



ADVANCED INTERNATIONAL JOURNAL
OF BUSINESS, ENTREPRENEURSHIP
AND SMES
(AIJBES)

www.gaexcellence.com/aijbess



SUSTAINING MOBILE BANKING USE: INSIGHTS FROM CUSTOMERS IN THE NORTHERN REGION OF MALAYSIA

Nur Alia Syahirah Zahari¹, Nurul Labanihuda Abdull Rahman^{2*}, Hasyeilla Abd Mutalib³,
Fatin Syazwani Safiyuddin⁴

¹Faculty of Business and Management, Universiti Teknologi MARA, Cawangan Perlis, Malaysia

 nuraliasyahirah18@gmail.com

 <https://orcid.org/0009-0001-2360-1074>

²Faculty of Business and Management, Universiti Teknologi MARA, Cawangan Perlis, Malaysia

 labanihuda@uitm.edu.my

 <https://orcid.org/0000-0002-5212-7439>

³Faculty of Business and Management, Universiti Teknologi MARA, Cawangan Perlis, Malaysia

 hasyeilla798@uitm.edu.my

 <https://orcid.org/0000-0003-4091-4504>

⁴Faculty of Business and Communication, Universiti Malaysia Perlis, Perlis, Malaysia

 syazwanisafiyuddin@unimap.edu.my

 <https://orcid.org/0000-0003-2333-8568>

*Corresponding Author

Article Info:

Article history:

Received date: 07.06.2026

Revised date: 07.07.2026

Accepted date: 05.08.2026

Published date: 03.09.2026

To cite this document:

Zahari, N. A. S., Abdull Rahman, N. L., Abd Mutalib, H., & Safiyuddin, F. S. (2026). Sustaining Mobile Banking Use: Insights from Customers in the Northern Region of Malaysia. *Advanced International Journal of Business Entrepreneurship and SMEs*, 8 (29), 62-74.

Abstract:

Financial services delivery has changed because of quick uptake of mobile banking. The benefits that customers receive from mobile banking are what motivate everyday use. Customers are choosing online platforms over in-person transactions at a bank counter. In the age of information technology (IT), banking clients may complete transactions with a single click on their smartphones. The variables that affect users intend to continue using mobile banking have not been sufficiently investigated. Prior research has thoroughly investigated the elements that influence mobile banking usage. The long-term viability of digital banking services depends on knowledge of mobile banking continued usage, which is limited by this gap. This study examines the variables that affect the Northern Region of Malaysian customers inclinations to keep using mobile banking apps. Besides, this study used the Unified Technology Acceptance and Utilisation Theory (UTAUT2) to explain intentions of customers to continue using mobile banking apps. A quantitative survey of 291 mobile banking clients in Northern Malaysia was analysed using partial least squares structural equation modelling (PLS-SEM). Furthermore, the findings indicate that the intention of customers to keep using mobile banking apps in the Northern Region of Malaysia is significantly influenced by four (4) factors: performance expectation, effort expectations, social influence and facilitating conditions. Finally, this study establishes the foundation for further

research into the variables affecting customers' inclination to stick with mobile banking apps in different parts of Malaysia.

DOI: 10.35631/AJBES.829004 **Keyword:**

Continuous Intention, Fintech, Mobile Banking Application



© The authors (2026). This is an Open Access article distributed under the terms of the Creative Commons Attribution (CC BY NC) (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact aijb@gaexcelence.com.

Introduction

Mobile banking is among the most sophisticated financial channels available. It offers obvious advantages over traditional channels like ATMs and non-mobile banking, particularly in terms of accessibility, flexibility, and wide coverage (Muflih et al., 2024). Due to the rapid advancement of mobile technology, mobile banking also performs better than non-mobile internet banking in terms of transaction speed (Palamidovska, 2024). The banking industry contributes significantly to a socioeconomic growth of the country by providing loans to startups, businesses, and farmers (Prihadyanti et al., 2023).

