Information Management and Business Review (ISSN 2220-3796)
Vol. 17, No. 2(S), pp. 522-529, August 2025

The Nexus between Operational Failure and Mobile Banking Usage in Malaysia: A Conceptual Framework

*Muhammad Ridzuan Abdul Aziz, Ahmad Razieman Khairul Emran, Muhammad Syukri Mohamed Kamal, Nor Atikah Pishal, Nurul Asyikin Syahiran, Qistina Damia Sorfina Hisham
Faculty of Business and Management, Universiti Teknologi MARA (UiTM), Malaysia
Email: *ridzuandba@uitm.edu.my
Corresponding Author: Muhammad Ridzuan Abdul Aziz

Abstract: Mobile banking has become a common method used by banks in delivering their products and services to customers. However, operational issues occur in the use of mobile banking, including function failure, system failure, information failure, and service failure. Therefore, this research aims to explore the factors that could affect mobile banking usage in Malaysia. Hence, this research presents a conceptual framework on the effects of operational failure (function failure, system failure, information failure, and service failure) on mobile banking usage. Research hypotheses are proposed based on the theorised relationship among the variables in this research. Significant relationships are expected between function failure, system failure, information failure, service failure, and mobile banking usage. It is hoped that this research will provide insights to the banks in effectively managing their mobile banking platform in serving the customers.

Keywords: *Mobile Banking, Function Failure, System Failure, Information Failure, Service Failure.*

1. Introduction

Globally, the advancement of technology has influenced the banking industry to be digitalised, unlike before when everything revolved around bank branches. In the context of the Malaysian banking industry, the Central Bank of Malaysia (BNM) has launched the Financial Inclusion Framework (2023-2026) to address numerous challenges faced by the industry (Fintech News Malaysia, 2023). In particular, BNM laid down seven policy objectives, including policy objective 2, which promotes a secure and inclusive digital financial services in the country (Bank Negara Malaysia, 2023). This shows the support from the regulator towards the use of mobile banking the banks in serving their customers. Mobile banking provides convenience to customers in using banking products and services. The online banking and mobile apps can be accessed 24/7. It makes things faster, easier, and keeps customers happy (Tam & Oliveira, 2016; Kamboj et al., 2022). It has been suggested that the success of mobile banking comes from its potential to reduce transaction costs while improving the user experience of instant and secure financial services (Baabdullah et al., 2019; Kamboj et al., 2022). This, however, is not to suggest there is no disadvantage, as operational failures to feed the information into the platform and manipulate it in real time often dampen the performance of the mobile banking platform and consequently disenchant its users. For example, functional failures take place when users bump into hurdles like broken apps or disrupted transactions. Relying too much on automation has its risks (Bitner, 1990; Kamboj et al., 2022). When things go wrong, customers may get upset because it seems as if the bank neglects them or takes too long to respond.

A report by the World Bank Group (2021) highlighted that the low-income, elderly, and rural communities preferred to use cash and traditional banking services due to their concern about fraud and the security of digital financial services. Security issues involving financial fraud remain one of the concerns of mobile banking customers, where the safety of these customers is threatened by malware attacks (Povera & Borhan, 2024). Besides, the prolonged disruptions in numerous banking services interface with customers and counterparties of a year by two leading Malaysian banks led to the imposition of a huge fine by the Malaysian banking regulator, BNM (Birruntha, 2024). This indicates the importance of maintaining a reliable mobile banking service. That is why it is so important to innovate while keeping services reliable, so customers can keep trusting these digital banking solutions. Therefore, it is crucial to study the effects of the different types of operational failure on mobile banking usage. This research has the following objectives:
Research objective 1: To identify the relationship between function failure and mobile banking usage.
Research objective 2: To identify the relationship between system failure and mobile banking usage.
Research objective 3: To identify the relationship between information failure and mobile banking usage.
Research objective 4: To identify the relationship between service failure and mobile banking usage.

