Factors Influencing the Intention to Use Digital Banking Services among Consumers in Perak, Malaysia

Lee Min Syen[1,*], Chai Le Yi[1]

[1] Quest International University, Perak, Malaysia

ARTICLE INFO

ABSTRACT

Digital banking services include all the traditional banking services that are available 24/7 on mobile devices, computers, and compatible smart devices, without the need for a customer's presence in the bank branches. However, the adoption of digital banking services is still low among Malaysians as compared to other nations. The purpose of this study is to examine the factors influencing the adoption of digital banking services among consumers in Perak, Malaysia. The study analyses the factors which consist of perceived usefulness, perceived ease of use, perceived risk, trust, and social influence. This study uses the Theory of Technology Acceptance Model, Extended Technology Acceptance Model, and Theory of Planned Behaviour to study the relationship between the independent variables and dependent variable. Additionally, the research's data was collected through a questionnaire survey which was distributed by using the approach of purposive sampling. A total of 150 completed surveys collected from the consumers in Perak, Malaysia. Based on this study which highlighted that the two significant predictors of the consumers' intention to adopt digital banking were perceived ease of use and perceived usefulness. This indicated that digital banking would be more likely to be adopted by the consumers when it satisfied their expectations in terms of user-friendly and beneficial whereas other variables namely perceived risk, trust, and social influence had less significant impact on the adoption of digital banking services. The implications of this study were that digital banking providers should prioritize digital banking' usage and the benefits that consumers can gain to attract more adoption. As perceived risk, trust, and social influence were less influential, additional factors could be explored by the future researchers to be able to better understand what encourages the adoption of digital banking. Thus, new motivators could be unlocked which help in improving the adoption rate. The finding of this study can bring contribution to the field of digital banking research since there was limited studies on the intention to adopt digital banking services, specifically in Perak, Malaysia. Hence, it is advisable to conduct a comparison study in order to assess the adoption of digital banking services among consumers in Perak, Malaysia.

Keywords:
Perceived usefulness; perceived ease of use; perceived risk; trust; social influence

* *Corresponding author.*
E-mail address: minsyen.lee@qiu.edu.my

1. Introduction

Digital banking was regarded as the digitalization of traditional banking activities and services that had initially allowed consumers only access to a physical branch of a bank to enjoy its services with no limited time and locations. In other words, Digital bank was a financial institution where consumers were able to use e-platform to make financial transactions remotely by using a mobile device. Due to technological advancement which included the utilization of the internet, smartphones, and digital infrastructure, many banks had transformed their physical services to online banking. Nowadays, digital banking has embedded technological features such as AI support system, 24/7 chat box, and strengthened security. The research literature highlighted some challenges among the five variables towards the dependent variable namely factor influencing the intention to use digital banking services among consumers in Perak, Malaysia. According to Kang *et al.,* [85] perceived usefulness may bring issues such as out-of-sync account balances and compatibility in payment methods. For instance, Apple Pay only operates on Apple devices. This may bring the experience to be not useful as consumers tend to struggle to view a full value and difficult to make payment with different operating systems of devices. Thus, reducing their daily financial tasks. The perceived ease of use also contains an issue of functionality issues and slow application speeds hinder their adoption. Thus, a system with a simplified, intuitive interfaces could improve consumers satisfaction and increase adoption by reducing the technical obstacle to digital banking. Besides, based on George *et al.,* [29] stated that the perceived risk such as cyber-attacks may affect the consumers to adopt digital banking services if they found the system was not stable and lack of a robust security. These may encourage the consumers' uncertainties and hesitation about the reliability and safety of digital banking. The trust had also come into an attention of the consumers' when their data privacy which stored online was not safe enough. When the users were not confident enough that the data was protected which may reduce the tendency of using online banking. Lastly, based on the research on [58] although there was a high social adoption rate of digital banking during pandemic period which led to post-pandemic, if consumers lack of familiarity or face complexity with the existing services that was introduced by the bank, it may eventually lead to low adoption rate because consumers could not influence among themselves to adopt a new system. As a result, these are the factors that will reduce the adoption of digital banking services if consumers face challenges in adopting digital banking.

2. Literature Review
2.1 Intention to Use Digital Banking Service

The consistent use of intention by Malaysian consumers forms the basis of their expectations of digital banking. After a consumer's first interaction with a particular service or product, this dependent variable can be used to determine whether they decide to continue using it. It also helps to understand whether a person intends to engage in a particular behaviour again [11]. Constant use deliberate behaviours and decisions by customers are inherently motivated by an intention, as demonstrated by factors like ease of use, experience-based belief and expectation, and affective and emotional decision-making which encompasses contentment as well as mental immersion.

2.2 Perceived Ease of Use

Perceived ease of use is a crucial aspect of the technology acceptance model, significantly influencing users' behaviour towards adopting new systems [63]. It refers to the extent to which

individuals believe a technology is straightforward and free from unnecessary complexity [55]. When services are user-friendly and easy to navigate, they are more likely to attract consumers [31]. The Unified Theory of Acceptance and Use of Technology (UTAUT) emphasizes that ease of use can strongly affect users' intentions to adopt a technology [8].