Customers can use online banking, an electronic service, to carry out their virtual financial transactions (Tessema et al., 2026). It serves as the primary point of contact between customers and banks in addition to serving as a distribution channel. According to Paltayan et al. (2024), the primary benefits are market expansion, cost savings, direct communication, and accessibility. While banks broaden their market reach and enhance their monitoring skills, the customers receive benefits from clear information and round-the-clock access. Although ATMs, phones, PCs, and online banking have provided alternate service modalities, bank branches have historically served as the main service channel.

The use of mobile banking is accelerated by the growth of online banking services (Singh, 2023). Customers use mobile devices to make payments, transfer money, and check balances. Additionally, they get financial items and settle debts owed to people or companies (Bull & Klapper et al., 2023). According to Yang and Yin (2023), mobile banking is officially defined as financial services provided via portable devices like smartphones. It includes services that may be accessible by wireless protocols, mobile apps, and SMS (Shaikh et al., 2023). Communication networks and mobile technologies are essential to mobile banking. Customers can conduct transactions at a reduced cost indefinitely and wherever. It simultaneously helps

banks by lowering operating costs and making it easier to gather consumer behaviour data (Nwachukwu et al., 2023).

Nonetheless, Malaysian adoption is still limited. According to an MCMC (2021) survey, 49.6% of smartphone users avoid using mobile payment apps because they lack trust or understanding or they prefer using cash and credit cards. Furthermore, 46.1% of banking clients consistently choose conventional payment methods. There are other obstacles which include limited visibility, particularly in rural regions, security and privacy issues, and a lack of enthusiasm. These issues hinder the uptake of online banking services.

Despite its benefits, mobile banking has its drawbacks. This manifesting concerns about money, privacy issues, security risks, and user confusion (Zhou et al., 2011). Customers often complain about poorly designed applications or malfunctioning systems (Sinha et al., 2020). The main obstacles to adoption are the technological limits of cell phones, opposition to innovation, and transaction security concerns (Nosrati et al., 2024). Banks must build strong connections to increase client confidence (Muflih et al., 2024).

Additionally, there are fundamental flaws with mobile banking services. Some banks limit the functionalities of their mobile applications by seeing them as secondary to offline services (Paltayian et al., 2024). Inadequate risk management systems in online banking compromise user security and privacy (Chen et al., 2023). A smart way to maximise client service is through live chat. It enables users to quickly and discreetly address problems at any moment (Wu & Ho, 2021). However, system overloads sometimes happen at late night, especially when there is a high demand.

Many banks now use live chat services to help consumers simultaneously to address the loss of in-person connection. The user experience and engagement are improved by this functionality. Mobile banking offers its effectiveness, usefulness, and convenience. However, structural constraints such as a dearth of customisable features and ongoing security issues continue to be the major obstacles (Orehovaki et al., 2023). Therefore, this study examines the variables that affect consumers' intentions to keep using mobile banking apps in Malaysia's northern region. In particular, the study looks into how important factors from the extended UTAUT2 model affect consumers' choices to stick with mobile banking apps. This provides financial institutions important information to improve the sustainability of digital banking services in Malaysia and create more successful customer retention strategies.

Literature Review

There are four (4) fundamental concepts outlined in this section: social influence, effort expectancy, performance expectancy, and facilitating condition.

Performance Expectancy

Performance expectation is a measure of how much someone thinks using technology maximises the effectiveness and efficiency. Besides, Chen et al. (2023) claim that it also shows how much technology boosts productivity. Based on the previous evidence, the behavioural intentions are directly influenced by the performance expectancy. Generally, according to Baabdullah et al. (2018) the user who think mobile banking is more advantageous than traditional banking methods are more likely to utilise it. Similar studies also indicate that by

enabling consumers to access services constantly from any location, mobile banking raises perceived usefulness (Addula, 2025).

Effort Expectancy

Effort expectation is a measure of how easy a technology is considered to be, and it positively affects behavioural intention (Venkatesh et al., 2012). In addition, even when a system operates as a user-friendly system, the quantity of labour required constantly determines users desire to utilise it. A similar study suggests those who have already utilised such technologies are more affected (Hadoussa & Chatti, 2021). Hence, the key determinant of technology adoption is effort expectation, which interacts with performance expectancy. The users weigh the benefits and the effort involved when they decide whether to adopt a new system (Wang et al., 2023).

