International Journal of Science and Research Archive

eISSN: 2582-8185

Cross Ref DOI: 10.30574/ijsra

Journal homepage: https://ijsra.net/

(RESEARCH ARTICLE)

Check for updates

Developing a measurement tool for analysis of technology acceptance and use factors, quality factors and risk factors on behavioral outcomes through mediated trust in mobile banking case study bank XYZ: A pilot study

Syauqi Bima Prema Pasha and Indrawati *

Faculty of Economics and Business, Telkom University, Bandung, Indonesia.

International Journal of Science and Research Archive, 2025, 15(03), 1816-1824

Publication history: Received on 15 May 2025; revised on 23 June 2025; accepted on 25 June 2025

Article DOI: https://doi.org/10.30574/ijsra.2025.15.3.1889

Abstract

User loyalty is a key focus for Bank XYZ to maintain profitability and Cost Per Acquisition (CPA) efficiency. The 2025 report shows active user growth and a decline in dormant customer ratio for Bank XYZ during 2024, yet potential losses from dormant customers remain. This study aims to analyze the factors that could help Bank XYZ design strategies to enhance mobile banking loyalty. Adopting an antecedent model, the study references (Geebren et al, 2021) on consumer satisfaction in mobile banking and (Kumar et al, 2021) on trust and cultural dimensions in mobile banking. A pilot test with 30 respondents shows that all 69 questionnaire items meet validity (CITC > 0.3) and reliability (Cronbach's Alpha > 0.7) thresholds. This measurement instrument is ready for further application in a full-scale study on strategies to improve mobile banking loyalty.

Keywords: Customer Loyalty; Customer Dormant; Mobile Banking; Pilot Test; Banking

1. Introduction

As of October 2024, there has been a noticeable increase in the dormant customer ratio from 2023 to 2024. Dormant customers in the banking industry refer to users or account holders who have not engaged in any transactions or activities on their accounts for an extended period. This includes withdrawals, deposits, credit card usage, or any other form of transactions. These customers are considered inactive or "sleeping," even though they remain registered as bank clients. This status can impact the bank's performance assessment and marketing strategies (Sulaiman & Hassan, 2019). In the context of digital banking, the term often describes customers who have not logged in or made transactions on mobile banking applications or other banking platforms over a certain period, such as 3, 6, or 12 months. Based on data from the analytic platform, which tracks the performance of Mobile banking of Bank XYZ, both new and active users of mobile banking increased from January to June 2024 compared to the previous year, as shown by the average dormant ratio decreasing to 24.61% in 2024, compared to 56.08% in 2023. Despite this improvement, Bank XYZ still faces the potential risk of losses from dormant customers, with an estimated potential loss of IDR 27.77 billion based on their Cost Per Acquisition (CPA) of IDR 154,000 per customer in 2024. In practice, acquiring new customers involves both online and offline marketing strategies. Once customers are onboarded, the bank must invest in IT platforms such as mobile banking, which involves development costs, including Customer Service Costs per customer (CSC) for ongoing maintenance. In 2023, Bank XYZ spent IDR 292.39 billion on promotional expenses. When divided by the total number of customers (1.2 million), the CPA amounted to IDR 245,000 per customer. In 2024, the promotional expenses decreased to IDR 275.98 billion, and with a customer base of 1.8 million, the CPA dropped to IDR 154,000. This data highlights the need for a thorough analysis of the factors influencing customer adoption of Bank XYZ mobile banking services to ensure that active customers do not become dormant and to minimize the associated potential losses

* Corresponding author: Indrawati.

2. Literature review

This study adopts an antecedent model. In designing the framework of thought, the researcher conducted a literature review on the research of Geebren et al., 2021 which examined "Examining the role of Consumer Satisfaction in Mobile eco-systems: Evidence from Mobile banking services" with a case study of a Bank in Libya and To strengthen the framework model, the researcher conducted another literature review, namely the research of Kumar et al., (2021) which examined "A meta-analysis of Trust in Mobile banking: the moderating role of cultural dimensions" with the results of 63 quantitative studies on trust in Mobile banking using meta-analysis techniques.

