alhadid, et al. "Predictors for E-Government Adoption".

[26] *Ibid.*

[27] See also Chi, "Understanding Chinese Consumer".

[28] Enas Ali, AL-Nawafleh, Ghaith Abdulraheem Ali ALSheikh, Abdul Aziz Abdulllah, and Abdul Malek Abdul. "Review of the Impact of Service Quality and Subjective Norms in TAM among Telecommunication Customers in Jordan." *International Journal of Ethics and Systems* 35, no. 1 (2019): 148–58, https://doi.org/10.1108/IJOES-07-2018-0101.

[29] Afrin Rifat, Nabila Nisha, and Mehree Iqbal. "Predicting E-Tax Service Adoption: Integrating Perceived Risk, Service Quality and TAM." *Journal of Electronic Commerce in Organizations* 17, no. 3 (2019): 71–100, https://doi.org/10.4018/JECO.2019070105.

[30] See also Wu, "The Study of Service Innovation".

that are very relevant at this time.[31] Therefore, the presence of a digital banking as a service innovation in the banking industry can provide usefulness and ease of use for customers. In addition, new experiences will be received by customers through digital banking, account opening, and all types of banking transactions that can be carried out effectively and efficiently through a connected application. Thus, the hypothesis in this study is:
H6 = Perceived service quality has a positive effect on perceived usefulness;
H7 = Perceived service quality has a positive effect on perceived ease of use;
H8 = Service innovation has a positive effect on perceived usefulness; and
H9 = Service innovation has a positive effect on perceived ease of use.

II.B. Risk Assurance

Risk is defined herein as the potential loss in using electronic services or e-services. Risk can take various forms, such as financial risk, e-service performance risk, individual risk, time risk, and cyber risk.[32] Risk is a barrier for customers to adoption of a technology.[33] In the context of digital services, the perception of risk can have a negative influence on the adoption of mobile banking technology.[34] This is because, when adopting technology, customers measure how much risk they will face compared to the benefits they will receive. In the context of digital banking, the risks that arise are quite diverse, including fraudulent transactions and personal data theft.[35] Therefore, risk assurance is needed to convince customers that their money is safe. TAM emphasises the factors that encourage customers to use technology including fintech technology. Digital banks are often targeted for cybercrime through theft of customer data, theft of funds, malware, and ransomware. Therefore, it is necessary to guarantee that digital banks have low risk so that customers feel comfortable having funds on deposit in an account at a digital bank.

Several studies have stated that risk influences customers not to adopt a technology. The perception of risk directly influences the adoption of open

---

[31] See also Edvardsson, et al. "Examining How Context Change".

[32] See also Rifat, et al. "Predicting E-Tax Service Adoption".

[33] Nwankwo, Cosmas Anayochukwu, Macdonald Isaac Kanyangale, and James Okechukwu Abugu. "The Basics of a Mobile Money-Based Financial Service: Perceptions of University Students in Nigeria." *Foundations of Management* 13, no. 1 (2021): 209–18, https://doi.org/10.2478/fman-2021-0016; See also Siyal, et al. "Predicting Mobile Banking Acceptance".

[34] Apostolos Giovanis, Pinelopi Athanasopoulou, Costas Assimakopoulos, and Christos Sarmaniotis. "Adoption of Mobile Banking Services: A Comparative Analysis of Four Competing Theoretical Models." *International Journal of Bank Marketing* 37, no. 5 (2019): 1165–89, https://doi.org/10.1108/IJBM-08-2018-0200.

[35] Deepti Mishra, Ibrahim Akman, and Alok Mishra, "Theory of Reasoned Action Application for Green Information Technology Acceptance," *Computers in Human Behavior* 36 (2014): 29–40, https://doi.org/10.1016/j.chb.2014.03.030.

banking technology.[36] Risk also affects a customer's attitude in accepting or rejecting innovation, especially innovation in the field of technology.[37] In particular, risk is also a factor that influences whether customers adopt mobile banking or not.[38] A study in China found that risk affects the motivation to use mobile banking for customers in Turkey. This influence not only affects the adoption of m-banking technology, the adoption of internet banking technology, where risk is a variable mediator of behavioural intention to use or not use the technology.[39] Meanwhile, perceived risk moderates the three quality dimensions of the customer experience.[40] Thus, it can be concluded that risk assurance can strengthen or weaken customer attitudes towards adopting new technologies.

In the context of digital banks, risk assurance is a variable that demands attention. The existence of an institution that guarantees customer finances is able to increase customer interest in using digital banks. This ensures that legal risks are safe and can increase customer confidence in using digital banks. Deposit insurance institutions are trusted to reduce potential financial risks because all funds deposited by a customer remain safe within a certain nominal amount. Thus, the customer's interest in adopting digital bank technology can be strengthened. Therefore, the hypothesis in this study is illustrated in the following figure.

H10 = Risk assurance moderates the relationship between attitude and behavioural intention

[36] See also Chan, et al. "Towards an Understanding".

[37] Yann Truong, "A Cross-Country Study of Consumer Innovativeness and Technological Service Innovation." *Journal of Retailing and Consumer Services* 20, no. 1 (2013): 130–37, https://doi.org/10.1016/j.jretconser.2012.10.014.