Social Influence

Alenizi (2023) claim that social influence describes how a person who makes decision to utilise mobile banking is influenced by external referents. Previous studies highlighted that recommendations from peers, family, and reference groups have a significant impact on technology adoption (Manca et al., 2019). Moreover, the effect in the earlier adoption process is very significant (Alyoussef, 2023). Furthermore, social encouragement has greatly increased a person's propensity to adopt new technology (Kaur & Jaggi, 2025).

Facilitating Conditions

Venkatesh et al. (2003) define facilitating conditions as the extent to which individuals believe there is adequate organisational and technological infrastructure to support system use. This entails possessing the resources, knowledge, and skills required to conduct business in the mobile banking industry. Moreover, the users must be able to install apps and comprehend mobile security standards, among other basic technological abilities (Sheth et al., 2026). Similar findings consistently reveal that facilitating conditions have a major impact on mobile banking uptake (Cera et al., 2020), and the empirical research confirms their strong influence on user behaviour (Nguyen et al., 2020).

H1a: Performance expectancy correlates positively with the behavioral intention of customers to utilize mobile banking applications.

H1b: Effort expectancy correlates positively with the behavioral intention of customers to utilize mobile banking applications.

H1c: Social influence correlates positively with the behavioral intention of customers to utilize mobile banking applications.

H1d: Facilitating conditions correlate positively with the behavioral intention of customers to utilize mobile banking applications.

Theoretical Foundations

This study was based on the Unified Theory of Acceptance and Use of Technology (UTAUT), which explains the intention of users to adopt and use technology. The theory states that the main factors affecting user behaviour are performance expectancy, effort expectancy, social influence, and facilitating conditions. UTAUT provides a solid foundation for developing study

frameworks and hypotheses, particularly when looking at the continued usage of mobile banking apps.

To improve its explanatory power, the model could be extended with additional empirical variables. Technology acceptance studies frequently employ UTAUT because of its high predictive validity. It explains around 70% of the heterogeneity in technology usage by merging many antecedent models (Balkaya & Akkucuk, 2021). Furthermore, UTAUT2 has even higher predictive value, explaining 52% of actual technology use and 74% of behavioural intention (Venkatesh et al., 2016). The four (4) key components of the model are performance expectation, effort expectancy, social influence, and facilitating conditions.

Research Methodology

The relationship between behavioural intention, performance expectancy, effort expectancy, social influence, and facilitating condition was examined in this study using a quantitative correlational approach. Descriptive and inferential statistics were employed to examine the data, which were gathered via a structured questionnaire sent via Google Forms. The sample consisted of 291 bank customers from the Northern Region of Malaysia who utilised mobile banking applications. The research instrument for the study was a structured questionnaire designed to collect the primary data from mobile banking customers in the Northern Region of Malaysia.

The closed-ended questions on the questionnaire were adapted from the previous empirical studies to guarantee reliability, clarity, and relevance. A Likert scale was used to measure the respondents' opinions and perceptions because it facilitates the quantitative analysis and increases the efficiency of data collection. It is well known for producing reliable results and has been widely utilised in technology adoption studies (Venkatesh et al., 2003). Thus, this study employed a multi-item 5-point Likert scale that was adapted from the previous mobile banking research to operationalise the concepts.

While the category scales were used to quantify demographic data, a 5-point interval scale was used to evaluate all factors. Both tools showed strong dependability, as seen by Cronbach's alpha values that were higher than 0.90. The validity and reliability of the instrument were assessed by pilot research with thirty clients. The findings verified that the questionnaire was suitable for the implementation. Descriptive analysis was then used to ascertain the levels of variables, and mean scores.

Results and Discussion

Data from 291 respondents are presented in the demographic profile. 37.4% of responders are men, and the majority (62.6%) are women. Malay respondents make up most of the sample (89.7%), followed by Chinese and Indian respondents (3.8% each). The majority (70.1%) are between the ages of 21 and 25, suggesting that young adults make up the bulk of mobile banking users. 59.5% of respondents had a bachelor's degree, while 42.2% make less than RM1,000.