Research shows that perceived ease of use enhances satisfaction with digital banking, as complicated processes discourage users from engaging with e-banking services [12,35]. In the Philippines, for instance, user-friendly digital-only banks positively influence customer willingness to adopt these platforms [78]. Similarly, in Saudi Arabia, perceptions of simplicity significantly impact digital banking adoption [10].

RO1: To examine whether perceived ease of use influences the intention to use digital banking services among consumers in Perak, Malaysia.
H10: There is no significant relationship between perceived ease of use and intention to use digital banking services among consumers in Perak, Malaysia.
H1A: There is a significant relationship between perceived ease of use and intention to use digital banking services among consumers in Perak, Malaysia.

2.3 Perceived Usefulness

Perceived usefulness refers to individuals' confidence that using a particular information system will enhance their performance and productivity [66]. Tahar *et al.,* [72] suggest that users tend to subjectively agree that new technologies can make them more efficient in both business and daily life, increasing their perceived usefulness. In digital banking, perceived usefulness relates to how customers believe a financial system will improve their productivity. Customers tend to feel more positively about services they find useful, increasing their willingness to use them [86]. Digital banking also optimizes the back-end processes of banks, benefiting both customers and banks [51]. In recent years, global banking has seen a notable rise in digital technology adoption. Alnemer *et al.,* [10] for instance, conducted a study across 144 countries, utilizing data from the 2017 Global Inclusive Fintech Index to analyze trends related to digital banking adoption. The findings showed that perceived usefulness has a significant positive impact on digital banking adoption, especially in Saudi Arabia, where consumers prefer digital banking for its convenience and superior services compared to traditional banking.

Digital banking operates through the Internet, using digital devices linked to computer software to facilitate online transactions between banks and customers [77]. Nguyen's *et al.,* [50] research shows that perceived usefulness plays a key role in encouraging Vietnamese consumers to adopt digital banking, with many customers recognizing the advantages of digital services over face-to-face interactions, such as saving time and offering a broader range of services.

RO2: To investigate whether perceived usefulness influences the intention to use digital banking services among consumers in Perak, Malaysia.
H20: There is no significant relationship between perceived usefulness and intention to use digital banking services among consumers in Perak, Malaysia.
H2A: There is a significant relationship between perceived usefulness and intention to use digital banking services among consumers in Perak, Malaysia.

2.4 Trust

Trust is a critical factor in digital banking, particularly regarding security and privacy. Systems managing transactional data must prioritise security [59], as the financial and personal information provided to digital-only banks can be misused [62]. Privacy concerns, defined as individuals' rights to control personal information, significantly affect users' willingness to disclose data [59]. Data security issues can lead to dissatisfaction and limit the use of e-banking apps [1].

Despite the convenience of digital banking, security concerns persist, as cybercrime threatens data security and privacy [13,87]. The perception of security directly influences users' willingness to adopt digital banking, with many believing it to be a safe option [84]. However, real incidents of fraud or data breaches can erode trust, making users less inclined to engage in digital transactions [32]. Research indicates that security flaws deter users from adopting internet-only banks [39]. In contrast, some studies suggest that security concerns may be less impactful in regions like Malaysia, where users have more trust in banks to protect their data [40,62].

RO3: To assess whether trust influences the intention to use digital banking services among consumers in Perak, Malaysia.

H30: There is no significant relationship between trust influences and intention to use digital banking services among consumers in Perak, Malaysia.

H3A: There is a significant relationship between trust influences and intention to use digital banking services among consumers in Perak, Malaysia.

2.5 Social Influence

Social influence refers to changes in an individual's beliefs or behaviours driven by others' actions or opinions [88]. It reflects the extent to which individuals perceive that important people in their lives believe they should adopt new technologies [53]. This influence is particularly strong in disruptive innovations, as individuals often rely on the experiences and opinions of their social circles when considering new technologies [68]. When people observe others using fintech services, they are more likely to follow suit [14].

In the context of digital banking, studies have shown that social influence significantly impacts users' intentions to adopt mobile banking applications. For instance, research involving 473 Indian mobile banking users found a positive correlation between social influence and their intention to adopt these services [65]. Furthermore, social connections can create a reciprocal effect that encourages adoption, prompting banks to engage with influential community members [28].

RO4: To examine whether social influence influences the intention to use digital banking services among consumers in Perak, Malaysia.

H40: There is no significant relationship between social influence and intention to use digital banking services among consumers in Perak, Malaysia.

H4A: There is a significant relationship between social influence and intention to use digital banking services among consumers in Perak, Malaysia.

2.6 Perceived Risk

Perceived risk encompasses various consumer concerns, including financial, physical, performance, social, and psychological risks, which complicate behavioural intentions toward adopting new technologies [21]. Consumers often express worries about connectivity issues, electronic piracy, and cybercrimes, making them reluctant to engage with online banking platforms

[55]. This uncertainty is a critical factor in determining whether individuals will embrace new services or technologies [60]. High levels of uncertainty aversion in society further discourage e-commerce adoption [34], and studies show a strong correlation between perceived risk and mobile commerce intentions in Taiwan [82].