[38] Ziad Aldammargh, Rabah Abdeljawad, and Tareq Obaid. "Predicting Mobile Banking Adoption: An Integration of TAM and TPB with Trust and Perceived Risk." *Financial Internet Quarterly* 17, no. 3 (2021): 35–46.

[39] Kanokkarn Snae Namahoot, and Tipparat Laohavichien. "Assessing the Intentions to Use Internet Banking: The Role of Perceived Risk and Trust as Mediating Factors." *International Journal of Bank Marketing* 36, no. 2 (2018): 256–76, https://doi.org/10.1108/IJBM-11-2016-0159.

[40] Jay Trivedi, "Examining the Customer Experience of Using Banking Chatbots and Its Impact on Brand Love: The Moderating Role of Perceived Risk." *Journal of Internet Commerce* 18, no. 1 (2019): 91–111, https://doi.org/10.1080/15332861.2019.1567188.

Figure 1 shows a framework or research model in this research.

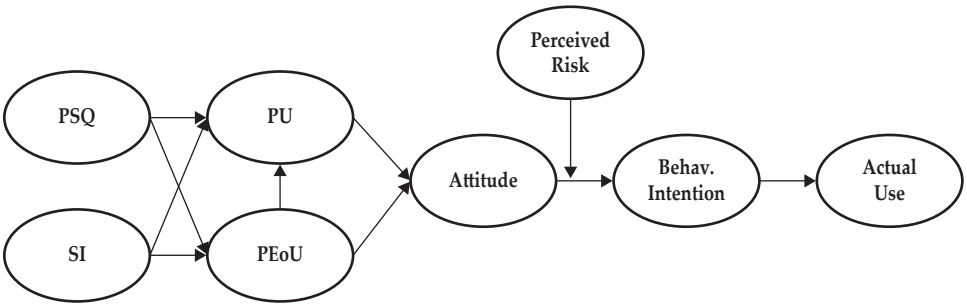

Figure 1. Conceptual Framework

III. METHODOLOGY

III.A. Research Design and Sample

This is quantitative research using surveys as the data collection method. The survey was used to obtain individual preferences for using digital banks such as Jenius, Jago Bank, Digibank, Neobank, LINE Bank, PermataMe, TMRW, SeaBank, Blu, and Motion. The sample in this study are digital bank users spread across Indonesia, both as active and passive users. Steps taken by researchers to ensure that the instrument is seriously and correctly researched is to provide convenience in filling out questionnaires using offline and online methods. In addition, the mechanism was designed for ease of access, anonymous, uses an even scale, and is interesting to read, ensuring respondents can answer honestly and honestly. Respondents also easily access information about research results.

III.B. Measurement Variables

Measurement variables are employed by instruments adopted from several previous studies. Perceived service quality (PSQ) and service innovation (SI) was measured through six questions.[41] Perceived ease of use (PEoU), perceived usefulness (PU), and attitude were measured by instruments developed specifically for this research.[42] Perceived ease of use and perceived usefulness were measured using six questions and attitude was measured

[41] C Jaw, OS Yu, KC Gehrt - International Conference on Economics, and Undefined 2012. "An Expanded Technology Acceptance Framework for E-Service Innovations: The Empirical Study on E-Learning." *Ipedr.Com* 38 (2012): 195–200.

[42] Paul J. Hu, Patrick Y.K. Chau, Olivia R. Liu Sheng, & Kar Yan Tam, "Examining the Technology Acceptance Model Using Physician Acceptance of Telemedicine Technology," *Journal of Management Information Systems* 16, no. 2 (1999): 91–112; Dwi Marlina Wijayanti, and Fachmi Pachlevi Yandra. "Islamic Fintech: A Solution for Financial Problem." *Global Review of Islamic Economics and Business* 9, no. 1 (2021): 065. https://doi.org/10.14421/grieb.2021.091-05.

using three questions. Furthermore, behavioural intention and actual use were measured using instruments from five and three questions respectively. Lastly, risk assurance was measured using five questions adopted from the previous study.[43]

III.C. Data Analysis

Data was tested using Partial Least Squares – Structural Equation Model (PLS-SEM). PLS-SEM is commonly used to estimate path models involving indirect latent constructs through several indicators. PLS is applied in two stages, first assessing the reliability and validity of the measurement model, and then assessing the structural model. This is done to ensure that the constructs measure is valid and reliable before conclusions can be drawn. The structural model is analysed by looking at the value of R^2 and the size of the path coefficient.[44] Through testing the model construct, the level of significance and beta value can be determined so that conclusions can be drawn regarding the hypothesis.

IV. RESULTS

IV.A. Respondents

Respondents in this study were 977 digital bank users spread across Indonesia. The researcher analysed the demographic characteristics of the respondents through several identifiers. The demographics were education level, age, income, and occupation. The sample looks quite diverse because the respondents were not controlled for profession or age. The main characteristics of the respondents are individuals who have used digital banks such as Jenius Bank, Jago Bank, Digibank, Neobank, LINE Bank, PermataMe, TMRW, SeaBank, Blu, and Motion. Table 1 shows the demographic information of the respondents.

[43] Grahame R. Dowling, and Richard Staelin, "A Model of Perceived Risk and Intended Risk-Handling Activity." *Journal of Consumer Research* 21, no. 1 (1994): 119. https://doi.org/10.1086/209386.