In terms of employment, 47.1% are students and 52.9% are employed. When it comes to using mobile banking, Maybank2U is the most popular app (51.2%), followed by Go by Bank Islam (19.2%) and CIMB Clicks (14.1%). The bulk of the respondents (65.3%) show regular usage

by using mobile banking more than seven times a month. Overall, the empirical results of the study show that most mobile banking users are youthful, well-educated, and regular users.

Table 1: Demographic Profile of the Respondents

Demographic Information (n=291)		Frequency	Percentage
Gender	Male	109	37.4%
	Female	182	62.6
Race	Malay	261	89.7
	Chinese	11	3.8
	Indian	11	3.8
	Others	8	2.7
Age	Below 20	11	3.8
	21-25	204	70.1
	26-30	27	9.3
	31-35	9	3.1
	36-40	10	3.4
	41-45	14	4.8
	46-50	7	2.4
	Above 50	9	3.1
Highest Level of Education	PhD	3	1.0
	Master	28	9.6
	Bachelor's degree	173	59.5
	Diploma	66	22.7
	Foundation	2	0.7
	SPM	19	6.5
Monthly Income	Below RM1,000	123	42.2
	RM1,001 – RM2,000	59	20.3
	RM2,001 – RM3,000	35	12.0
	RM3,001 – RM4,000	28	9.6
	RM4,001 – RM5,000	15	5.2
	Above RM5,001	31	10.
Applications you often use to making a transaction	Maybank2U	149	51.2
	CIMB Clicks	41	14.1
	AmOnline	2	0.7
	GO by Bank Islam	56	19.2
	RHB	27	9.3
	Bank Rakyat	4	1.4
	Public Bank	4	1.4
	BSN	8	2.7
Frequency of using mobile banking applications in a month	1 – 2 times	28	9.6
	3 – 4 times	40	13.8
	5 – 6 times	33	11.3

More than 7 times

190

65.3

TOTAL

291

100.00

Assessment of the Measurement Model

The measurement model (outer model) was assessed before hypothesis testing. The outer model in SmartPLS was used to investigate how indicators are related to the latent constructs that correspond to them. To ensure the validity and reliability of the measuring tool, this step is essential. According to Churchill (1979), assessing the measurement model is essential to identifying appropriate indicators for faithfully capturing each concept. There are three criteria used in this work to evaluate construct validity: discriminant validity, convergent validity, and content validity (Hair et al., 2014).

Content Validity

Content validity refers to how well assessment questions capture the idea being. Additionally, SmartPLS, which is based on Principal Component Analysis (PCA), employs factor loadings to guarantee that each item loads higher on its intended construct than on other constructs. Moreover, this study employed two (2) criteria: superior loadings which are related to constructs and statistically significant item loadings. Each item has satisfied these requirements. Rourke and Anderson (2004) claim that appropriate loadings must be more than 0.30. However, Evan (1996) classifies loadings between 0.61 and 0.80 as quite strong. Each of the constructs has loadings which are higher than 0.61, indicating sufficient content validity.

Convergent Validity

Convergent validity evaluates how well indicators of the same construct correlate. It is assessed using factor loadings, average variance extracted (AVE), and composite reliability (CR) in reflective measurement models (Sekaran & Bougie, 2016). Fornell and Larcker (1981) and Hair et al. (2014) state that the loadings which are more than 0.50 are acceptable, but the items which are less than 0.40 need to be removed. If loadings between 0.40 and 0.70 increase CR or AVE, they might be kept. Furthermore, the CR must be greater than 0.70 and the AVE must be greater than 0.50. The factor loadings in this investigation varied between 0.888 and 0.953. AVE scores varied from 0.832 to 0.876, whereas the composite reliability ratings varied from 0.964 to 0.972. Robust convergent validity is confirmed by all values exceeding the suggested criteria.