Perceived risk, defined as the uncertainty associated with adverse outcomes in internet banking, significantly impacts customer decisions [61]. Security and privacy concerns are among the primary risk factors influencing the adoption of digital banking services [36]. Research indicates that perceived risk is a substantial barrier to online banking acceptance, with financial risk particularly affecting users' perceptions [17]. Consumers often resist adopting digital banking due to trust issues arising from these perceived risks [42,69].

RO5: To investigate whether perceived risk influences the intention to use digital banking services among consumers in Perak, Malaysia.

H50: There is no significant relationship between perceived risk and intention to use digital banking services among consumers in Perak, Malaysia.

H5A: There is a significant relationship between perceived risk and intention to use digital banking services among consumers in Perak, Malaysia.
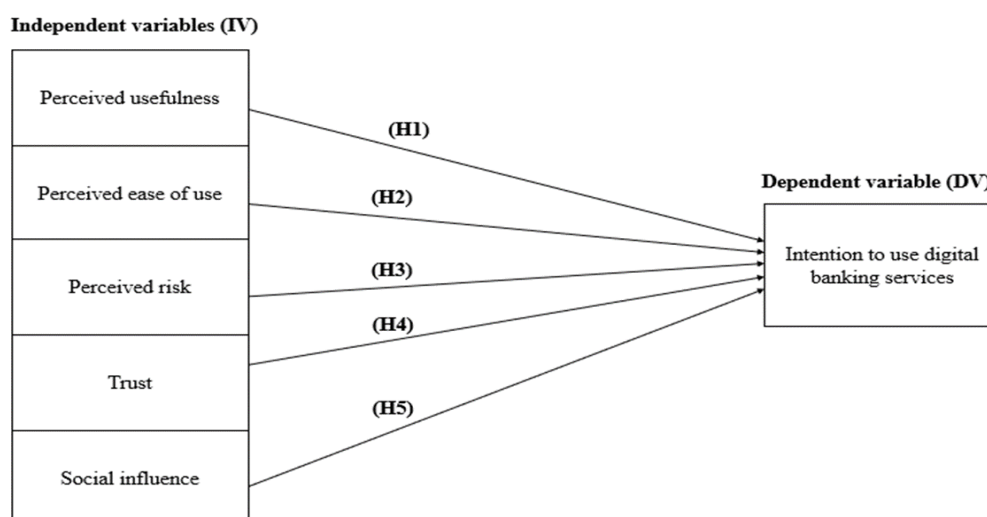
Fig. 1. Conceptual framework

3. Methodology

This study was conducted using primary data to gather an accurate data via online questionnaires distributed to consumers in Perak, Malaysia, such as the platforms on Google Forms, email, WhatsApp, Facebook, and Instagram [33]. Purposive sampling was used in our study, the adoption of digital banking among Perak's consumers in Malaysia from 18 until 66 years old and above. This sampling allowed the researchers to focus on this range of consumers and the results could satisfy their expectations because only specific areas of interest were chosen [20]. A sample size of 150 respondents aged 18–66 was targeted to analyze factors influencing digital banking adoption [22]. The questionnaire was utilised which classified into demographic and variable sections, using a 5 point Likert scale. The target population comprises consumers in Perak, Malaysia. The sampling frame consists of consumers in Perak, Malaysia, aiming to identify factors influencing the adoption of digital banking services. Probabilistic method was utilised to recruit consumers within a specific area and time frame. The sampling location for this study is in Perak, Malaysia. A pilot test consisting of 30 participants to be tested on the questionnaire's reliability with the result of Cronbach's alpha scores

ranging from 0.849 to 0.919, demonstrating strong consistency for both dependent and independent variables.

4. Findings
4.1 Descriptive Analysis
Demographic Profile

58.7% of respondents were female and 41.3% male. The majority (96%) were aged between 18 and 25 years. Approximately 70% identified as Chinese, and 44.7% held a degree.

4.2 Scale Measurement (Reliability Test)

Table 1
Cronbach's Alpha reliability

Variables	Coefficient of Cronbach Alpha	Number of items
Dependent variable		
Intention to use digital banking service	0.956	5
Independent variable		
Perceived ease of use	0.948	4
Perceived usefulness	0.932	4
Trust	0.945	5
Social influence	0.927	5
Perceived risk	0.915	5

Based on Table 1 above, Cronbach's alpha is used to assess both the independent variable and the dependent variable on a 5-point Likert scale. The dependent variable and independent variable have Cronbach's Alpha coefficients above 0.9, indicating a high level of internal consistency for the scale. These results suggest that the survey items for this research are highly consistent and reliable.

4.3 Inferential Analysis (Pearson Correlation Coefficient Analysis)

As shown in Table 2, all independent variables exhibited a positive association with the intention to adopt digital banking, with Pearson correlation coefficients ranging from 0.433 to 0.766, all statistically significant at the $p < 0.001$ level. Specifically, trust, social influence, and perceived risk demonstrated moderate positive correlations with intention, whereas perceived ease of use and perceived usefulness revealed strong positive relationships. These findings are consistent with prior literature emphasizing the critical role of perceived usefulness and ease of use in influencing digital banking adoption. Meanwhile, trust, social influence, and perceived risk, while still significant, contributed to a lesser extent. Given that all correlation coefficients were significant and fell within the accepted threshold ($r = 0.433$ to 0.766), discriminant validity among constructs was adequately established [27].