[44] F. Hartmann, Naranjo-Gil, D., & Perego, P. "The Effect of Leadership Styles and Use of Performance Measures on Managerial Work-Related Attitudes." *European Accounting Review* 19, no. 2 (2010): 275–310.

Table 1.
Respondent Demographics

Information	N	Percentage
Gender		
Male	348	35,62
Female	629	64,38
Education		
High school equivalent	361	36,95
Diploma	39	3,99
Undergraduate	563	57,62
Graduate	11	1,13
Postgraduate	3	0,31
Monthly Income		
<Rp 2.500.000	723	74,00
Rp 2.500.000-Rp 5.000.000	212	21,70
Rp 6.000.000-Rp10.000.000	20	2,05
>Rp 10.000.000	22	2,25
Job		
Civil servants	17	1,74
Self-employed	130	13,31
Private sector employee	22	2,25
Academics	10	1,02
Students	755	77,28
Others	43	4,40
Age		
<20 years	61	6,24
20 – 25 years	836	85,57
26 – 30 years	44	4,50
>35 years	36	3,69

IV.B. Validity and Reliability Testing

Validity and reliability tests are needed in this study to ensure that the instruments used to measure respondents' preferences are appropriate so that the results of this study can be generalised.[45] The validity test is carried out to ensure that the instrument measured the correct parameters regarding a concept, while the reliability test is carried out to see the accuracy of the accuracy of the reliability of the tool. An indicator is declared valid if it has an AVE value > 0.5, while an indicator is declared reliable if the composite reliability value is > 0.7 and Cronbach's alpha > 0.6.[46] The results of testing the validity and reliability can be seen in table 2.

[45] D. R. Cooper & Schindler, P. S. *Business Research Methods, Eleventh Edition*. New York: NY: McGraw Hill, 2011.

[46] Jr Hair, *Essential of Business Research Method* (USA: Sharpe.Inc, 2011).

Table 2.
Validity and Reliability Testing

Variables	Loadings	AVE	Composite Reliability	Cronbach's Alpha
Perceived Service Quality (PSQ)		0.692	0.931	0.911
PSQ1	0.780			
PSQ2	0.817			
PSQ3	0.822			
PSQ4	0.865			
PSQ5	0.862			
PSQ6	0.842			
Service Innovation (SI)		0.662	0.887	0.830
SI1	0.797			
SI2	0.822			
SI4	0.811			
SI5	0.825			
Perceived Usefulness (PU)		0.738	0.944	0.929
PU1	0.823			
PU2	0.870			
PU3	0.847			
PU4	0.885			
PU5	0.891			
PU6	0.835			
Perceived Ease of Use (PEoU)		0.773	0.953	0.941
PEoU1	0.884			
PEoU2	0.887			
PEoU3	0.889			
PEoU4	0.843			
PEoU5	0.899			
PEoU6	0.871			
Attitude (Att)		0.819	0.931	0.889
Att1	0.913			
Att2	0.913			
Att3	0.888			
Behavioural Intention (BI)		0.754	0.939	0.918
BI1	0.885			
BI2	0.899			
BI3	0.899			
BI4	0.857			
BI5	0.798			
Actual Use (ActUse)		0.845	0.942	0.908
ActUse1	0.926			
ActUse2	0.926			
ActUse3	0.905			
Perceived Risk Assurance (PR)		0.701	0.921	0.893
PR1	0.853			
PR2	0.869			
PR3	0.861			
PR4	0.802			
PR5	0.798			

Based on the information in table 2, it is identified that almost all indicators are valid and reliable. The SI 3 and SI 6 indicators were dropped from the test because they had a loading factor <0.6. The validity test shows that all factor loadings are >0.7 and the AVE value is >0.5, meaning that all the indicators listed in table 2 are declared valid. Furthermore, the results of the reliability test showed that the composite reliability value was > 0.7 and Cronbach's alpha > 0.6, so that all of these indicators were declared reliable.

IV.C. Hypothesis Test

After testing the validity and reliability, the model construct was tested to evaluate the support of the hypothesis. This study uses PLS SEM to identify the path coefficient values or t-values so that the significance of the results can be known. Figure 2 shows the result of testing the structural model using the Warp PLS application.