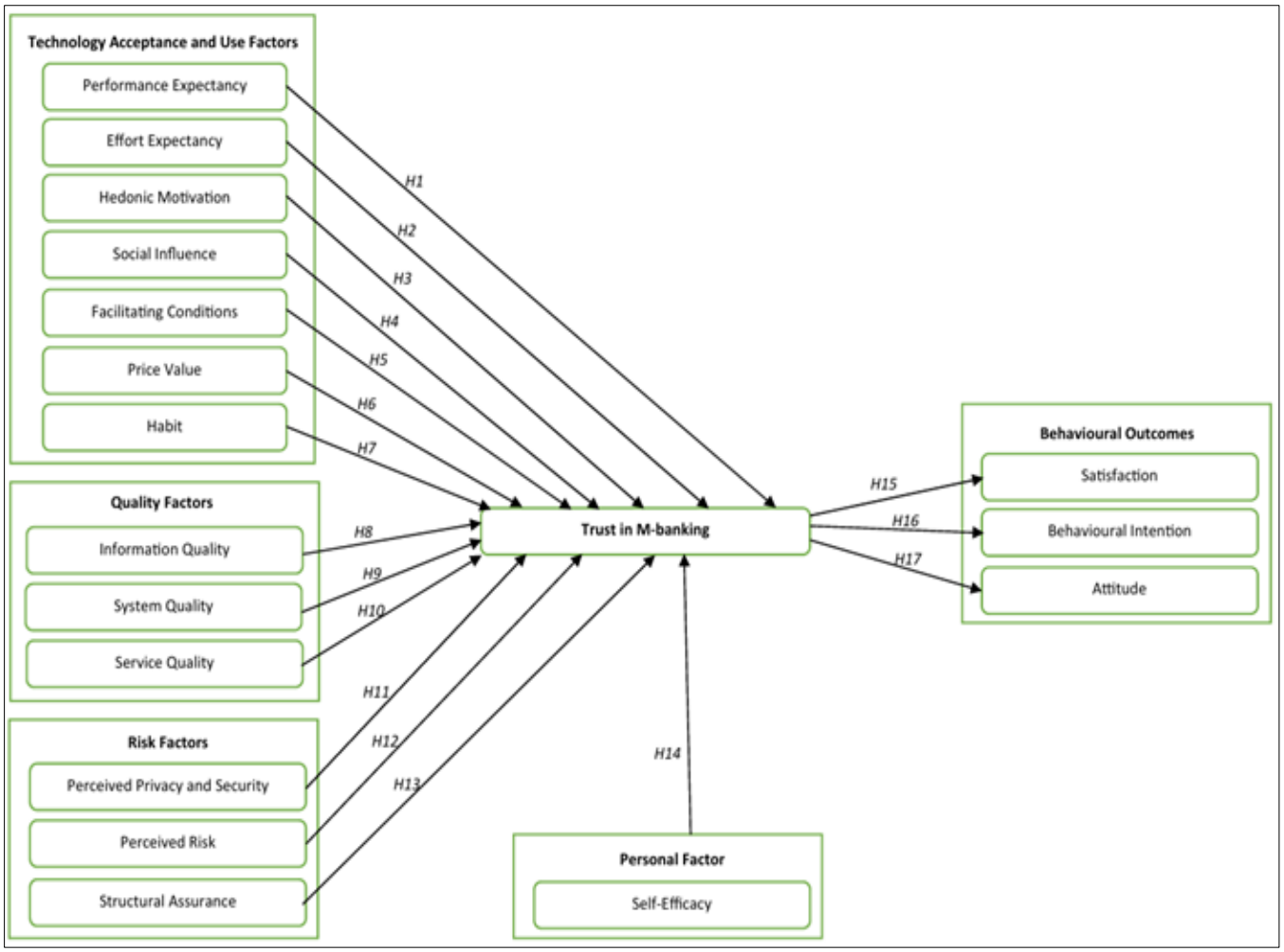

Figure 1 The model of research framework

This study uses a structured online questionnaire as the main rese

arch instrument. It evaluates the following variables

- Independent Variables: variabel Performance Expectancy, Effort Expectancy, Hedonic Motivation, Social Influence, Facilitating Conditions, Price Value, Habit, Information Quality, System Quality, Service Quality, Perceived Privacy and Security, Perceived Risk, Structural Assurance, Self-Efficacy.
- Dependent Variable: Satisfaction, Behavioural Intention, Attitude
- Moderating Variable: Trust.

This study aligns with the research by Indrawati et al. (2022), which analyzes that the quality of information, systems, and services significantly influences user trust, which then contributes to loyalty and behavioral intentions to use digital services such as mobile banking. Therefore, developers must ensure that the technology infrastructure and system mantenance operate optimally to mantan user trust. Based on the literature review from both references, the researcher

adopted the framework model by Kumar et al. (2023) because this model is more comprehensive for examining the effect of mobile banking technology adoption. It also addresses the research gap in previous studies that did not combine Risk Factors, Quality Factors, and Personal Factors with the Technology Acceptance Model (TAM) in influencing behavioral outcomes.