Table 2
Pearson correlation coefficient analysis

Independent variables	Pearson Correlation	Sig. (2-tailed	N
Perceived ease of use	.762**	<.001	150
Perceived usefulness	.769**	<.001	150
Trust	.633**	<.001	150
Social influence	.566**	<.001	150
Perceived risk	.433**	<.001	150

** Correlation is significant at the 0.01 level (2-tailed).

4.4 Multiple Regression Analysis

Based on the table 3 below, the model summary of the multiple linear regression analysis between 5 independent variables and dependent variable of intention to use digital banking services. These independent variables accounted for about 64.7% percent of the variation in this regression equation model.

Table 3
Model summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	$.805^a$	.647	.635	.59147
Predictors:(Constant), PR, PEOU, SI, TRU, PU				

Based on Table 4 below, this analysis tests whether the overall regression model fits the data well. They predicted the dependent variable, intention to use digital banking, with a statistical significance of 52.883 at a level below 0.001.

Table 4
ANOVA

$ANOVA^b$					
Model	Sum of Square		Mean Square	F.	Sig.
Regression	92.502	5	18.5	52.883	$< .001^b$
Residual	50.377				
Total	142.879				
a. Dependent Variable: ITOU					
b. Predictors: (Constant), PR, PEOU, SI, TRU, PU					

The Table 5 below shows that the intention to use digital banking can be fully predicted by all the independent variables.

Table 5
Coefficients and hypothesis test result

Coefficients						Hypothesis test result	
Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Accept (P value<0.05)	Reject (P value>0.05)
	β	Std. error	Beta				
(Constant)	.356	.229		1.554	.122		
PEOU	.368	.098	.355	3.765	<.001	✓	
PU	.401	.114	.365	3.513	<.001	✓	
TRU	.195	.104	.177	1.870	.064		✓
SI	.016	.078	.016	.204	.838		✓
PR	-.063	.084	-.058	-.758	.450		✓
a. Dependent Variable: ITOU							

First, the perceived ease of use has an unstandardized coefficient of 0.368. This implies that for each unit increase in perceived ease of use, there is a corresponding 0.368 unit increase in the intention to use digital banking. This finding aligns with the study by Nguyen *et al.,* [49] which found that perceived ease of use significantly influences the intention to use digital banking.

Second, the perceived usefulness has an unstandardized coefficient of 0.401, indicating that an increase of one unit in perceived usefulness leads to a 0.401 unit increase in the intention to use digital banking. This is consistent with the findings of Hossain *et al.,* [24] who noted that perceived usefulness is a critical factor in the adoption of digital banking.

Third, trust has shown an unstandardized coefficient of 0.190, suggesting that each unit increase in trust results in a 0.190 unit increase in the intention to use digital banking. This finding is supported by the research of Szabo Vásquez *et al.,* [79] which emphasized the importance of trust in the adoption of digital banking.

Next, social influence has a minimum unstandardized coefficient of 0.016, meaning that each increase in social influence leads to only a 0.016 unit increase in the intention to use digital banking. This aligns with the study by Mokhtar *et al.,* [44] which found that social influence significantly impacts the use of digital banking.

Lastly, Perceived Risk exhibits a negative relationship, with an unstandardized coefficient of -0.063. This indicates that for every unit increase in perceived risk, the intention to use digital banking decreases by 0.063 units. This finding is consistent with the research by Nguyen *et al.,* [49] which identified perceived risk as a factor influencing attitudes toward digital banking.

5. Implication

The study suggested that perceived usefulness and ease of use were the main factors influencing adoption of digital banking. Hence, these findings indicated that consumers were attracted by the digital banking services in terms of convenience and user-friendliness which also encouraged providers in enhancing these features to strengthen adoption rate. Therefore, digital banking providers should emphasize the elements that are perceived to affect the adoption of digital banking intention, namely perceived usefulness and perceived ease of use as this may drive more consumers' engagement than other factors. The study findings would benefit bankers, investors, authorities, and researchers. The bankers could discover current trends and customer preferences by helping them refine digital banking services. Investors could benefit from a growing digital banking era which ensures market potential to make investment decisions. The regulatory body was well-informed about the consumer's security concern which guided them to have a strengthened regulatory

framework. Lastly, the future researchers would be able to identify current research gaps to make future improvements on digital banking development. As such, it was advisable to explore other factors that were uncovered by the existing study. This exploration could draw an insight into the digital banking experience.