2. Literature Review and Hypotheses Development

Tan's Failure Model

Tan et al. (2016) highlighted three main issues in e-services: functional, informational, and system-related problems. Functional issues refer to challenges customers face throughout their journey, from finding what they need to after-sales service. Informational issues arise when the information provided is inaccurate, insufficient, or irrelevant. System-related problems involve things like a website being hard to navigate, security risks, or very slow loading speeds. All these factors contribute to a less-than-ideal digital banking experience. Similarly, Xu et al. (2013) and Kamboj et al. (2022) emphasized the importance of maintaining high-quality systems and accurate information, as these are crucial for customer satisfaction and continued engagement.

DeLone and McLean Model

DeLone and McLean (2003) introduced the Information System (IS) success model, which provides a comprehensive framework for evaluating information systems based on criteria such as information quality, system quality, and user satisfaction. This approach has evolved to incorporate service quality as a vital element, emphasizing the importance of user support and reliability in digital service performance (Tam & Oliveira, 2016; Kamboj et al., 2022). The flexibility of the DeLone and McLean model has made it highly applicable across various industries, enabling a deeper understanding of user satisfaction and system performance in diverse digital environments.

An Integrated Model of Tan's and DeLone and McLean

Tan's model discusses three key aspects of failure: functional failure (issues in identifying needs and selecting alternatives), information failure (insufficient information provided), and system failure (technical problems such as difficulty navigating) (Tan et al., 2016; Kamboj et al., 2022). On the other hand, the DeLone and McLean model addresses service failure by focusing on issues in service delivery and customer involvement, as well as emphasizing the importance of service quality in user satisfaction. Combining these two models provides a deeper understanding of how failures in mobile banking affect user satisfaction and engagement. This comprehensive approach considers both the technological concerns raised by Tan's model and the service-related issues highlighted in DeLone and McLean's model, offering valuable insights into how such failures influence customer behavior within the mobile banking context.

Mobile Banking Usage

Mobile banking is a powerful tool to help people without access to traditional banks because they can do transactions like transferring money or checking their account balance just by using a mobile phone. According to a report by the World Bank Group (2010), mobile banking is essential to provide financial services to underserved populations, especially in developing countries. Mobile banking makes life easier because there is no need for customers to visit a physical bank, as banking transactions can be done right from home or anywhere. This is a way to give people far from urban areas or without banks a chance to participate in the financial system. Mobile banking is genuinely a great new approach to help people who struggle to reach banks. Mobile banking is convenient because people only need a mobile phone to manage their finances (World Bank Group, 2010). In countries with fewer physical banks, it offers a time- and cost-efficient solution. People can do many things using apps, like transferring money, paying bills, or checking their balance, without needing to visit the bank. This approach is a big help for remote areas or places with no bank presence because transactions can be done anytime and anywhere. However, despite its advantages, mobile banking does come with its challenges. Sometimes systems may fail, internet connections might be unavailable, or there could be cyberattacks. These issues can make people lose trust in the apps. In areas with slow internet, it is even harder to use mobile banking consistently. Therefore, investments in digital infrastructure, cybersecurity measures, and educating users are crucial. Once these concerns are addressed, mobile banking cannot only reach more underserved populations but also become a secure and reliable platform (World Bank Group, 2010). According to the research by Fidelis et al. (2025), continuous mobile banking usage depends on system quality, information quality, and user satisfaction. Users with positive experiences from effective information and systems tend to continue using the mobile banking application despite facing various external challenges (Fidelis et al., 2025). Rouse et al. (2025) found that trust that the users' had in the banks provides a positive effect towards mobile banking usage, despite the users' economic increase impact on the usage is fairly

moderate. Demographic factors such as age, income, and education level were also found to significantly influence mobile banking usage (Rouse et al., 2025). Apau et al. (2025) indicate that mobile banking usage does not depend solely on the features of the application, but also depends on the perceived level of security and trust of the users towards the bank and the technology. It was found that perception of security and trust towards the banks were the main drivers of users' intention, while technology also plays an important role in the context of users with specific demographics (Apau et al., 2025).