3. Methodology

To develop a good measurement tool, this study also uses the same method as Indrawati et al. (2023), namely a survey approach, to understand actual digital behavior, such as online purchases and technology adoption, without laboratory experiments. To ensure the quality of the measurement instrument, the researcher conducted a validity test to demonstrate that the relational or causal relationship between the variables or constructs tested in this study only occurred within the variables themselves and not influenced by other variables. Additionally, a reliability test was conducted to assess the trust, consistency, and stability of the measurement results (Indrawati, 2015). Content validity is ensured through the adaptation of published items, display validity is obtaned through expert feedback in the fields of marketing and digital media, and readability tests were conducted with a trial of 30 respondents to assess respondents' understanding. Indrawati (2015) explans that content validity refers to the extent to which the items used to measure the research variables logically align with what is being measured. This is done by adapting and modifying items from previously published research. Face validity is assessed through feedback and recommendations from experts in the field of marketing. Additionally, readability is tested by evaluating the respondents' understanding of the questionnare. Table 1 presents the items included in the questionnare.

Table 1 Items on Questionnare

Items	**No. Items**	**Reference Items**
Technology Acceptance and Use Factors		
Performance Expectancy		
I use mobile banking in my daily life.	PE1	(Abu-Taeh et al., 2022)
Using mobile banking increases my chances of completing important tasks.	PE2	
Mobile banking allows me to complete tasks more quickly.	PE3	
I am more productive when I use mobile banking.	PE4	
Effort Expectancy		
I find it simple to learn how to use mobile banking.	EIEI1	(AIbui-Taiieih eit ail., 2022)
My interaction with Mobile Banking is simple and easy to grasp.	EIEI2	
Internet Mobile Banking is simple to use for me.	EIEI3	
It is simple for me to learn how to use mobile banking.	EIEI4	
Hedonic Motivation		
Using Mobile banking is fun.	HM1	(Baiaibduillaih eit ail., 2019)
Using Mobile banking is enjoyable.	HM2	
Using Mobile banking is entertaining.	HM3	
Social Influence		
Important people in my life believe that I should use mobile banking.	SI1	(AIbui-Taiieih eit ail., 2022)
People who have an impact on my behavior believe that I should use mobile banking.	SI2	
People whose opinions I respect prefer that I use mobile banking.	SI3	
Facilitating Conditions		

I have the necessary resources to use mobile banking.	FC1	(AIbui-Taiieih eit ail., 2022)
I have the knowledge necessary to use mobile banking.	FC2	
Mobile banking works with the other technologies I use.	FC3	
I can seek assistance from others if I am having difficulty using mobile banking.	FC4	
Price Value		
Mobile banking is reasonably priced.	PV1	(Baiaibduillaih eit ail., 2019)
Mobile banking is good value for the money.	PV2	
At the current price, Mobile banking provides good value.	PV3	
Habit		
The use of Mobile banking has become a habit for me.	HT1	(Baiaibduillaih eit ail., 2019)
I am addicted to using Mobile banking.	HT2	
I must use Mobile banking.	HT3	
Using Mobile banking has become natural to me.	HT4	
Quality Factors		
Information Quality		
Mobile banking provides me with information relevant to my needs.	IQ1	(Baiaibduillaih eit ail., 2019)
Mobile banking provides me with sufficient information.	IQ2	
Mobile banking provides me with accurate information.	IQ3	
Mobile banking provides me with up-to-date information.	IQ4	
Mobile banking will provide relevant information about transactions.	IQ5	
System Quality		
Mobile banking quickly loads all the text and graphics.	SQ1	(Baiaibduillaih eit ail., 2019)
Mobile banking is user friendly.	SQ2	
Mobile banking is easy to navigate	SQ3	
Mobile banking is visually attractive.	SQ4	
I would find Mobile banking secure enough to conduct my banking transactions.	SQ5	
Service Quality		
The level of service quality I receive from Mobile banking is high.	SRQ1	(Baiaibduillaih eit ail., 2019)
The quality of service I receive from Mobile banking is excellent.	SRQ2	
Mobile banking provides a high level of service quality.	SRQ3	
Risk Factors		
Perceived Privacy and Security		
M-banking service channel is safe to interact with for financial purposes.	PS1	(AIbdeinneibi Heilai Bein, 2023)
M-banking service channel protects information about my account information.	PS2	
M-banking service channel does not share my personal information with other sites.	PS3	