6. Conclusions

In conclusion, the advantages on the factors influencing the intention to use digital banking services among Perak consumers, Malaysia are highly based on the variables of perceived ease of use and perceived usefulness. In this study, a total of five variables have been used to examine which are perceived ease of use, perceived usefulness, trust, social influence and perceived risk. In addition, the resources and other previous studies were used as a reference and for data comparison to achieve the objective of this study. The disadvantages of the study were examined such as time constraint, sampling method, and sample technique. Each of these factors happen when conducting the research. It is important to have ample time to access more data to be collected and analyzed. Besides, the research focus area is only limited in the Perak region, thus the results and findings are compromised since it is hard for them to make a comparison to the research study for all the consumers in Malaysia. Lastly, the focus range of the target age consumers are 18 until 66 years old and above in Perak. Due to the focus area being only in Perak, it limits its availability to make comparisons of the consumers in a further context throughout Malaysia. The recommendations made are going to enhance the correctness and the quality of the studies if future researchers wish to continue the research.

References

[1] Aboobucker, Ilmudeen, and Yukun Bao. "What obstruct customer acceptance of internet banking? Security and privacy, risk, trust and website usability and the role of moderators." *The Journal of High Technology Management Research* 29, no. 1 (2018): 109-123. https://doi.org/10.1016/j.hitech.2018.04.010

[2] Berndt, Andrea E. "Sampling methods." *Journal of human lactation* 36, no. 2 (2020): 224-226. https://doi.org/10.1177/0890334420906850

[3] Ahmad, Sheraz, Sabeen Hussain Bhatti, and Yujong Hwang. "E-service quality and actual use of e-banking: Explanation through the Technology Acceptance Model." *Information Development* 36, no. 4 (2020): 503-519. https://doi.org/10.1177/0266666919871611

[4] Ajayi, Victor Oluwatosin. "Primary sources of data and secondary sources of data." *Benue State University* 1, no. 1 (2017): 1-6.

[5] Akman, S. *"What Is Ordinal Scale: Definition & Examples."* forms.app, 2023.

[6] Alfarizi, Muhammad. "Interaction of Customer Satisfaction and Digital Service Retention: Evidence of PLS from Indonesian Islamic Banking." *International Journal of Islamic Economics and Finance (IJIEF)* 6, no. 1 (2023): 151-180. https://doi.org/10.18196/ijief.v6i1.16824

[7] Ali, M. *"The Impact of Perceived Risk on Digital Banking Adoption."* Journal of Financial Services Marketing 27, no. 1 (2022): 89–104.

[8] Adel Ali, Reham, and Muhammad Rafie Mohd Arshad. "Empirical analysis on factors impacting on intention to use m-learning in basic education in Egypt." *International Review of Research in Open and Distributed Learning* 19, no. 2 (2018). https://doi.org/10.19173/irrodl.v19i2.3510

[9] Allen, I. Elaine, and Christopher A. Seaman. "Likert scales and data analyses." *Quality progress* 40, no. 7 (2007): 64-65.

[10] Alnemer, Hashem Abdullah. "Determinants of digital banking adoption in the Kingdom of Saudi Arabia: A technology acceptance model approach." *Digital Business* 2, no. 2 (2022): 100037. https://doi.org/10.1016/j.digbus.2022.100037

[11] Amoroso, Donald L., and Y. A. N. Chen. "Constructs Affecting Continuance intention in consumers with mobile financial apps: a dual factor approach." *Journal of Information Technology Management* 28, no. 3 (2017): 1-24.

[12] 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 (2019): 86-112. https://doi.org/10.1108/IJBM-10-2018-0271

[13] Apaua, Richard, and Harjinder Singh Lallie. "Measuring user perceived security of mobile banking applications." *arXiv preprint arXiv:2201.03052* (2022).

[14] Belanche, Daniel, Luis V. Casaló, and Carlos Flavián. "Artificial Intelligence in FinTech: understanding robo-advisors adoption among customers." *Industrial Management & Data Systems* 119, no. 7 (2019): 1411-1430. https://doi.org/10.1108/IMDS-08-2018-0368

[15] Bhandari, Pritha. "Inferential Statistics | An Easy Introduction & Examples." *Scribbr*, June 22, 2023.

[16] Hanlon, Bret, and Bret Larget. "Samples and populations." *Department of Statistics University of Wisconsin—Madison* 14, no. 2 (2011): 10-22.

[17] rown, R. M., Johnson, L. K., & Anderson, P. S. "Exploring the relationship between perceived ease of use and adoption rates of digital banking platforms: A comparative analysis." *International Journal of Business and Technology*,12 no.2 (2018), 87-101.

[18] Bryman, Alan. *Social research methods*. Oxford university press, 2016.

[19] Cote, C. *"What Is Descriptive Analytics? 5 Examples | HBS Online."* HBS Online, 2021.

[20] Dovetail Editorial Team. *"What Is Purposive Sampling?"* Dovetail, 2023.

[21] Featherman, Mauricio S., and Paul A. Pavlou. "Predicting e-services adoption: a perceived risk facets perspective." *International journal of human-computer studies* 59, no. 4 (2003): 451-474. https://doi.org/10.1016/S1071-5819(03)00111-3

[22] Fleetwood, D. *"Sample Size Determination: Definition, Formula, and Example."* QuestionPro, August 30, 2023.