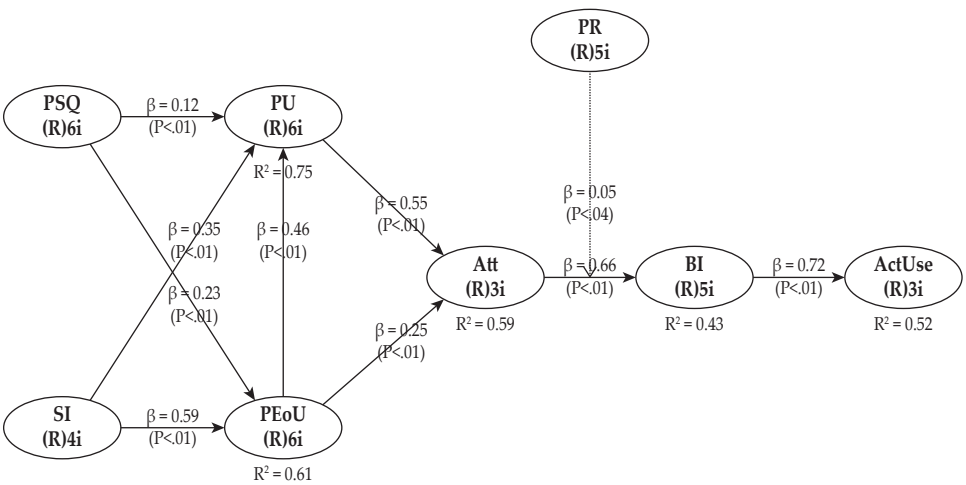

Figure 2. Structural Model Testing Results

The output of the structural model test in figure 2 shows the relationship between each variable, including the independent, moderating, and dependent variables. This study uses the main model of TAM which is modified by adding variables of perceived service quality and service innovation. The test results show that perceived service quality and service innovation have a significant effect on perceived usefulness and perceived ease of use. Furthermore, perceived ease of use influences perceived usefulness both positively and significantly. Perceived usefulness and perceived ease of use also influence attitude. Positively behavioural intention is influenced by attitude and affects actual use. Finally, the perceived risk assurance also moderates the relationship

between attitude and behavioural intention. A summary of hypothesis testing can be seen in table 3.

Table 3.
Hypothesis test

Path	Path Coefficient	P Values	R-Squared	Conclusion
H1 (PSQ → PU)	0,12	<.01	0.75	Supported
H2 (PSQ → PEoU)	0,23	<.01	0.61	Supported
H3 (SI → PU)	0,35	<.01	0.75	Supported
H3 (SI → PEoU)	0,59	<.01	0.61	Supported
H5 (PEoU → PU)	0,46	<.01	0.75	Supported
H6 (PU → Att)	0,55	<.01	0.59	Supported
H7 (PEoU → Att)	0,25	<.01	0.59	Supported
H8 (Att → BI)	0,66	<.01	0.43	Supported
H9 (BI → ActUse)	0,72	<.01	0.52	Supported
H10 (PR*Att → BI)	0,05	0.04	0.43	Supported

Additional analysis in figure 3 shows the level of literacy of respondents to risk assurance. The results of the analysis are contained in the following chart. Most of the respondents manifested a good level of literacy. This shows that risk assurance has succeeded in targeting the Z and Y generations of the market. This success is supported by the ability of the two generations to use smartphones and easily access to information in various media.

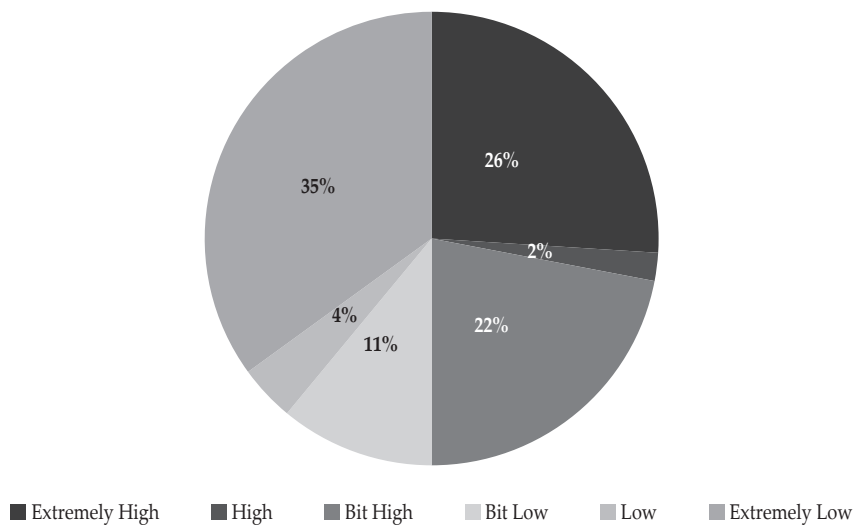

Figure 3. Respondents Literacy Level of Risk Assurance Institution

IV.D. Discussion and Analysis

This research explores the factors that can encourage individuals to use recently introduced digital banks including Jenius Bank, Jago Bank, Digibank, Neobank, LINE Bank, PermataMe, TMRW, SeaBank, Blu, and Motion. Based on the test results it can be seen that perceived service quality makes individuals feel the ease of using digital banks.[47] Perceived ease of use refers to the extent to which a person believes that using new technology requires less time and effort. Furthermore, perceived service quality has a positive relationship with perceived usefulness. The quality of services provided by digital banks provides benefits and meets the expectations of their users. Perceived service quality is determined based on whether the perceived service meets, exceeds, or fails to meet user expectations.[48]

Service Innovation (SI) is also a factor that motivates individuals to feel the convenience and usefulness of using digital banks. SI supports customers through new solutions that are better suited for carrying out daily financial transactions because service innovation considers digital banking a new and modern service product. In the current era, creative and innovative services is an opportunity for businesses.[49] This is because people have been motivated to carry out various activities by relying on technology. The latest banking service innovations can have a positive impact on customers so they can actualize perceived ease of use and perceived usefulness.

Other results show that perceived ease of use is a predictor of perceived usefulness. The ease of using digital banks determines the usefulness of the products they offer. When customers can use digital banking with little difficulty, customers can feel the benefits. PEoU affects perceived usefulness. In addition, perceived ease of use and perceived usefulness are predictors of attitude.[50] The convenience and usefulness of the product leads to the attitude of a user/customer. Customers think that digital banks can get work done quickly and are easy to use (can be used without the guidance of others),

---

[47] Li-Min Chuang, Chun-Chu Liu, and Hsiao-Kuang Kao. "The Adoption of Fintech Service: TAM Perspective." *International Journal of Management and Administrative Sciences (IJMAS* 3, no. 07 (2016): 1–15.

