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Developing a measurement tool for evaluation of factors influencing customer loyalty mobile banking a study at bank OCBC Indonesia: A pilot study

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Abstract

OCBC Bank of Indonesia utilizes mobile banking applications to facilitate customers in conducting financial transactions, as evidenced by the increasing number of downloads of this application. This study aims to explore the factors that influence customer loyalty to Bank OCBC's mobile banking application, focusing on eight main variables, namely: trust, convenience, social influence, application attributes, customer support, with m-banking customer experience on customer loyalty. A trial of 30 respondents was conducted to assess content validity, face validity, and reliability using SPSS. The results showed that all 42 questionnaire items in 8 constructs met the validity threshold (CITC> 0.3) and reliability (Cronbach's Alpha> 0.7). Therefore, this proposed measurement tool is suitable for further use in a full-scale study of customer loyalty in banking industry.

Keywords: Customer loyalty; Customer experience; Mobile banking; Pilot test; Banking content

1. Introduction

OCBC is recognized for its significant digital transformation efforts in recent years. According to OCBC's annual report, by December 2023, the number of active digital users grew by 29.4%, while transactions using QRIS also saw an exceptional increase of 496% (annual report OCBC, 2024). These figures indicate a significant rise in customer trust in the mobile banking services offered by F. This trust reflects that customers feel secure sharing personal data, maintaining privacy, and trusting that their transactions are protected (Bank OCBC, 2024).

However, despite the significant increase in active digital users, there has been a decline in the DAU (Daily Active Users) to MAU (Monthly Active Users) ratio at Bank OCBC throughout 2023, with Q1 at 18.98%, Q2 at 16.61%, Q3 at 13.91%, and Q4 at 16.00%. DAU reflects the level of user engagement with the app on a given day, while MAU indicates the number of users who engage with the app at least once a month. This decline suggests that fewer users are actively interacting with the mobile banking app on a monthly basis, indicating the app's struggle to retain users and its declining loyalty. In addition, the data on conversion rate, which shows the percentage of users successfully completing transactions, also experienced a decline. In 2023, the conversion rate was as follows: Q1 at 0.50%, Q2 at 0.16%, Q3 at 0.14%, and Q4 at 0.40% (Bank OCBC Indonesia, 2024), indicating that while the app is widely accessed, not all users successfully complete transactions. This decline suggests a gap between the number of app downloads and the success rate of users completing transactions. Therefore, it is essential for OCBC to delve deeper into factors such as trust, convenience, social influence, and app attributes that can enhance user experience and strengthen customer loyalty.

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2. Literature Review

This study adopts the Stimulus-Organism-Response (S-O-R) theory from (Shahid et al, 2022) to explain the relationship between external factors such as trust, convenience, social influence, and app attributes with the user experience of mobile banking applications, which ultimately affect customer loyalty and the intention for continued usage. Additionally, this study references the work of (Yu et al, 2024), which integrates the UTAUT and ISS models to analyze factors influencing mobile banking user loyalty. Therefore, the author uses a conceptual framework model that is a modification of both studies. Figure 1 shows the proposed the antecedents and consequences model of this research.

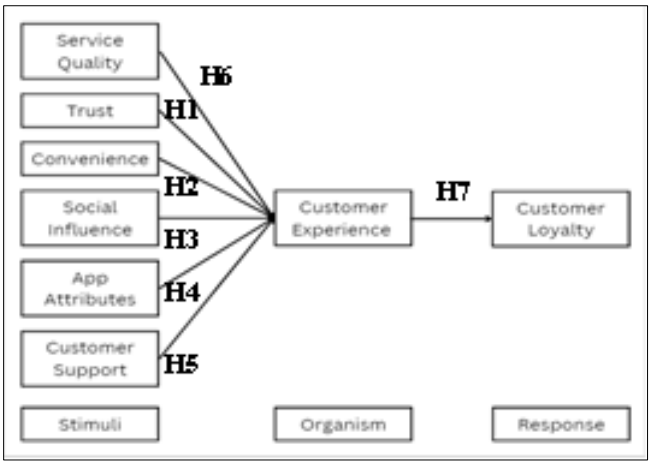

Figure 1 The model of research framework

This study uses a structured online questionnaire as the main research instrument. It evaluates the following variables:

- Independent Variables: variabel trust, convenience, social influence, app attributes, service quality and customer support
- Dependent Variable: customer loyalty
- Moderating Variable: customer experience

This study is in line with research (Indrawati et al, 2023) which analyzes the influence of electronic Word-of-Mouth (eWOM) through the TikHub platform on consumer purchase intentions (Indrawati et al, 2023), which shows that social influence has a significant influence on customer experience. This study adopts an independent social influence variable on customer experience which then has an impact on customer loyalty. This study also adopts the same method as (Indrawati et al, 2023), which uses a survey approach to understand real digital behavior, such as bold purchases and technology adoption, without laboratory experiments. To ensure the quality of the measuring instrument, this study applies content validity, display validity, readability testing, and trials with 30 respondents. Content validity is ensured through the adaptation of published items, display validity is obtained through expert feedback in the field of marketing and digital media, and readability tests the understanding of respondents.

3. Methodology

To develop a good measurement tool, validity and reliability tests are conducted in this research. The validity tests include content validity, face validity, readability, and a pilot test. Indrawati (2015) explains that content validity refers to the extent to which the items used to measure the research variables logically correspond to what is being measured, and this is carried out by adopting and modifying items related to previously published research. Face validity was assessed by obtaining suggestions and recommendations from experts in the field of marketing. Readability was tested through respondents' understanding of the questionnaire. Table 1 shows the items included in the questionnaire.

Table 1 Items on Questionnaire

Item	**No. Item**	**Reference Item**
Trust		(S. Shahid et al., 2022)
The M-banking app is trustworthy.	TR1	
The M-banking app is secure.	TR2	
The M-banking app is dependable.	TR3	
I felt safe to provide my personal and private data to the M-banking app.	TR4	
Convenience		
I find it easy to complete the transaction over the M-banking app.	CN1	
I am able to avail service quickly over the M-banking app.	CN2	
It takes little effort to complete the transactions over the M-banking app.	CN3	
I can avail mobile banking services using the M-banking app anytime I want.	CN4	
I can avail mobile banking services using the M-banking app wherever I am.	CN5	
The banking services are always accessible using the M-banking app.	CN6	
Social Influence		
People influence me use the M-banking app.	SI1	
My family and friends value the use of the M-banking app.	SI2	
The use of the M-banking app gives me professional status.	SI3	
M-banking App Attributes		
The overall look and feel of the mbanking app is visually appealing.	AA1	
The screen design (i.e., colours, boxes, menus, etc.) of the M-banking app is attractive.	AA2	
The M-banking app helps me to be more effective in doing the task.	AA3	
It takes fewer steps to accomplish the tasks I wanted to do on the M-banking app.	AA4	
The payment page interface of the Mbanking app is easy to navigate.	AA5	
The M-banking app has a navigation bar, which tracks the progress of my order.	AA6	
Customer Support		
It will be useful to ask for advice while searching for the information on the M-banking app.	CL1	
It would be useful if the M-banking app facilitates instant (live) communication.	CL2	
It would be useful if the M-banking app gives me the opportunity to talk back.	CL3	
If contacted by a sales representative, how likely would you be to agree to a sales meeting.	CL4	
Customer Experience		
I found the M-banking app useful.	CE1	
I like the idea of using the M-banking app.	CE2	
Using the M-banking app is a pleasant experience.	CE3	
I feel comfortable when I interact with the M-banking app.	CE4	
the M-banking app meets my needs and covers my expectations	CE5	
In my opinion, this bank really cares about keeping me as a customer while using the M-banking app.	CE6	

Customer Loyalty		
I will consider the M-banking app as my first choice for m-banking services.	CL1	
I will consider the M-banking app services even if other apps provide same quality of services.	CL2	
I will first consider the M-banking app even if its services are slightly costlier than others.	CL3	
If I have a good experience with an m-banking app through my smartphone, I will recommend it to friends and relatives	CL4	(Saprikis et al.,2022)
I intend to recommend to friends and relatives to use an m-banking app through their smartphone	CL5	
I think that I would recommend to friends and relatives to use an m-banking app through their smartphone	CL6	
I would continue to use the M-banking app for my banking needs.	CL7	(S. Shahid et al., 2022)
I would continue to use the M-banking app for handling my banking transactions in the future.	CL8	
I would continue to see myself using the M-banking app for handling my banking needs.	CL9	
Service Quality		
MB provides me with real-time services.	SQ1	(Yu et al., 2024)
MB provides me with quick response-time services.	SQ2	
MB provides me with professional services.	SQ3	
MB provides me with personalized services.	SQ4	