Function Failure

Functional failure is one of the elements causing a customer's inability to execute the required transaction activity. The inability to assist clients in weighing their service options is referred to as failure. This is known as "process failure." If this is occurring simultaneously, it results in how consumers act, brought on by unsuccessful transactions (Mustafa et al., 2020). This failure is indirectly linked with customer satisfaction while using mobile banking, as stated by Sosa et al. (2021). Meaning that, mobile banking must avoid any failure, because if it happens, the transactional needs of its users cannot be satisfied adequately. The relationship between mobile banking and function failure is negatively related. This is because a function failure in mobile banking will make customers annoyed because they cannot do online transactions (Mustafa et al., 2020). Previous research has shown that if customer needs are not met, the functional aspect of any service loses all value (Tan et al., 2016). Functional failures in mobile banking can make customers unhappy and stop using it. These issues, like slow systems or glitches, make it hard for people to do their transactions, especially during busy times. When the service does not meet customer needs, they feel frustrated and may lose trust in the bank. If these problems happen often, customers might switch to other banks that provide better and more reliable services. This not only affects the bank's reputation but also leads to a loss of customers. Functional failures prevent essential tasks, like pay and fund transfers, and are immediately dissatisfying. In case users face functional issues (e. g. app crashes, unresponsive features), the main purpose of performing a critical transaction becomes impossible. Not only is that frustrating, but it also creates a belief of unreliability. They have repeatedly shown that functional failures are the biggest driver for overall user dissatisfaction, especially those that occur during high-stakes transactions like bill payments and salary transfers (Kamboj et al., 2022). Based on the above arguments, the following hypothesis is proposed:

H_1: There is a significant relationship between function failure and mobile banking usage by bank customers.

System Failure

In mobile banking, faults happen because of system failures. Internal factors directly contribute to system failures. Not only that, but system failures also have an impact in terms of use, procedure, expenses, and user pleasure (Mustafa et al., 2020). One of the factors is inaccessibility, which happens to be the inability of users to log into their mobile banking and thus prevents customers from attempting any transactions (Sosa et al., 2021). Similarly, delays contribute to system malfunctions that irritate customers when they use mobile banking daily (Mustafa et al., 2020). Furthermore, insecurity also causes system failure problems because the increase in security issues contributes to user concerns. This is reinforced in the article by Mustafa et al. (2020), which states that failure to provide security to users is also part of a system failure. Therefore, we can see that system security correlates with system security. This insecurity problem exists when scammers misuse user data. System failure in mobile banking is another dimension of cyber risk (Okpa, 2022). This is because the system triggered various risks by embedding distributed denial of services (DDoS), causing all banking systems to shut down completely. Therefore, a suggestion (Almajali et al., 2022) is that mobile banking developers should improve system strength to avoid system failure. System failure can be prevented by using software that is applied to ensure a specific goal or specific issue is resolved (Rahman et al., 2024). It is to ensure that the system can avoid malfunction, as system components intersect with one another, and when one component breaks down, it may be liable for triggering a few issues in the system (Rahman et al., 2024). Customers have also raised concerns about system failure, one of the most severe risks to mobile banking programs (Mugo, 2021). If something goes amiss with mobile banking, the bank will suffer significant losses, including millions of dollars in losses, and the bank client will also be affected (Serrah & Maidin, 2022). The quality of the system, which allows users to access the content of the mobile banking app, has an impact on how efficiently it operates (Delone & McLean, 2003; Wixom & Todd, 2005).

According to previous research, examples of system failures in mobile banking include handphone operability, security issues, poor internet connection, authentication risks and issues, viruses, hackers' fear, etc.