[23] Freiman, Jennie A., Thomas C. Chalmers, Harry A. Smith, and Roy R. Kuebler. "The importance of beta, the type II error, and sample size in the design and interpretation of the randomized controlled trial: survey of two sets of "negative" trials." In *Medical uses of statistics*, pp. 357-389. CRC Press, 2019. https://doi.org/10.1201/9780429187445-19

[24] Hossain, S. *"What Is Construct and Measure in Qualitative Research?"* HotCubator, 2020.

[25] Frost, Jim. "Cronbach's alpha: Definition, calculations & example." *Statistics by Jim* (2022).

[26] Genidy, M. E. *"Sample Theory and Hypothesis Tests."* ResearchGate, September 8, 2023.

[27] Hair, Joseph F., William C. Black, Barry J. Babin, Rolph E. Anderson, and Ronald L. Tatham. "Multivariate data analysis (Vol. 6)." (2006): 139-152.

[28] Hassan, Heba E., and Van R. Wood. "Does country culture influence consumers' perceptions toward mobile banking? A comparison between Egypt and the United States." *Telematics and Informatics* 46 (2020): 101312. https://doi.org/10.1016/j.tele.2019.101312

[29] George, Darren, and Paul Mallery. "Reliability analysis." In *IBM SPSS statistics 25 step by step*, pp. 249-260. Routledge, 2018. https://doi.org/10.4324/9781351033909-25

[30] Intarot, Pharot, and Chutima Beokhaimook. "Influencing factor in e-wallet acceptant and use." *International Journal of Business and Administrative Studies* 4, no. 4 (2018): 167. https://doi.org/10.20469/ijbas.4.10004-4

[31] Islami, Muhammad Mitsal, Muhammad Asdar, and Andi Nur Baumassepe. "Analysis of perceived usefulness and perceived ease of use to the actual system usage through attitude using online guidance application." *Hasanuddin Journal of Business Strategy* 3, no. 1 (2021): 52-64. https://doi.org/10.26487/hjbs.v3i1.410

[32] Johri, Amar, and Shailendra Kumar. "Exploring customer awareness towards their cyber security in the Kingdom of Saudi Arabia: A study in the era of banking digital transformation." *Human Behavior and Emerging Technologies* 2023, no. 1 (2023): 2103442. https://doi.org/10.1155/2023/2103442

[33] Kabir, Syed Muhammad. *"Methods of Data Collection."* ResearchGate, 2016.

[34] Al Kailani, Mahmud, and Rachna Kumar. "Investigating uncertainty avoidance and perceived risk for impacting Internet buying: A study in three national cultures." *international Journal of Business and Management* 6, no. 5 (2011): 76. https://doi.org/10.5539/ijbm.v6n5p76

[35] Karim, Md Wasiul, Ahasanul Haque, Mohammad Arije Ulfy, Md Alamgir Hossain, and Md Zohurul Anis. "Factors influencing the use of E-wallet as a payment method among Malaysian young adults." *Journal of International Business and Management* 3, no. 2 (2020): 1-12.

[36] Kesharwani, Ankit, and Shailendra Singh Bisht. "The impact of trust and perceived risk on internet banking adoption in India: An extension of technology acceptance model." *International journal of bank marketing* 30, no. 4 (2012): 303-322. https://doi.org/10.1108/02652321211236923

[37] Solutions, Statistics. "Pearson's Correlation Coefficient: A Comprehensive Overview." *Directory of Statistical Analyses. Accessed October* 4 (2024).

[38] Lavrakas, Paul J. *Encyclopedia of survey research methods*. Sage publications, 2008. https://doi.org/10.4135/9781412963947

[39] Lee, Jin-Myong, and Hyo-Jung Kim. "Determinants of adoption and continuance intentions toward Internet-only banks." *International Journal of Bank Marketing* 38, no. 4 (2020): 843-865. https://doi.org/10.1108/IJBM-07-2019-0269

[40] Lusaya, Saviour, and Bornwell Kalumba. "The challenges of adopting the use of e-banking to the customers: The case of Kasama district banking customers." *Scholar Journal of Applied Sciences and Research* 1, no. 2 (2018): 26-31.

[41] Malhotra, Naresh K., Sung S. Kim, and James Agarwal. "Internet users' information privacy concerns (IUIPC): The construct, the scale, and a causal model." *Information systems research* 15, no. 4 (2004): 336-355. https://doi.org/10.1287/isre.1040.0032

[42] Mbama, Cajetan Ikechukwu, Patrick Ezepue, Lyuba Alboul, and Martin Beer. "Digital banking, customer experience and financial performance: UK bank managers' perceptions." *Journal of Research in Interactive Marketing* 12, no. 4 (2018): 432-451. https://doi.org/10.1108/JRIM-01-2018-0026

[43] Middleton, F. *"The 4 Types of Reliability in Research | Definitions & Examples."* Scribbr, August 8, 2019.

[44] Mokhtar, Shamsul Anuar, Hamidon Katan, and H-u-R. Imdadullah. "Mobile banking adoption: The impacts of social influence, ubiquitous finance control and perceived trust on customers' loyalty." *Science International (Lahore)* 29, no. 4 (2018): 829-836.

[45] Morris, Evan. *"Sampling from Small Populations."* University of Regina, 2015.