[48] Ibrahim H. Kayral, "Perceived Service Quality in Healthcare Organizations and a Research in Ankara by Hospital Type." *Journal of Ankara Studies* 2, no. 1 (2014): 22–34.

[49] Ming Chih Chen,, Shih Shiunn Chen, Hung Ming Yeh, & Wei Guang Tsaur, "The Key Factors Influencing Internet Finances Services Satisfaction: An Empirical Study in Taiwan," *American Journal of Industrial and Business Management* 6 (2016): 748–62.

[50] See also Li-Min Chuang, et al. "The Adoption of Fintech Service".; See also Siyal, et al. "Predicting Mobile Banking Acceptance".; See also Khan, et al. "Technology Induction".

therefore fostering a positive attitude.[51] In line with the research, customers believe digital banks are more useful and flexible for daily financial activities.[52]

Another interesting finding from the research is that attitude is a factor that drives individual motivations to use digital banks.[53] A positive attitude towards digital bank makes individuals interested in using it. This interest takes the form of an intention to use a digital banking. Interest in the end is also determined by the perceived risk assurance. Risk assurance provides guarantees for customer deposits, and this reduces anxiety about the risk of their deposits. Therefore, perceived risk assurance can strengthen individual intentions to use digital banks. Individual trust in risk assurance institutions is an important predictor for maximising digital bank performance.[54] That is, risk assurance moderates the relationship between attitude and behavioural intention. A sense of security gives individuals a positive attitude and higher motivation to use new services.[55]

Finally, behavioural intention is a predictor of actual use. Individuals who have the intention to use a digital banking will apply it by opening a digital bank account and using the service to carry out various financial transactions. The final stage of intention is actual behaviour.[56] Positive perceptions of digital banks will be manifested by registering accounts with digital banks and using these services both actively and passively.

---

[51] See also Chuang, et al. "The Adoption of Fintech Service".

[52] Anna Sophie Oertzen, and Gaby Odekerken-Schröder. "Achieving Continued Usage in Online Banking: A Post-Adoption Study." *International Journal of Bank Marketing* 37, no. 6 (2019): 1394–1418. https://doi.org/10.1108/IJBM-09-2018-0239; See also Siyal, et al. "Predicting Mobile Banking Acceptance".

[53] Md. Tanvir Alam Himel, Shahrin Ashraf, Tauhid Ahmed Bappy, Md Tanaz Abir, Md Khaled Morshed, and Md. Nazmul Hossain. "Users' Attitude and Intention to Use Mobile Financial Services in Bangladesh: An Empirical Study." *South Asian Journal of Marketing* 2, no. 1 (2021): 72–96. https://doi.org/10.1108/sajm-02-2021-0015.

[54] Sarawut Ramjan, and Purimprach Sangkaew, "Understanding the Adoption of Autonomous Vehicles in Thailand: An Extended TAM Approach," *Engineering Management in Production and Services* 14, no. 1 (2022): 49–62. https://doi.org/10.2478/emj-2022-0005.

[55] Haitham Jouda, "Expanding TAM and Investigating the Factors That Effect Consumer Intention to Adopt Mobile Banking in Palestine," *Financial Internet Quarterly* 16, no. 03 (2020): 29–50. https://doi.org/DOI: 10.2478/fiqf - 2020 - 0017.

[56] Anna Baj-Rogowska, "AutoCAD: Examination of Factors Influencing User Adoption," *Engineering Management in Production and Services* 12, no. 1 (2020): 45–56. https://doi.org/10.2478/emj-2020-0004; See also Aldammargh, et al. "Predicting Mobile Banking Adoption".; See also Kejela and Porath. "Influence of Attitude on Mobile Banking Acceptance.".

V. CONCLUDING REMARKS

V.A. Conclusion

This research has identified the factors that encourage people to use digital banking services. Based on the analysis, the main factors that determine the actual use of digital banking are the product factors themselves, namely service innovation, service quality, ease of use, usefulness, attitude, and behavioural intention. Digital banks can be an easy, fast, efficient, and effective alternative as a means of conducting financial transactions. In this era where effective and efficient results are expected, digital banks can provide a good solution because the products offered are the same as banks in general. Coupled with the role of risk assurance in guaranteeing customer funds, worries and doubts in using banking products can be reduced.

This research provides practical and theoretical contributions to banking. Practically, this research provides important information to banks that their market share is wide open avenues for deploying the right marketing strategy to increase the number of customers. In addition, the role of risk assurance is very strategic in encouraging innovation in the banking industry, namely through deposit insurance literacy for all Indonesian people. Theoretically, this study contributes to the literature by testing the TAM construct by adding external variables to analyse digital banks. The results of this study provide new knowledge in the academic world as here has been no previous research that addresses this topic.

V.B. Policy Recommendations

The results of this study show an important strategy that must be carried out both by policy makers and companies.