Perceived Risk		
Using mobile banking services exposes my bank account to the risk of fraud.	PR1	(AIbui-Taiieih eit ail., 2022)
Using mobile banking services puts my bank account at risk.	PR2	
I believe that using mobile banking services jeopardizes my privacy.	PR3	
Structural Assurance		
I do not incur in the risk of financial losses using mobile banking services.	SAI1	(Oliveiirai eit ail., 2014)
I do not incur in the risk of personal information theft using mobile banking services.	SAI2	
My banks mobile banking service has a Client Protection Policy.	SAI3	
My personal mobile phone information is secure when I use the Mobile banking service.	SAI4	
Personal Factor		
Self-Efficacy		
I could complete a transaction using Mobile banking if there was no one around to tell me what to do.	SEI1	(AIlailwain eit ail., 2016)
I could complete a transaction using Mobile banking if I could call someone for help if I got stuck.	SEI2	
I could complete a transaction using Mobile banking if I had a lot of time to complete the job I started.	SEI3	
I could complete a transaction using Mobile banking if I had just the built-in help facility for assistance.	SEI4	
I could complete a transaction using Mobile banking if there was no one around to tell me what to do.	SEI5	
Behavioral Outcomes		
Satisfaction		
I strongly recommend M-banking to others.	ST1	(AIbdeinneibi Heilai Bein, 2023)
I think that I made the correct decision to use M-banking.	ST2	
I am satisfied with the way that M-banking has carried out transactions.	ST3	
I am satisfied with the service I have received from M-banking.	ST4	
Behavioural Intention		
I intend to use the mobile banking system if I have access to it.	BI1	(AIbui-Taiieih eit ail., 2022)
For my banking needs, I would use mobile banking.	BI2	
If I have access to the mobile banking system, I want to make the most of it.	BI3	
Attitude		
Mobile banking advertising is informative.	AIT1	(Cheiuing Millissai F.Y, 2017)
Mobile banking advertising is meaningful.	AIT2	
Mobile banking advertising is fun.	AIT3	
Mobile banking advertising is likable.	AIT4	
Mobile banking advertising is relevant to me.	AIT5	
Mobile banking advertising is useful for me.	AIT6	

Trust		
I believe that M-banking is trustworthy	TR1	(AIbdeinneibi Heilai Bein, 2023)
I believe that M-banking keeps its promises	TR2	
I believe that M-banking keeps users' interests in mind.	TR3	

4. Results

The trial was conducted on 30 respondents through an online questionnaire using Google Forms. All respondents are representatives of individuals domiciled in Indonesia. This study uses a quantitative approach to empirically test Technology Acceptance and Use Factors, Quality Factors and Risk Factors on Behavioral Outcomes Through Trust Mediation on Mobile Banking of Bank XYZ. The collected data were analyzed using SPSS Software. According to Friedenberg and Kaplan in Indrawati (2015:149) [2], an item is said to be valid if the "Corrected Item - Total Correlation" (CITC) is greater than 0.3. For CA, a value of 0.60 to 0.70 is acceptable in exploratory research and a value below 0.60 indicates a lack of internal consistency reliability (Hair et al., 2022). Meanwhile, Indrawati et al. (2023) stated that the CA value must be more than 0.7 to meet the reliability test parameters. Because there are differences of opinion among experts regarding the CA value threshold, in this study, the threshold used is the largest threshold, namely 0.7 because a higher value indicates a higher level of reliability. The results of this trial are that all items in the 17 constructs in this study are declared valid and the CA values obtained by all variables are above 0.7 so that it can be concluded that each variable meets the reliability test requirements. The results of the trial are presented in Table 2 below.

Table 2 Pilot Test Result

Item Code	CITC	Cronbach's AIlpha (CAI)	Variable
PEI1	0.835	0.870	Performance Expectancy
PEI2	0.823		
PEI3	0.882		
PEI4	0.855		
EIEI1	0.915	0.917	Effort Expectancy
EIEI2	0.897		
EIEI3	0.880		
EIEI4	0.887		
HM1	0.766	0.808	Hedonic Motivation
HM2	0.854		
HM3	0.923		
SI1	0.803	0.836	Social Influence
SI2	0.891		
SI3	0.911		
FC1	0.901	0.927	Facilitating Conditions
FC2	0.918		
FC3	0.953		
FC4	0.853		
PV1	0.822	0.828	Price Value
PV2	0.853		
PV3	0.926		