[46] Mufarih, Muhammad, Riyanto Jayadi, and Yovin Sugandi. "Factors influencing customers to use digital banking application in Yogyakarta, Indonesia." *The Journal of Asian Finance, Economics and Business* 7, no. 10 (2020): 897-907. https://doi.org/10.13106/jafeb.2020.vol7.no10.897

[47] Mukaka, Mavuto M. "A guide to appropriate use of correlation coefficient in medical research." *Malawi medical journal* 24, no. 3 (2012): 69-71.

[48] Mustafa, Muhammad Anas, Jugindar Singh Kartar Singh, and Noraini Binti Ahmad. "The adoption of e-wallet by generation Z in Kuala Lumpur, Malaysia." *Electronic Journal of Business and Management* 7, no. 2 (2022): 51-67.

[49] Nguyen, Thi Phuong Lan, Saravanan Muthaiyah, and Hazik Mohamed. "What Drives the Intention to Adopt Digital Banking in Malaysia?."

[50] Nguyen, Oanh Thi. "Factors affecting the intention to use digital banking in Vietnam." *The Journal of Asian Finance, Economics and Business* 7, no. 3 (2020): 303-310. https://doi.org/10.13106/jafeb.2020.vol7.no3.303

[51] Omarini, Anna. "The digital transformation in banking and the role of FinTechs in the new financial intermediation scenario." (2017): 1-6. https://doi.org/10.19070/2643-038X-170001

[52] Oribhabor, Chinelo Blessing, and Chioma A. Anyanwu. "Research sampling and sample size determination: a practical application." *Journal of Educational Research (Fudjer)* 2, no. 1 (2019): 47-57.

[53] Patel, Kiran J., and Hiren J. Patel. "Adoption of internet banking services in Gujarat: An extension of TAM with perceived security and social influence." *International Journal of Bank Marketing* 36, no. 1 (2018): 147-169. https://doi.org/10.1108/IJBM-08-2016-0104

[54] Pavan, G. K., and N. Kulkarni. "Review Article on Research Methodology." *International journal of innovative research and development* 3, no. 7 (2014).

[55] Poon, Wai-Ching. "Users' adoption of e-banking services: the Malaysian perspective." *Journal of business & industrial marketing* 23, no. 1 (2008): 59-69. https://doi.org/10.1108/08858620810841498

[56] Priyatma, Johanes Eka. "The impact of perceived usefulness and perceived ease-of-use on repurchase intention of online shopping app user." *International Journal of Social Science and Human Research* 5, no. 10 (2022): 4764-4769. https://doi.org/10.47191/ijsshr/v5-i10-49

[57] Rahi, Samar. "Research design and methods: A systematic review of research paradigms, sampling issues and instruments development." *International Journal of Economics & Management Sciences* 6, no. 2 (2017): 1-5.

[58] Rahi, Samar, Mazuri Abd Ghani, and Abdul Hafaz Ngah. "Factors propelling the adoption of internet banking: the role of e-customer service, website design, brand image and customer satisfaction." *International Journal of Business Information Systems* 33, no. 4 (2020): 549-569. https://doi.org/10.1504/IJBIS.2020.105870

[59] Rath, Dillip Kumar, and Ajit Kumar. "Information privacy concern at individual, group, organization and societal level-a literature review." *Vilakshan-XIMB Journal of Management* 18, no. 2 (2021): 171-186. https://doi.org/10.1108/XJM-08-2020-0096

[60] Rivat, Christine, Sylvie Rodrigues, Erik Bruyneel, Genevieve Piétu, Amelie Robert, Gerard Redeuilh, Marc Bracke, Christian Gespach, and Samir Attoub. "Erratum: Implication of STAT3 signaling in human colonic cancer cells during intestinal trefoil factor 3 (TFF3)-and vascular endothelial growth factor-mediated cellular invasion and tumor growth (Cancer Research (January 1, 2005) 65 (195-202))." *Cancer Research* 65, no. 6 (2005): 2505. https://doi.org/10.1158/0008-5472.195.65.1

[61]   Safari, F. *"The Effect of Perceived Risk on Attitudes toward Internet Banking." Journal of Financial Services Marketing* 25, no. 2 (2020): 147–162.

[62]   Saif, Mashaal AM, Nazimah Hussin, Maizaitulaidawati Md Husin, Ayed Alwadain, and Ayon Chakraborty. "Determinants of the intention to adopt digital-only banks in Malaysia: The extension of environmental concern." *Sustainability* 14, no. 17 (2022): 11043. https://doi.org/10.3390/su141711043

[63]   Salkind, Neil J. *Encyclopedia of measurement and statistics*. SAGE publications, 2006. https://doi.org/10.4135/9781412952644

[64]   Samuel, Nathaniel, Samuel Onasanya, and Charles Olumorin. "Perceived usefulness, ease of use and adequacy of use of mobile technologies by Nigerian university lecturers." *International Journal of Education and Development using ICT* 14, no. 3 (2018).