1. For the Risk Assurance Agency, the literacy of deposit guarantees needs to be performed by touching and providing education to the family because the family is the first to encourage their children to have a bank account. Adequate literacy from an early age will be more profitable because it will be more internalised.
2. For banks, marketing strategies to introduce digital banking need to be executed more precisely through cooperation with marketplaces, e-commers, securities institutions, retail companies, and so forth. The analysis shows that many people use digital banks because they can only make transactions on several platforms if they have a digital bank account or have a digital bank balance. In addition, marketing can also be done by providing certain discounts on parquet if transactions using digital banks. Thus, the digital bank market share will increase.

ABBREVIATIONS

TAM	: Technological Acceptance Model
PSQ	: Perceived Service Quality
SI	: Service Innovation
PU	: Perceived Usefulness
PEoU	: Perceived Ease of Use
ICT	: Information, Communication, and Technology
TRA	: Theory of Reason Action
TPB	: Theory of Planned Behaviour

REFERENCES

Abu-taieh, Evon M, Issam Alhadid, Sabah Abu-tayeh, and Rami S Alkhawaldeh. "Continued Intention to Use of M-Banking in Jordan by Integrating UTAUT , TPB , TAM and Service Quality with ML," 2022.

Albort-Morant, Gema, Carlos Sanchís-Pedregosa, and Jazmin R. Paredes Paredes. "Online Banking Adoption in Spanish Cities and Towns. Finding Differences through TAM Application." *Economic Research-Ekonomska Istrazivanja* 35, no. 1 (2022): 854–72. https://doi.org/10.1080/1331677X.2021.1945477.

Aldammargh, Ziad, Rabah Abdeljawad, and Tareq Obaid. "Predicting Mobile Banking Adoption: An Integration of TAM and TPB with Trust and Perceived Risk." *Financial Internet Quarterly* 17, no. 3 (2021): 35–46.

Alhadid, Issam, Evon Abu-taieh, Rami S Alkhawaldeh, and Sufian Khwaldeh. "Predictors for E-Government Adoption of SANAD App . Services Integrating UTAUT , TPB , TAM Trust , and Perceived," 2022, 1–23.

AL-Nawafleh, Enas Ali, Ghaith Abdulraheem Ali ALSheikh, Abdul Aziz Abdulllah, and Abdul Malek Abdul. "Review of the Impact of Service Quality and Subjective Norms in TAM among Telecommunication Customers in Jordan." *International Journal of Ethics and Systems* 35, no. 1 (2019): 148–58. https://doi.org/10.1108/IJOES-07-2018-0101.

Altin Gumussoy, Cigdem, Aycan Kaya, and Erhan Ozlu. "Determinants of Mobile Banking Use: An Extended TAM with Perceived Risk, Mobility Access, Compatibility, Perceived Self-Efficacy and Subjective Norms," 2018, 225–38. https://doi.org/10.1007/978-3-319-71225-3_20.

Anouze, Abdel Latef M., and Ahmed S. Alamro. "Factors Affecting Intention to Use E-Banking in Jordan." *International Journal of Bank Marketing* 38, no. 1 (2020): 86–112. https://doi.org/10.1108/IJBM-10-2018-0271.

Baj-Rogowska, Anna. "AutoCAD: Examination of Factors Influencing User Adoption." *Engineering Management in Production and Services* 12, no. 1 (2020): 45–56. https://doi.org/10.2478/emj-2020-0004.

Belloumi, Mounir, and Kamel Touati. "Do FDI Inflows and ICT Affect Economic Growth? An Evidence from Arab Countries." *Sustainability* 14, no. 10 (May 21, 2022): 6293. https://doi.org/10.3390/su14106293.

Bi, Xuehao, Bo Wen, and Wei Zou. "The Role of Internet Development in China's Grain Production: Specific Path and Dialectical Perspective." *Agriculture* 12, no. 3 (March 8, 2022): 377. https://doi.org/10.3390/agriculture12030377.

Bitkina, Olga Vl., Jaehyun Park, and Hyun K. Kim. "Measuring User-Perceived Characteristics for Banking Services: Proposing a Methodology." *International Journal of Environmental Research and Public Health* 19, no. 4 (February 18, 2022): 2358. https://doi.org/10.3390/ijerph19042358.

Chan, Rebecca, Indrit Troshani, Sally Rao Hill, and Arvid Hoffmann. "Towards an Understanding of Consumers' FinTech Adoption: The Case of Open Banking." *International Journal of Bank Marketing* 40, no. 4 (2022): 886–917. https://doi.org/10.1108/IJBM-08-2021-0397.

Chee, Chew Chu, Rosli Mahmood, and Azizan Mohamed-Isa. "Factors Affecting Mobile Banking Adoption." *Journal of Information Technology Management* 13, no. 3 (2021): 116–25. https://doi.org/10.22059/JITM.2021.83117.

Chen, Ming Chih, Shih Shiunn Chen, Hung Ming Yeh, & Wei Guang Tsaur. "The Key Factors Influencing Internet Finances Services Satisfaction: An Empirical Study in Taiwan." *American Journal of Industrial and Business Management* 6 (2016): 748–62.

Chi, Ting. "Journal of Retailing and Consumer Services Understanding Chinese Consumer Adoption of Apparel Mobile Commerce : An Extended TAM Approach." *Journal of Retailing and Consumer Services* 44, no. April (2018): 274–84. https://doi.org/10.1016/j.jretconser.2018.07.019.