Table 2: Construct Reliability and Validity and the Results of the Outer Model

Construct	Item	Loading	Cronbach Alpha	Composite Reliability (CR) ²	AVE
Behavioural Intention	BI1	0.932	0.965	0.972	0.876
	BI2	0.953			
	BI3	0.934			
	BI4	0.936			

	BI5	0.925			
Performance Expectancy	PE1	0.930	0.964	0.972	0.875
	PE2	0.932			
	PE3	0.946			
	PE4	0.952			
	PE4	0.917			
Effort Expectancy	EE1	0.940	0.951	0.965	0.873
	EE2	0.944			
	EE3	0.935			
	EE4	0.918			
Social Influence	SI1	0.934	0.953	0.964	0.843
	SI2	0.931			
	SI3	0.908			
	SI4	0.927			
	SI5	0.891			
Facilitating Conditions	FC1	0.912	0.960	0.968	0.832
	FC2	0.888			
	FC3	0.931			
	FC4	0.875			
	FC5	0.935			
	FC6	0.932			

a: Composite Reliability: $CR = (\sum \text{factor loading})^2 / \{(\sum \text{factor loading})^2 + \sum (\text{variance of error})\}$ b: Average Variance Extracted: $AVE = (\sum \text{factor loading})^2 / \{\sum (\text{factor loading})^2 + \sum (\text{variance of error})\}$

Discriminant Validity

Discriminant validity has assessed whether each construct is empirically distinct from other constructs in the model. It is established when an indicator loads higher on its assigned construct than on alternative constructs, typically transcending 0.70. It concurrently guarantees that measurement items do not overlap across constructs. The Fornell-Larcker criteria and cross-loadings were used in this work to assess discriminant validity (Fornell & Larcker, 1981; Hair et al., 2014). This criterion requires that the square root of the AVE could be greater than the correlations with other constructs. The empirical findings validate discriminant validity by confirming that all AVE square roots are greater than the inter-construct correlations. As a result, all notions continue to be unique, and the measurement model exhibits validity. The model functions as dependable and is suitable for hypothesis testing after content, convergent, and discriminant validity have been proven.

Table 3: Discriminant Validity

Construct	1	2	3	4	5
1. Behavioural Intention	0.936				
2. Effort Expectancy	0.811	0.934			
3. Facilitating Conditions	0.814	0.886	0.912		
4. Performance Expectancy	0.821	0.845	0.834	0.935	

5. Social Influence	0.768	0.831	0.824	0.782	0.918
---------------------	-------	-------	-------	-------	-------

Hypothesis Testing

The structural model was evaluated to investigate the study hypotheses and explore the links between the latent variables once the measurement model had been validated. Path coefficients, R^2 values, effect sizes, and predictive relevance were evaluated concurrently during this step (Hair et al., 2014). The analysis in this study was conducted using SmartPLS. The route coefficients were estimated using the PLS technique, and their statistical significance was confirmed by bootstrapping.

Table 4: Convergent Validity Analysis

Hypothesis	Relation	Path Coefficient	T Value	P Value	Decision
H1	PE -> BI	0.351	3.488	0.000***	Supported
H2	EE -> BI	0.181	1.698	0.045	Supported
H3	SI -> BI	0.148	1.862	0.031	Supported
H4	FC -> BI	0.245	2.199	0.014	Supported
H5	BI -> CI	0.868	31.653	0.000***	Supported

Table 4.9 displays the structural model's empirical findings, including the moderating impact. The bootstrapping approach is used to evaluate the significance of each association (H1–H5). Performance expectancy ($\beta=0.351$, $t=3.488$, $p<0.001$), effort expectancy ($\beta=0.181$, $t=1.698$, $p<0.001$), social influence ($\beta=0.148$, $t=1.862$, $p<0.001$), facilitating conditions ($\beta=0.245$, $t=2.199$, $p<0.001$), and continuous intention ($\beta=0.868$, $t=31.653$, $p<0.001$) all significantly affect behavioural intention (BI).

Conclusion

This study examined the variables affecting the Northern Region of Malaysian customers who willingly utilised mobile banking applications using the Unified Theory of Acceptance and utilise of Technology (UTAUT2). The findings demonstrate that performance expectancy, effort expectancy, social influence, and facilitating condition variables have a significant impact on behavioural intention, which in turn influences the customers' continued desire to use mobile banking apps.