(Gomathinayagam et al., 2019). From this, we can see that the problem might come from the bank system or the customer device, or a fault. Therefore, the bank needs to update its system and improve its quality to cope with the problem between customers and the mobile banking system, so that customers do not face difficulty despite the problem coming from themselves. Bank customers' usage patterns are significantly affected by system failures (Mustafa et al., 2020). System failures in mobile banking negatively affect how customers use it because they make the service unreliable. The system is very important to ensure customers can access the app and complete their transactions without problems. However, issues like poor internet, security risks, errors during login, and device problems can cause the system to fail. These problems may come from the bank's side or the customer's device, but both create frustration and make it harder for users to trust mobile banking. If these failures happen often, customers might stop using the app or switch to another bank with a better system. To fix this, banks need to update and improve their systems regularly to make sure the app works smoothly and meets customers' needs. This shows that system failures can significantly reduce how much people use mobile banking. Therefore, the following hypothesis is proposed:
H_2: There is a significant relationship between system failure and mobile banking usage by bank customers.

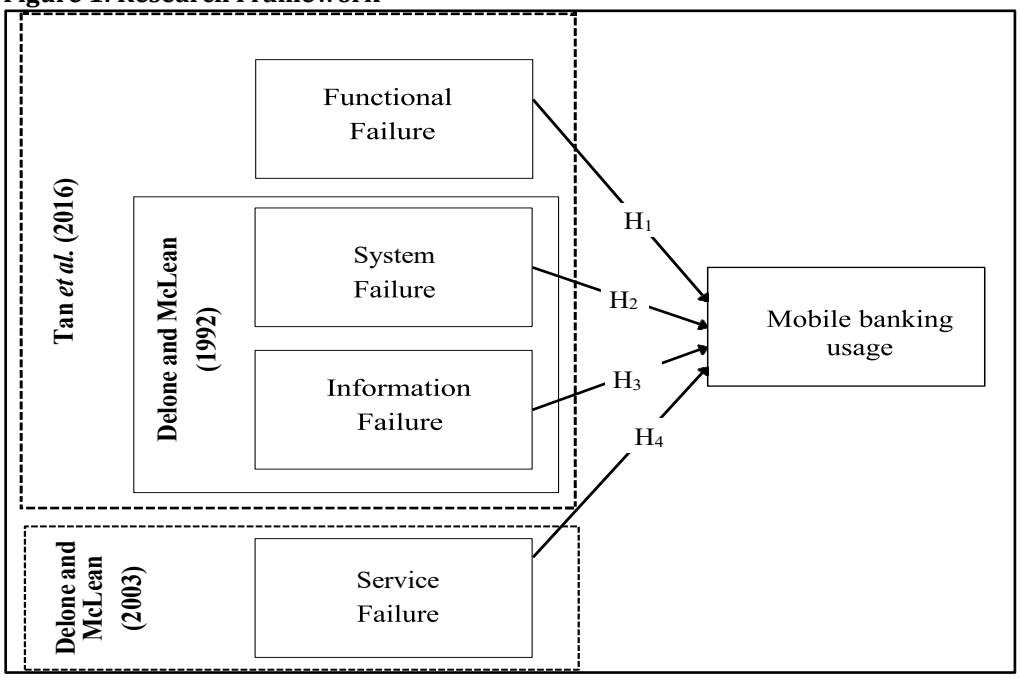
Information Failure
The relationship between information failure and mobile banking is negatively related in that each failure dimension affects user perceptions, and indirectly leads to user trust and loyalty in a different manner. It is important to understand these relationships to identify the root causes of dissatisfaction and engineer tractable interventions. The negative relationship between information failure and mobile banking adoption is well-documented in recent research. Information failure occurs when customers do not receive sufficient, accurate, or timely information about mobile banking features, security protocols, or operational guidelines. This lack of information often leads to confusion, decreased trust, and heightened perceptions of risk, all of which discourage users from adopting or continuing to use mobile banking services. For instance, a study by Kamboj et al. (2022) highlighted that information failure significantly impacts user satisfaction and engagement with mobile banking. Insufficient or poorly communicated information about technical errors, service functionalities, or updates can erode customer confidence, leading to reduced usage. Researchers have emphasized that addressing these information gaps is crucial for enhancing user trust and satisfaction. Similarly, Laukkanen and Kiviniemi (2010) found that inadequate guidance and communication from banks exacerbate barriers such as perceived risks, usability issues, and value concerns in mobile banking. These barriers ultimately lead to resistance to adopting the technology. The study also showed that effective communication can mitigate these challenges by improving customer understanding and trust. In summary, information failure negatively affects the adoption and continued use of mobile banking by reducing user trust, satisfaction, and perceived value. Addressing these information-related issues is vital for banks to improve customer experience and adoption rates. Losses of trust are also due to informational failures, e. g. if account details are incorrect or delayed. For example, the user will lose faith in the platform's dependability if they receive contradicting information from it, such as their account balance. Accordingly, research stresses that informational precision and timeliness are critical determinants of satisfaction in the digital banking setting (Nedeljković, 2022). The relationship between information failure and mobile banking is predominantly negative, as it undermines customer trust, satisfaction, and adoption. Based on the above arguments, the following hypothesis is proposed:
H_3: There is a significant relationship between information failure and mobile banking usage by bank customers.