Chuang, Li-Min, Chun-Chu Liu, and Hsiao-Kuang Kao. "The Adoption of Fintech Service: TAM Perspective." *International Journal of Management and Administrative Sciences (IJMAS* 3, no. 07 (2016): 1–15.

———. "International Journal of Management and Administrative Sciences (IJMAS) The Adoption of Fintech Service: TAM Perspective." *International Journal of Management and Administrative Sciences (IJMAS* 3, no. 07 (2016): 1–15.

Chuang, Li-min, Chun-chu Liu, and Hsiao-kuang Kao. "The Adoption of Fintech Service : TAM Perspective" 3, no. 07 (2016): 1–15.

Cooper, D. R., & Schindler, P. S. *Business Research Methods, Eleventh Edition*. New York: NY: McGraw Hill, 2011.

Davis, F.D. "A Technology Acceptance Model for Empirically Testing New End-User Information System: Theory and Results." Massachusetts Institute of Technology, Cambridge, MA, 1986.

———. "A Technology Acceptance Model for Empirically Testing New End-User Information System: Theory and Results." Massachusetts Institute of Technology, Cambridge, MA, 1986.

Davis, Fred D. "Perceived Usefulness , Perceived Ease of Use , and User Acceptance of Information Technology." *MIS Quarterly* 13, no. 3 (1989): 319–40. https://doi.org/10.2307/249008.

Davis, Fred D. "User Acceptance of Information Technology: System Characteristics, User Perceptions and Behavioural Impacts." *International Journal of Man-Machine Studies*, 1993. https://doi.org/10.1006/imms.1993.1022.

Dowling, Grahame R., and Richard Staelin. "A Model of Perceived Risk and Intended Risk-Handling Activity." *Journal of Consumer Research* 21, no. 1 (1994): 119. https://doi.org/10.1086/209386.

Edvardsson, Bo, Pennie Frow, Elina Jaakkola, Timothy Lee Keiningham, Kaisa Koskela-Huotari, Cristina Mele, and Alastair Tombs. "Examining How Context Change Foster Service Innovation." *Journal of Service Management* 29, no. 5 (2018): 932–55. https://doi.org/10.1108/JOSM-04-2018-0112.

Evanschitzky, Heiner, Gopalkrishnan R. Iyer, Kishore Gopalakrishna Pillai, Peter Kenning, and Reinhard Schütte. "Consumer Trial, Continuous Use, and Economic Benefits of a Retail Service Innovation: The Case of the Personal Shopping Assistant." *Journal of Product Innovation Management* 32, no. 3 (2015): 459–75. https://doi.org/10.1111/jpim.12241.

Giovanis, Apostolos, Pinelopi Athanasopoulou, Costas Assimakopoulos, and Christos Sarmaniotis. "Adoption of Mobile Banking Services: A Comparative Analysis of Four Competing Theoretical Models." *International Journal of Bank Marketing* 37, no. 5 (2019): 1165–89. https://doi.org/10.1108/IJBM-08-2018-0200.

H. Jouda. "Expanding TAM and Investigating the Factors That Effect Consumer Intention to Adopt Mobile Banking in Palestine." *Financial Internet Quarterly* 16, no. 03 (2020): 29–50. https://doi.org/DOI: 10.2478/fiqf - 2020 - 0017.

Hair, Jr. *Essential of Business Research Method.* USA: Sharpe.Inc, 2011.

Hartmann, F., Naranjo-Gil, D., & Perego, P. "The Effect of Leadership Styles and Use of Performance Measures on Managerial Work-Related Attitudes." *European Accounting Review* 19, no. 2 (2010): 275–310.

Himel, Md. Tanvir Alam, Shahrin Ashraf, Tauhid Ahmed Bappy, Md Tanaz Abir, Md Khaled Morshed, and Md. Nazmul Hossain. "Users' Attitude and Intention to Use Mobile Financial Services in Bangladesh: An Empirical Study." *South Asian Journal of Marketing* 2, no. 1 (2021): 72–96. https://doi.org/10.1108/sajm-02-2021-0015.

Hu, J. Paul, Patrick Y.K. Chau, Olivia R. Liu Sheng, & Kar Yan Tam. "Examining the Technology Acceptance Model Using Physician Acceptance of Telemedicine Technology." *Journal of Management Information Systems* 16, no. 2 (1999): 91–112.

Jaw, C, OS Yu, KC Gehrt - International Conference on Economics, and Undefined 2012. "An Expanded Technology Acceptance Framework for E-Service Innovations: The Empirical Study on E-Learning." *Ipedr.Com* 38 (2012): 195–200.

Kayral, Ibrahim H. "Perceived Service Quality in Healthcare Organizations and a Research in Ankara by Hospital Type." *Journal of Ankara Studies* 2, no. 1 (2014): 22–34.

Kejela, Abera Bekele, and Daniel Porath. "Influence of Attitude on Mobile Banking Acceptance and Factors Determining Attitude of End-Users in Ethiopia." *Journal of Internet and Digital Economics* 2, no. 1 (2022): 68–88. https://doi.org/10.1108/jide-08-2021-0007.