Among these factors, performance expectancy was shown to be the most potent predictor. This indicates that the users are more likely to use mobile banking regularly especially when the applications are useful, efficient, and practical for managing their financial concerns. Moreover, mobile banking has revolutionised the financial sector towards cybersecurity threats, such as data breaches, and continued to undermine the customers confidence. Hence, the security continues to have a major impact on the adoption. Initially, banks must prioritise customer retention, competitive positioning, and service optimisation as mobile banking grows. The study also offers strategic advice to financial institutions and governments besides offering comprehensive insights into users' behaviour and continuous usage intention. The theory and practice are enhanced by understanding the adoption of mobile banking in Malaysia and sponsoring more empirical research in this field.

There are few limitations of the study. Firstly, the respondents of the study were only from the Northern Region of Malaysia, and this has generalised the results. Secondly, it was unable to monitor behavioural changes over time due to the cross-sectional design. Longitudinal methodologies and involve people from a range of geographic regions in order to get greater representation should be conducted for the future studies. Finally, other relevant elements such as perceived risk, trust, customer satisfaction, and perceived financial stability might be included in future studies to further improve the explanatory power of the model. Furthermore, this survey offers useful information pertaining to mobile banking continuance intention and promotes the ongoing expansion of digital financial services in Malaysia.

Acknowledgements: The authors sincerely appreciate the support and valuable contributions from colleagues and peers whose constructive feedback, insightful comments, and encouragement significantly improved the quality of this paper.

Funding Statement: No Funding

Conflict of Interest Statement: The authors declare that there is no conflict of interest regarding the publication of this paper. All authors have contributed to this work and approved the final version of the manuscript.

Ethics Statement: This study was conducted in accordance with ethical research standards. All procedures involving human participants were reviewed and approved by the [UiTM Research Ethics Committee], approval number [REC/06/2024 (PG/MR/246)]. Informed consent was obtained from all participants prior to data collection. Participation was voluntary, and respondents were assured of confidentiality and anonymity. The data collected were used solely for academic purposes.

Author Contribution Statement: All authors contributed significantly to the development of this manuscript. Nurul Labanihuda Abdull Rahman was responsible for the conceptualization, methodology, and overall supervision of the study. Nur Alia Syahirah Zahari handled data collection, analysis, and interpretation of results. Hasyeilla Abd Mutalib contributed to the literature review, drafting, and critical revision of the manuscript. Fatin Syazwani Safiyuddin wrote conclusion. All authors read and approved the final version of the manuscript prior to submission.

References

- Addula, S. R. (2025). Mobile banking adoption: A multi-factorial study on social influence, compatibility, digital self-efficacy, and perceived cost among generation Z consumers in the United States. *Journal of Theoretical and Applied Electronic Commerce Research*, 20(3), 192. <https://doi.org/10.3390/jtaer20030192>
- Alenizi, A. S. (2023). Exploring the antecedents of internalization, identification, and compliance social influence for mobile banking adoption. *Journal of Islamic Marketing*, 14(10), 2644-2667. <https://doi.org/10.1108/JIMA-01-2022-0019>
- Alyoussef, I. Y. (2023). The impact of massive open online courses (MOOCs) on knowledge management using integrated innovation diffusion theory and the technology acceptance model. *Education Sciences*, 13(6), 531. <https://doi.org/10.3390/educsci13060531>
- Baabdullah, A. M., Alalwan, A. A., Rana, N. P., Kizgin, H., & Patil, P. (2019). Consumer use of mobile banking (M-Banking) in Saudi Arabia: Towards an integrated model. *International Journal of Information Management*, 44, 38–52. <https://doi.org/10.1016/j.ijinfomgt.2018.09.002>
- Balkaya, S., & Akkucuk, U. (2021). Adoption and use of learning management systems in education: The role of playfulness and self-management. *Sustainability*, 13(3), 1127. <https://doi.org/10.3390/su13031127>
- Bull, G., & Klapper, L. (2023). Digital Financial Inclusion and Development. In Handbook of Microfinance, Financial Inclusion and Development, 164-180. *Edward Elgar Publishing*. <https://doi.org/10.4337/9781803925166.00017>
- Çera, G., Pagria, I., Khan, K. A., & Muaremi, L. (2020). Mobile banking usage and gamification: the moderating effect of generational cohorts. *Journal of Systems and Information Technology*, 22(3), 243-263. <https://doi.org/10.1108/JSIT-06-2019-0107>
- Chen, L., Jia, J., & Wu, C. (2023). Factors influencing the behavioral intention to use contactless financial services in the banking industry: An application and extension of UTAUT model. *Frontiers in Psychology*, 14, 1121835. <https://doi.org/10.3389/fpsyg.2023.1121835>
- Churchill, G. A., Jr. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, 16(1), 64–73. <https://doi.org/10.2307/3150876>
- Evans, J. D. (1996). *Straightforward statistics for the behavioral sciences*. Pacific Grove, CA: Brooks/Cole Publishing.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.2307/3151312>
- Hadoussa, S., & Chatti, H. (2021). Factors affecting the adoption of e-learning technology by students during the COVID-19 quarantine period: The application of the UTAUT model. *Engineering technology and Applied science research*, 11(2), 6993-7000. <https://doi.org/10.48084/etasr.4105>
- Hair, J. F., Jr., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*. SAGE Publications.
- Kaur, N., & Jaggi, S. (2025). Understanding consumers' behaviour to adopt technology in context to IoT enabled food delivery services. *International Journal of Services, Economics and Management*, 16(4-5), 624-640.