Service Failure
Mobile banking performance has shown a significantly positive impact on customers' behavior (Chong, 2013). According to Merhi et al. (2021), customers' perceptions of the benefits of using mobile banking, particularly the ability to complete financial transactions more quickly, are represented by performance expectancy, which represents the convenience of adoption with technology that also includes full-time availability of mobile banking without restrictions. Despite these advantages, customers' financial stability might be significantly affected by service failure. Many consumers find themselves in risky positions when internet platforms are unavailable, particularly when there are few options for physical banking. Service failure usually occurs when an organization fails to meet consumer desires (Azemi et al., 2019; Hazée et al., 2017). According to Mattila and Ro (2008), service failure prevails when the service is not delivered to the customer as it was originally planned. Migacz et al. (2018) defined service failure as when customers are not satisfied because their

perception of the service they have received falls short of what they expect. According to Mustafa et al. (2020), there is a decrease in the service offered to customers at the time of the online transaction through mobile apps, and the final transaction of the user is dependent on the response time of the mobile bank apps. Past studies have pointed out that failure of mobile banking services will result in the customers thinking that such a service has wasted their time, and eventually affect the customer's behavior (Dwivedi et al., 2021; Shaikh & et al., 2015; Singh et al., 2017).

The frequency of mobile banking service disruptions has been increasing in recent years and has led many consumers to move back to the use of cash in their transactions. This is true in times when such systems go through outages or planned upgrades, resulting in customers becoming helpless and distressed with their financial management (Zhou et al., 2021). Such technical issues not only create problems with responsiveness in mobile banking applications but can also be a great source of frustration among users who depend on these platforms for their daily financial activities. Further, when apps fail to provide efficient and reliable service, this diminishes the credibility and trustworthiness that consumers are presumed where customers will consider other banking options. Hence, system reliability should be at the top of the list of concerns in enhancing the user experience in their mobile banking services. Service failure and mobile banking are negatively related. Service failure in mobile banking often refers to instances where the service does not meet the user's expectations due to issues such as technical glitches, failed transactions, or poor user experience. These failures can lead to negative consequences, including dissatisfaction, loss of trust, and reduced usage of mobile banking services. The past decade has seen a growing consideration of service failure and recovery issues by researchers (Azemi et al., 2019; Su et al., 2019). One stream of researchers considered two major online service failure types, which are technical problems with websites (specifically, 'technological' failures), and failures to receive products purchased online (Forbes et al., 2005). The relationship between service failure and mobile banking is negative, as service failures directly impact customer trust, satisfaction, and retention. Research indicates that service failures erode customer trust and increase dissatisfaction, often leading to reduced usage or abandonment of mobile banking platforms. According to Kamboj et al. (2022), frequent service interruptions significantly discourage continued engagement, particularly when users perceive the platform as unreliable and risky. Based on the above arguments, the following hypothesis is proposed:
H_4: There is a significant relationship between service failure and mobile banking usage by bank customers.