Khan, Muhammad Rahies, Faiza Siddiqui, Mubashir Ali Khan, and Yasir Rasool. "Technology Induction in Education During COVID-19 Is Recreation or a Curse ?: Integration of Technological and Behavioural Factors from the Students ' Perspective" 11, no. 2 (2021): 267–79.

Marangunić, Nikola, and Andrina Granić. "Technology Acceptance Model: A Literature Review from 1986 to 2013." *Universal Access in the Information Society* 14, no. 1 (2015): 81–95. https://doi.org/10.1007/s10209-014-0348-1.

Mbama, Cajetan Ikechukwu, Patrick Ezepue, Lyuba Alboul, and Martin Beer. "Digital Banking, Customer Experience and Financial Performance." *Journal of Research in Interactive Marketing* 12, no. 4 (October 8, 2018): 432–51. https://doi.org/10.1108/JRIM-01-2018-0026.

Mishra, Deepti, Ibrahim Akman, and Alok Mishra. "Theory of Reasoned Action Application for Green Information Technology Acceptance." *Computers in Human Behavior* 36 (2014): 29–40. https://doi.org/10.1016/j.chb.2014.03.030.

Nam, Kiheung, Zoonky Lee, and Bong Gyou Lee. "How Internet Has Reshaped the User Experience of Banking Service?" *KSII Transactions on Internet and Information Systems* 10, no. 2 (2016): 684–702. https://doi.org/10.3837/tiis.2016.02.014.

Namahoot, Kanokkarn Snae, and Tipparat Laohavichien. "Assessing the Intentions to Use Internet Banking: The Role of Perceived Risk and Trust as Mediating Factors." *International Journal of Bank Marketing* 36, no. 2 (2018): 256–76. https://doi.org/10.1108/IJBM-11-2016-0159.

Nwankwo, Cosmas Anayochukwu, Macdonald Isaac Kanyangale, and James Okechukwu Abugu. "The Basics of a Mobile Money-Based Financial Service:

Perceptions of University Students in Nigeria." *Foundations of Management* 13, no. 1 (2021): 209–18. https://doi.org/10.2478/fman-2021-0016.

Oertzen, Anna Sophie, and Gaby Odekerken-Schröder. "Achieving Continued Usage in Online Banking: A Post-Adoption Study." *International Journal of Bank Marketing* 37, no. 6 (2019): 1394–1418. https://doi.org/10.1108/IJBM-09-2018-0239.

Polyakova, Olga, and Mohamed Mirza. "Perceived Service Quality Models: Are They Still Relevant?" *The Marketing Review* 15, no. 1 (2015): 59–82.

Ramjan, Sarawut, and Purimprach Sangkaew. "Understanding the Adoption of Autonomous Vehicles in Thailand: An Extended TAM Approach." *Engineering Management in Production and Services* 14, no. 1 (2022): 49–62. https://doi.org/10.2478/emj-2022-0005.

Rifat, Afrin, Nabila Nisha, and Mehree Iqbal. "Predicting E-Tax Service Adoption: Integrating Perceived Risk, Service Quality and TAM." *Journal of Electronic Commerce in Organizations* 17, no. 3 (2019): 71–100. https://doi.org/10.4018/JECO.2019070105.

Siyal, Abdul Waheed, Ding Donghong, Waheed Ali Umrani, Saeed Siyal, and Shaharbano Bhand. "Predicting Mobile Banking Acceptance and Loyalty in Chinese Bank Customers." *SAGE Open* 9, no. 2 (2019). https://doi.org/10.1177/2158244019844084.

Trivedi, Jay. "Examining the Customer Experience of Using Banking Chatbots and Its Impact on Brand Love: The Moderating Role of Perceived Risk." *Journal of Internet Commerce* 18, no. 1 (2019): 91–111. https://doi.org/10.1080/15332861.2019.1567188.

Truong, Yann. "A Cross-Country Study of Consumer Innovativeness and Technological Service Innovation." *Journal of Retailing and Consumer Services* 20, no. 1 (2013): 130–37. https://doi.org/10.1016/j.jretconser.2012.10.014.

Wijayanti, Dwi Marlina, and Fachmi Pachlevi Yandra. "Islamic Fintech: A Solution for Financial Problem." *Global Review of Islamic Economics and Business* 9, no. 1 (2021): 065. https://doi.org/10.14421/grieb.2021.091-05.

Wu, Chih Wen. "The Study of Service Innovation for Digiservice on Loyalty." *Journal of Business Research* 67, no. 5 (2014): 819–24. https://doi.org/10.1016/j.jbusres.2013.11.051.

Youssef, Adel ben, Mounir Dahmani, and Ludovic Ragni. "ICT Use, Digital Skills and Students' Academic Performance: Exploring the Digital Divide." *Information* 13, no. 3 (March 3, 2022): 129. https://doi.org/10.3390/info13030129.

Z. Aldammagh, R. Abdeljawad, T. Obaid. "Predicting Mobile Banking Adoption: An Integration of TAM and TPB with Trust and Perceived Risk." *Financial Internet Quarterly* 17, no. 3 (2021): 35–46. https://doi.org/10.2478/Fiqf - 2021 - 0017.

Zhang, Yan. "Influence Effect of Internet on the Optimization of China's International Trade Structure Based on Gravity Model." *Mathematical Problems in Engineering* 2022 (July 13, 2022): 1–8. https://doi.org/10.1155/2022/4771947.

This page is intentionally left blank