- Kumar, R., Singh, R., Kumar, K., Khan, S., & Corvello, V. (2023). How Does Perceived Risk and Trust Affect Mobile Banking Adoption? Empirical Evidence from India. *Sustainability*, 15(5), 4053. <https://doi.org/10.3390/su15054053>
- Manca, F., Sivakumar, A., & Polak, J. W. (2019). The effect of social influence and social interactions on the adoption of a new technology: The use of bike sharing in a student population. *Transportation Research Part C: Emerging Technologies*, 105, 611-625. <https://doi.org/10.1016/j.trc.2019.04.010>
- Muflih, M., Zen, M., Purbayati, R., Kristianingsih, K., Karnawati, H., Iswanto, B., & Juniwati, E. H. (2024). Customer loyalty to Islamic mobile banking: evaluating the roles of justice theory, religiosity, satisfaction and trust. *International Journal of Bank Marketing*. <https://doi.org/10.1108/IJBM-03-2023-0187>
- Nosrati, L., Bidgoli, A. M., & Javadi, H. H. S. (2024). Identifying people's faces in smart banking systems using artificial neural networks. *International Journal of Computational Intelligence Systems*, 17(1), 9. <https://doi.org/10.1007/s44196-023-00383-7>
- Nguyen, T. T., Nguyen, H. T., Mai, H. T., & Tran, T. T. M. (2020). Determinants of digital banking services in Vietnam: Applying utaut2 model. *Asian Economic and Financial Review*, 10(6), 680–697. <https://doi.org/10.18488/journal.aefr.2020.106.680.697>
- Nwachukwu, D., Azuonwu, B. E., Nwador, C. A., Dike, L. B., & Origbo, H. (2023). Self-service technology adoption and post-purchase intentions of deposit money banks customers in Port Harcourt. *International Journal of Management Sciences*, 10(1), 175-211.
- Orehovački, T., Blašković, L., & Kurevija, M. (2023). Evaluating The Perceived Quality of Mobile Banking Applications in Croatia: An Empirical Study. *Future Internet*, 15(1), 8. <https://doi.org/10.3390/fi15010008>
- Palamidovska-Sterjadovska, N., Prodanova, J., & Ciunova-Shuleska, A. (2024). Why do customers value m-banking apps? A stimulus-organism-response perspective. *Spanish Journal of Marketing-ESIC*, 28(4), 481-499. <https://doi.org/10.1108/SJME-01-2023-0024>
- Paltayian, G., Georgiou, A., & Gotzamani, K. (2024). A combined QFD-AHP decision-making tool for the investigation and improvement of e-banking usage. *International Journal of Quality & Reliability Management*, 41(1), 150172. <https://doi.org/10.1108/IJQRM-02-2021-0030>
- Parayil Iqbal, U., Jose, S. M., & Tahir, M. (2023). Integrating trust with extended UTAUT model: A study on Islamic banking customers'm-banking adoption in the Maldives. *Journal of Islamic Marketing*, 14(7), 1836-1858. <https://doi.org/10.1108/JIMA-01-2022-0030>
- Prihadyanti, D., & Aziz, S. A. (2023). Indonesia toward sustainable agriculture—Do technology-based start-ups play a crucial role. *Business Strategy & Development*, 6(2), 140-157. <https://doi.org/10.1002/bsd2.229>
- Rourke, L., & Anderson, R. (2004). Validity in quantitative content analysis. *Educational Technology Research and Development*, 52(1), 5–18. <http://dx.doi.org/10.1007/BF02504769>
- Sekaran, U., & Bougie, R. (2010). Research methods for business: A skill building approach (5th ed.). John Wiley & Sons.
- Sheth, R., Kaushik, K., Parekha, C., & Chayal, N. (2026). Investigating Mobile Banking and Financial Applications. In *Android and IOS Mobile Forensics: Leveraging Blockchain, Machine Learning, and Deep Learning for Digital Investigations*, 115-148. Berkeley, CA: Apress. https://doi.org/10.1007/979-8-8688-1748-9_5