Figure 1: Research Framework



3. Research Design

This research is quantitative. The study population is the current mobile banking users, to be sampled through the convenience sampling method. This population is chosen as it enables examination of the effect of operational failure on mobile banking usage. G*Power software is used to determine the minimum required sample size. Based on the inclusion of four independent variables, at least 85 respondents will be sufficient to meet the statistical standards. A non-probability sampling method, specifically convenience sampling, is chosen, which involves the collection of data from a research population that is easily accessible to the researcher (Rahi, 2017). Probability sampling cannot be used as it is impossible to obtain the list of mobile banking users from the banks due to the secrecy of banking customer information. Data will be collected in a non-intrusive way, and respondents will complete electronic surveys on their own. In addition, ethical considerations will be followed carefully to ensure that participants' trust and confidentiality are maintained. Survey responses will be assigned unique non-identifiable codes to ensure anonymity. Survey instruments ensure that the data taken is accurate and meets the study objectives. The survey uses the summated rating method in the Likert scale format to collect data from respondents. The application of the Likert Scale is straightforward to measure and understand the views of each respondent (Subedi, 2016). This Likert Scale is practical for measuring respondents' perception to indicate how strongly they disagree or strongly agree with a topic question (McLeod, 2023). Every question has the option to choose a rating starting from number 1, indicating strongly disagree, until number 5, indicating strongly agree. The survey items are adopted or adapted from previous studies. Statistical tests will be performed involving reliability, descriptive, correlation, and multiple regression analysis using the Statistical Package for the Social Sciences (SPSS) software.

4. Conclusion

Further studies are required to examine the effects of operational failure (function failure, system failure, information failure, and service failure) on mobile banking usage. Hence, a questionnaire survey will be designed and distributed to empirically examine these effects. Responses gathered will be analysed using SPSS in testing the research hypotheses. This research is limited to the Malaysian context. Future researchers should consider testing the research framework in other countries to increase the generalisability of the findings. We hope that the research findings will help the banks in designing their mobile banking application. The results will also assist future researchers in designing their studies on operational failures and mobile banking usage.

References

Almajali, D., Al-Okaily, M., Al-Daoud, K., Weshah, S., & Shaikh, A. A. (2022). Go cashless! Mobile payment apps acceptance in developing countries: The Jordanian context perspective. *Sustainability, 14*(20), 13524. https://doi.org/10.3390/su142013524

Apau, R., Titis, E., & Lallie, H. S. (2025). Towards a better understanding of Mobile banking app adoption and use: Integrating security, risk, and trust into UTAUT2. *Computers, 14*(4), 144. https://doi.org/10.3390/computers14040144

Azemi, Y., Ozuem, W., Howell, K. E., & Lancaster, G. (2019). An exploration into the practice of online service failure and recovery strategies in the Balkans. *Journal of Business Research, 94,* 420-431.

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

Bank Negara Malaysia. (2023). *Financial inclusion framework 2023-2026: Strategy paper.* https://www.bnm.gov.my/documents/20124/55792/SP-2nd-fin-incl-framework.pdf

Birruntha, S. (2024, August 14). Bank Negara fines two banks, Maybank and others, for e-banking service outages. New Straits Times. https://www.nst.com.my/business/corporate/2024/08/1091515/bank-negara-fines-two-banks-maybank-and-other-e-banking-service

Bitner, M. J. (1990). Evaluating service encounters: The effects of physical surroundings and employee responses. *Journal of Marketing, 54*(2), 69-82.

Chong, A. Y. L. (2013). Understanding mobile commerce continuance intentions: An empirical analysis of Chinese consumers. *Journal of Computer Information Systems, 53*(4), 22-30.

Delone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-

year update. *Journal of Management Information Systems, 19*(4), 9-30.