4. Results

The pilot test was conducted on 30 respondents through an online questionnaire using Google Forms. All respondents are representatives of individuals residing in Indonesia. This study employs a quantitative approach to empirically test the factors that influence Customer Loyalty in Mobile Banking at Bank OCBC Indonesia. The data collected was analyzed using SPSS Software. According to Friedenberg and Kaplan in Indrawati (2015:149) [2], items are considered valid if the "Corrected Item – Total Correlation" (CITC) is greater than 0.3. All items in the seven constructs in this research are considered valid. Additionally, the reliability test is considered satisfactory if the Cronbach-Alpha (CA) score is greater than 0.7. All eight constructs in this research meet the reliability test criteria. The results of the pilot test are presented in the following Table 2.

Table 2 Pilot Test Result

Variable	Item Code	CITC	Cronbach's Alpha (CA)
Service Quality	SQ1	0.93	0.94
	SQ2	0.93	
	SQ3	0.94	
	SQ4	0.89	
Trust	T1	0.91	0.91
	T2	0.87	
	T3	0.91	
	T4	0.88	
Convenience	C1	0.91	0.96
	C2	0.89	
	C3	0.95	

	C4	0.95	
	C5	0.94	
	C6	0.89	
Social Influence	SI1	0.85	0.85
	SI2	0.90	
	SI3	0.90	
App Attributes	AIAI1	0.88	0.92
	AIAI2	0.78	
	AIAI3	0.90	
	AIAI4	0.79	
	AIAI5	0.82	
	AIAI6	0.87	
Customer Support	CS1	0.91	0.93
	CS2	0.93	
	CS3	0.91	
	CS4	0.91	
Customer Experience	CEI1	0.88	0.93
	CEI2	0.88	
	CEI3	0.84	
	CEI4	0.88	
	CEI5	0.88	
	CEI6	0.84	
Customer Loyalty	CL1	0.89	0.94
	CL2	0.86	
	CL3	0.75	
	CL4	0.85	
	CL5	0.81	
	CL6	0.77	
	CL7	0.85	
	CL8	0.81	
	CL9	0.84	

5. Conclusion

This pilot study successfully developed and tested a measurement tool to evaluate the factors influencing customer loyalty among mobile banking users at Bank OCBC Indonesia. In this model, Stimulus (S) refers to external factors such as trust, convenience, social influence, and app attributes, which positively affect the internal condition of the user (organism), i.e., the user experience reflected from interactions with the mobile banking application. This user experience, in turn, has a positive and significant impact on the response (R), which is manifested in the form of customer loyalty and continuance usage intention. This study also examines the factors influencing mobile banking loyalty by integrating the IS Success and UTAUT (Unified Theory of Acceptance and Use of Technology) models. This expanded model identifies four key aspects that influence technology adoption: performance expectancy, effort

expectancy, social influence, and facilitating conditions. The study utilized validity and reliability tests on 42 items across 8 constructs with 30 respondents. The results show that all research variables meet the minimum standards of 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 content engagement in the context of mobile banking. This tool is now ready to be applied in a full-scale study to analyze the factors that can enhance customer loyalty at Bank OCBC Indonesia when using their mobile banking services.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

[1] Bank OCBC Indonesia. (2024). *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] Indrawati. (2015). Metode Penelitian Manajemen dan Bisnis Konvergensi Teknologi. Refika Aditama

[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. IEEE. doi:10.1109/ICoICT.2018.8528748

[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] Saprikis, V., Avlogiaris, G., & Katarachia, A. (2022). A comparative study of users versus non-users' behavioral intention towards M-banking apps' adoption. Information, 13(1), 30. https://doi.org/10.3390/info13010030

[8] Shahid, S., & Islam, J. U. (2022). Convenience and mobile banking experience. Journal of Retailing and Consumer Services, 65, 102870.

[9] Yu, J., Albashrawi, M., & Tarhini, A. (2024). The determinants of the loyalty of mobile banking: The integrated model of IS success model and UTAUT. Pacific Asia Journal of the Association for Information Systems, XX(X), XX-XX. https://doi.org/10.17705/1pais.XXXXX.