- Shaikh, A. A., Alamoudi, H., Alharthi, M., & Glavee-Geo, R. (2023). Advances In Mobile Financial Services: A Review of The Literature and Future Research Directions. *International Journal of Bank Marketing*, 41(1), 1-33. <https://doi.org/10.1108/IJBM-06-2021-0230>
- Singh, A. S., & Masuku, M. B. (2014). Sampling Techniques & Determination of Sample Size in Applied Statistics Research: An Overview. *International Journal of Economics, Commerce and Management*, 2(11), 1-22.
- Singh, N. (2023). Impact of e-banking: Prior and after effects on banking activities. *Journal of Pharmaceutical Negative Results*, 310–317. <https://doi.org/10.47750/pnr.2023.14.S02.39>
- Sinha, A. A., Rajendran, S., Nazareth, R. P., Lee, W., & Ullah, S. (2020). Improving the service quality of telecommunication companies using online customer and employee review analysis. *Quality Management Journal*, 27(4), 182-199. <https://doi.org/10.1080/10686967.2020.1809581>
- Tessema, W. K., Girma, M., & Gupta, N. (2026). 5 Factors Influencing the Perceived Service Quality of Customers in E-Banking. *Emerging Technologies and Business Development in the Tropics: A Roadmap for Transformation*.
- Venkatesh, Morris, Davis, & Davis. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3), 425–475. <https://doi.org/10.2307/30036540>
- Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS quarterly*, 157-178. <https://doi.org/10.2307/41410412>
- Wang, C. K., Masukujjaman, M., Alam, S. S., Ahmad, I., Lin, C. Y., & Ho, Y. H. (2023). The Effects of Service Quality Performance on Customer Satisfaction for Non-Banking Financial Institutions in An Emerging Economy. *International Journal of Financial Studies*, 11(1), 33. <https://doi.org/10.3390/ijfs11010033>
- Wu, C. G., & Ho, J. C. (2021). The Influences of Technological Characteristics and User Beliefs on Customers' Perceptions of Live Chat Usage in Mobile Banking. *International Journal of Bank Marketing*. <https://doi.org/10.1108/IJBM-09-2020-0465>
- Yang, Y., & Yin, Z. (2023). Resilient Supply Chains to Improve the Integrity of Accounting Data in Financial Institutions Worldwide Using Blockchain Technology. *International Journal of Data Warehousing and Mining*, 19(4), 1-20. <https://doi.org/10.4018/IJDWM.320648>
- Zhou, T. (2011). An Empirical Examination of Initial Trust in Mobile Banking. *Internet Research*, 44 (38-52). <https://doi.org/10.1108/10662241111176353>