Dwivedi, P., Alabdooli, J. I., & Dwivedi, R. (2021). Role of FinTech adoption for competitiveness and performance of the bank: A study of the banking industry in the UAE. *International Journal of Global Business and Competitiveness, 16*(2), 130-138.

Fidelis, U. A., Ugbah, A. A., Alajekwu, U. B., Onuorah, A. C., Erhijakpor, A. O., & Adegbite, Y. A. (2025). Mobile banking application challenges and continued usage in Nigeria: Mediating influence of information and systems success model. *Journal of Posthumanism, 5*(4), 1157-1174.

Fintech News Malaysia. (2023). *BNM lays out second financial inclusion framework for the next 4 Years*. https://fintechnews.my/37202/financial-inclusion/bnm-lays-out-second-financial-inclusion-framework-for-the-next-4-years/

Forbes, L. P., Kelley, S. W., & Hoffman, K. D. (2005). Typologies of e-commerce retail failures and recovery strategies. *Journal of Services Marketing, 19*(5), 280-292.

Gomathinayagam, S., Bharathi, V., & Azhakappan, C. (2019). Analysis of problems faced by customers during the use of Mobile Banking in Tenkasi. *International Journal of Research and Analytical Reviews, 6*(2), 977-980. https://ijrar.com/upload_issue/ijrar_issue_20544042.pdf

Hazée, S., Van Vaerenbergh, Y., & Armirotto, V. (2017). Co-creating service recovery after service failure: The role of brand equity. *Journal of Business Research, 74*, 101-109.

Kamboj, S., Sharma, M., & Sarmah, B. (2022). Impact of mobile banking failure on bank customers' usage behaviour: The mediating role of user satisfaction. *International Journal of Bank Marketing, 40*(1), 128-153. https://doi.org/10.1108/IJBM-10-2020-0534

Laukkanen, T., & Kiviniemi, V. (2010). The role of information in mobile banking resistance. *International Journal of Bank Marketing, 28*(5), 372-388.

Mattila, A. S., & Ro, H. (2008). Discrete negative emotions and customer dissatisfaction responses in a casual restaurant setting. *Journal of Hospitality & Tourism Research, 32*(1), 89-107.

McLeod, S. (2023, July 31). *Likert scale questionnaire: Examples & analysis.* Simply Psychology. www.simplypsychology.org/likert-scale.html

Merhi, M., Hone, K., Tarhini, A., & Ameen, N. (2021). An empirical examination of the moderating role of age and gender in consumer mobile banking use: A cross-national, quantitative study. *Journal of Enterprise Information Management, 34*(4), 1144-1168.

Migacz, S. J., Zou, S., & Petrick, J. F. (2018). The "terminal" effects of service failure on airlines: Examining service recovery with justice theory. *Journal of Travel Research, 57*(1), 83-98.

Mugo, D.W. (2021). Effect of top management support on implementation of mobile banking projects in commercial banks in Kenya. *Journal of Entrepreneurship & Project Management, 1*(1), 27-33.

Mustafa, S. Z., Kar, A. K., & Janssen, M. F. W. H. A. (2020). Understanding the impact of digital service failure on users: Integrating Tan's failure and DeLone and McLean's success model. *International Journal of Information Management, 53,* 102119. https://doi.org/10.1016/j.ijinfomgt.2020.102119

Nedeljković, I. (2022). Determinants and consequences of user trust in mobile banking. *Bankarstvo, 51*(3/4), 170-201. https://doi.org/10.5937/bankarstvo2204170N

Okpa, M.-O, O. (2022). An assessment of cybercrime in commercial banks in Calabar metropolis. *Ibom Journal of Social Issues, 11*(4), 20-35. https:/ doi.org/10.60787/ijsi.v11i2.44

Povera, A., & Borhan, N. (2024, March 7). Banks are exploring ways for mobile banking apps to better address malware issues on devices. *New Straits Times.* https://www.nst.com.my/news/nation/2024/03/1022571/banks-exploring-ways-mobile-banking-apps-better-address-malware-issues#google_vignette