HT1	0.791	0.862	Habit
HT2	0.824		
HT3	0.897		
HT4	0.851		
IQ1	0.786	0.904	Information Quality
IQ2	0.85		
IQ3	0.882		
IQ4	0.896		
IQ5	0.844		
SQ1	0.805	0.870	System Quality
SQ2	0.841		
SQ3	0.790		
SQ4	0.839		
SQ5	0.806		
SRQ1	0.885	0.781	Service Quality
SRQ2	0.937		
PR1	0.83	0.700	Perceived Risk
PR2	0.811		
PR3	0.737		
PS1	0.787	0.766	Perceived Privacy and Security
PS2	0.855		
PS3	0.833		
SAI1	0.929	0.943	Structural Assurance
SAI2	0.941		
SAI3	0.942		
SAI4	0.902		
SEI1	0.853	0.864	Self-Efficacy
SEI2	0.812		
SEI3	0.772		
SEI4	0.804		
SEI5	0.803		
TR1	0.82	0.762	Trust
TR2	0.836		
TR3	0.819		
ST1	0.787	0.859	Satisfaction
ST2	0.895		
ST3	0.812		
ST4	0.858		

AIT1	0.787	0.868	Attitude
AIT2	0.694		
AIT3	0.777		
AIT4	0.79		
AIT5	0.834		
AIT6	0.791		
BI1	0.87	0.707	Behavioural Intention
BI2	0.835		
BI3	0.663		

5. Conclusion

This pilot study successfully developed and tested a measurement tool to analyze the relationship between Technology Acceptance and Use Factors, Quality Factors, and Risk Factors on Behavioral Outcomes through Trust mediation in Mobile Banking at Bank XYZ. The model was designed based on the antecedent model developed by (Geebren et al., 2021) and (Kumar et al., 2021). The study adopts an antecedent model, where the researcher conducted a literature review on the work of (Geebren et al., 2021), which examined "Examining the role of Consumer Satisfaction in Mobile Ecosystems: Evidence from Mobile Banking Services" using a case study from a bank in Libya. To strengthen the model, the researcher also conducted another literature review, which examined (Kumar et al., 2021) research on "A Meta-analysis of Trust in Mobile Banking: The Moderating Role of Cultural Dimensions," utilizing the results from 63 quantitative studies on trust in Mobile Banking through meta-analysis techniques. This modified model identifies four key aspects influencing technology adoption: performance expectancy, effort expectancy, social influence, and facilitating conditions. The study conducted validity and reliability tests on 69 items across 17 constructs with 30 respondents. The results show that all research variables meet the minimum standards for Corrected Item-Total Correlation (CITC > 0.3) and Cronbach's Alpha (CA > 0.7). These findings confirm that the developed measurement tool is valid and reliable for evaluating behavioral outcomes in the context of mobile banking. The tool is now ready to be used in a full-scale study to analyze the relationship between Technology Acceptance and Use Factors, Quality Factors, and Risk Factors on Behavioral Outcomes through Trust mediation in Mobile Banking at Bank XYZ.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

[1] Bank XYZ. (2025). Annual Financial Report. Unpublished document.

[2] Friedenberg, L., & Kaplan, R. (Referenced in Indrawati, 2015). Measurement and Evaluation Concepts in Psychological Testing. *Cited in Indrawati, 2015:149*.

[3] Indraiwaiti. (2015). Methodology of Peineilitiain Kuiaintitaitif uintuik Mainaijeimein, Bisnis dain AIkuintainsi. Reifikai AIditaimai.

[4] Indrawati & Putri, D. A. (2018). Identifying factors influencing the continued use of e-payment systems using the modified UTAUT 2 model. In Proceedings of the 6th International Conference on Information and Communication Technology (ICoICT), 167–172.

[5] Indrawati, Ramantoko, G., Widarmanti, T., Aziz, I. A., & Khan, F. U. (2022). Online shopping motivations: Utilitarian, hedonic, and self-esteem factors. Spanish Journal of Marketing - ESIC, 26(2), 231–246. doi:10.1108/SJME-06-2021-0113

[6] Indrawati, Yones, P. C. P., & Muthaiyah, S. (2023). The effect of eWOM on TikTok on Somethinc product purchase intentions. Asia Pacific Management Review, 28(3), 174–184. doi:10.1016/j.apmrv.2022.07.007

[7] Kumar, P., Chauhan, S., Gupta, P., & Jaiswal, M. P. (2023). A meta-analysis of Trust in Mobile banking: The moderating role of cultural dimensions. International Journal of Bank Marketing, 41(6), 1207–1238. https://doi.org/10.1108/IJBM-02-2022

[8] Geebren, A., Jabbar, A., & Luo, M. (2021). Examining the role of consumer Satisfaction within Mobile eco-systems: Evidence from Mobile banking services. Computers in Human Behavior, 114, 106584. https://doi.org/10.1016/j.chb.2020.106584