[65]   Shahid, Shadma, Jamid Ul Islam, Shehla Malik, and Uzma Hasan. "Examining consumer experience in using m-banking apps: A study of its antecedents and outcomes." *Journal of Retailing and Consumer Services* 65 (2022): 102870. https://doi.org/10.1016/j.jretconser.2021.102870

[66]   Shiau, Wen-Lung, Ye Yuan, Xiaodie Pu, Soumya Ray, and Charlie C. Chen. "Understanding fintech continuance: perspectives from self-efficacy and ECT-IS theories." *Industrial Management & Data Systems* 120, no. 9 (2020): 1659-1689. https://doi.org/10.1108/IMDS-02-2020-0069

[67]   Statistics, Laerd. "Descriptive and inferential statistics." *Retrieved from* (2013).

[68]   Singh, Shubhangi, Marshal M. Sahni, and Raj K. Kovid. "What drives FinTech adoption? A multi-method evaluation using an adapted technology acceptance model." *Management Decision* 58, no. 8 (2020): 1675-1697. https://doi.org/10.1108/MD-09-2019-1318

[69]   Sivaram, Arathi, and E. K Satheesh. "Customers' perceived risk and attitude towards adoption of the digital banking services." (2021). https://doi.org/10.9734/sajsse/2021/v12i430312

[70]   Sukamolson, Suphat. "Fundamentals of quantitative research." *Language Institute Chulalongkorn University* 1, no. 3 (2007): 1-20.

[71]   Kabir, S. *Data presentation: Table and figure design*. 2016.

[72]   Tahar, Afrizal, Hosam Alden Riyadh, Hafiez Sofyani, and Wahyu Eko Purnomo. "Perceived ease of use, perceived usefulness, perceived security and intention to use e-filing: The role of technology readiness." *The Journal of Asian Finance, Economics and Business* 7, no. 9 (2020): 537-547. https://doi.org/10.13106/jafeb.2020.vol7.no9.537

[73]   Taherdoost, Hamed. "Sampling methods in research methodology; how to choose a sampling technique for research." *International journal of academic research in management (IJARM)* 5 (2016). https://doi.org/10.2139/ssrn.3205035

[74]   Taufan, Ahmad, and Rudi Trisno Yuwono. "Analysis of factors that affect intention to use e-wallet through the technology acceptance model approach (case study: GO-PAY)." *International Journal of Science and Research (IJSR)* 8, no. 7 (2019): 413-419.

[75]   Tavakol, Mohsen, and Reg Dennick. "Making sense of Cronbach's alpha." *International journal of medical education* 2 (2011): 53. https://doi.org/10.5116/ijme.4dfb.8dfd

[76]   Trochim, W. M. K. *Research Methods Knowledge Base.* 2006. Retrieved January 25, 2010.

[77]   Tsai, Chien-Hua, and Pin-Chang Su. "The application of multi-server authentication scheme in internet banking transaction environments." *Information systems and e-business management* 19, no. 1 (2021): 77-105. https://doi.org/10.1007/s10257-020-00481-5

[78]   Tugade, Christian, Jenny REYES, and Mecmack NARTEA. "Components affecting intention to use digital banking among generation Y and Z: an empirical study from the Philippines." *The Journal of Asian Finance, Economics and Business* 8, no. 12 (2021): 509-518.

[79]   Shaun Turney, "Pearson Correlation Coefficient (R) | Guide & Examples," *Scribbr*, February 10, 2024.

[80]   Uyanık, Gülden Kaya, and Neşe Güler. "A study on multiple linear regression analysis." *Procedia-Social and Behavioral Sciences* 106 (2013): 234-240. https://doi.org/10.1016/j.sbspro.2013.12.027

[81]   Willians, C. "Research methods." *Journal of business & economic research* 5 (2007).

[82]   Wu, Jen-Her, and Shu-Ching Wang. "What drives mobile commerce?: An empirical evaluation of the revised technology acceptance model." *Information & management* 42, no. 5 (2005): 719-729. https://doi.org/10.1016/j.im.2004.07.001

[83]   Jon Zamboni, "The Advantages of a Large Sample Size," Sciencing, August 30, 2022

[84]   Zhang, X., Luximon, Y., and Song, Y. *"The Role of Perceived Security in Digital Banking Adoption." Journal of Banking and Finance* 34, no. 1 (2019): 89–104.

[85]   Kang, Jungho. "Mobile payment in Fintech environment: trends, security challenges, and services." *Human-centric Computing and Information sciences* 8, no. 1 (2018): 32. https://doi.org/10.1186/s13673-018-0155-4

[86] Fortes, Nuno, and Paulo Rita. "Privacy concerns and online purchasing behaviour: Towards an integrated model." *European Research on Management and Business Economics* 22, no. 3 (2016): 167-176. https://doi.org/10.1016/j.iedeen.2016.04.002

[87] Nayak, Keyurkumar, Priyanshu Singh, and Priyal Dave. "Does data security and trust affect the users of FinTech." *International Journal of Management (IJM)* 12, no. 1 (2021): 191-206.

[88] Lin, Lynda C., Yang Qu, and Eva H. Telzer. "Intergroup social influence on emotion processing in the brain." *Proceedings of the National Academy of Sciences* 115, no. 42 (2018): 10630-10635. https://doi.org/10.1073/pnas.1802111115