Rahi, S. (2017). Research design and methods: A systematic review of research paradigms, sampling issues, and instrument development. *International Journal of Economics & Management Sciences, 6*(2), 1-5. https://doi.org/10.4172/2162-6359

Rahman, S., Arshid, N., Ayaz, Z., Watara, S., Iqbal, M., Ahmad, S., & Ali, R. (2024). Failures and repairs: An examination of software system failure. *Bulletin of Business and Economics, 13*(1), 465-474. https://doi.org/10.61506/01.00229

Rouse, M., Bátiz-Lazo, B., & Carbó-Valverde, S. (2025). Trust and socio-demographic influences on mobile banking adoption in South Africa: A longitudinal study. *International Journal of Bank Marketing*. https://doi.org/10.1108/IJBM-08-2024-0458

Serrah, E. A., & Maideen, M. B. H. (2022). E-banking services and customer satisfaction: Focus on a private bank in Malaysia. *International Journal of Academic Research in Business and Social Sciences, 12*(10), 1489-

1499. http://dx.doi.org/10.6007/IJARBSS/v12-i10/13077

Shaikh, A. A., Karjaluoto, H., & Chinje, N. B. (2015). Continuous mobile banking usage and relationship commitment–A multi-country assessment. *Journal of Financial Services Marketing, 20*, 208-219.

Singh, N., Srivastava, S., & Sinha, N. (2017). Consumer preference and satisfaction of M-wallets: A study on North Indian consumers. *International Journal of Bank Marketing, 35*(6), 944-965.

Sosa, L., Abhari, K., Pesavento, M., Koobchehr, F., Xiao, B., Kohsuwan, P., & Olivares, F. (2021). Service failure recovery in the sharing economy: A case study of Airbnb. *Proceedings of the 54th Hawaii International Conference on System Sciences.*

Su, L., Stepchenkova, S., & Kirilenko, A. P. (2019). Online public response to a service failure incident: Implications for crisis communications. *Tourism Management, 73,* 1-12.

Subedi, P. (2016). Using Likert-type data in social science research: Confusion, issues and challenges. *International Journal of Contemporary Applied Sciences, 3*(2), 36-49. http://www.ijcar.net/assets/pdf/Vol3-No2-February2016/02.pdf

Tam, C., & Oliveira, T. (2016). Understanding the impact of m-banking on individual performance: DeLone and McLean and TTF perspective. *Computers in Human Behavior, 61*, 233-244.

Tan, C.-W., Benbasat, I., & Cenfetelli, R. (2016). An exploratory study of the formation and impact of electronic service failures. *MIS Quarterly, 40*(1), 1-29. https://doi.org/10.25300/MISQ/2016/40.1.01

Wixom, B. H., & Todd, P. A. (2005). A theoretical integration of user satisfaction and technology acceptance. *Information systems research, 16*(1), 85-102.

World Bank Group. (2010). *Mobile banking in Indonesia: Assessing the market potential for mobile technology to extend banking to the unbanked and underbanked*. World Bank. https://documents.worldbank.org/en/publication/documents-reports/documentdetail /728801495012734121/mobile-banking-in-indonesia-assessing-the-market-potential-for-mobile-technology-to-extend-bankingto-the-unbanked-and-underbanked

World Bank Group. (2021). *The Global Findex Database 2021.* https://openknowledge.worldbank.org/bitstream/handle/10986/37578/9781464818974.pdf

Xu, J. D., Benbasat, I. & Cenfetelli, R. T. (2013). Integrating service quality with system and information quality: An empirical test in the e-service context. *MIS Quarterly, 37*(3), 777-794.

Zhou, Q., Lim, F. J., Yu, H., Xu, G., Ren, X., Liu, D., Wang, X., Mai, X., & Xu, H. (2021). A study on factors affecting service quality and loyalty intention in mobile banking. *Journal of Retailing and Consumer Services, 60,* 102424.