The Analysis of Consumers' Behavioral Intention in Using Mobile Banking Through the UTAUT Model Approach: A Case Study on New Livin by Mandiri Application

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Abstract. Banking business has undergone significant changes in this era of digital transformation. This situation encourages the banking industry to create more flexible procedures, organizational structures, and business models as a means to embrace the competition. This research aims to understand the role of UTAUT model, which consists of performance expectancy, effort expectancy, and social influence on the behavioral intention of Bank Mandiri's consumers in using mobile banking. The data were collected through a survey-based empirical study on 200 users of New Livin by Mandiri application in West Java using a convenience sampling method. This research used descriptive analysis with path analysis and Smart PLS tools. The result indicated that the performance expectancy, effort expectancy, and social influence variables had positive effects on behavioral intention, but performance expectancy and social influence were the ones giving the most significant effects. Theoretical findings also proved that performance expectancy was a very significant factor in influencing one's intention to use mobile banking.

Keywords: mobile banking · behavioral intention · the unified theory of acceptance and usage technology (UTAUT)

1 Introduction

The development of the banking industry has brought the world closer to the digitalization era. The growth potential, supported by increasingly sophisticated smartphone technology, has encouraged the banking industry to develop a useful and innovative digital application to support customers' transactions using mobile banking [1]. The digital transformation process not only provides an opportunity to completely revamp the current system to ensure a more efficient and effective working process, but also provides another opportunity for the consumers to experience an improvement in the transaction process [2]. Digital transformation is more than just providing online services and mobile banking. The financial banking industry needs to innovate by combining digital technology with customer interaction. Those new innovations must be able to facilitate

the customers to access banking services more conveniently, one of them is the digital banking system which describes the virtual process supporting its whole services. This study used the UTAUT model approach to discuss consumer behavior in using mobile banking related to their acceptance of financial technology, with the New Livin by Mandiri application as the object of the study.

UTAUT is one of the models that can be used to study about adoption and acceptance of technology. UTAUT is a technology acceptance model developed by Venkateshetal. This model is a combination of eight technology acceptance models, namely: Theory of Reasoned Action (TRA), Innovation Diffusion Theory (IDT), Technology Acceptance Model (TAM), Social Cognitive Theory (SCT), Model of PC Utilization (MPCU), Motivational Model (MM), Combined TAM and TPB (C-TAM-TPB), and Theory of Planned Behavior (TPB) [3]. This study specifically researched the basic theory of technology acceptance. From various theories that have been studied, it was found that some factors have similarities in certain aspects, hence resulting in a unified model. The UTAUT model was chosen for this research because this model can significantly explain the acceptance of technology. UTAUT model's variables come from the comparison of theories that are commonly used to measure customer satisfaction with different perspectives. In addition, the technology which becomes the research object to produce the UTAUT model is usage-oriented, and it is also a complex information technology. The advantage of the UTAUT model is it provides a tool for managers to evaluate the success probability of new technology orientation, as well as helps them to understand the motor of technology acceptance. It will lead them to become more proactive in designing intervention (including training, socialization, etc.) which is targeted to users who lack the interest to adopt and use a new system [3]. Furthermore, UTAUT is a flexible instrument that can be easily modified according to the context of the research. Mobile banking is a financial activity service that is accessed by cellular phones such as mobile phones, radio frequency, Personal Digital Assistant, and Near-Field Communication (NFC). Thus, it is necessary to understand the factors which influence intention/behavioral intention to adopt m-banking. This is because the success of a technology innovation depends on the consumers' acceptance level of that particular technology. This research used two models, namely UTAUT [3] and trust theory [4] in the mobile banking context. It was considered that these two constructs are still highly relevant to the condition in Indonesia, in which trust still becomes a factor of consideration and obstacle in cellular banking technology adoption. Mobile banking has plenty of advantages, but those advantages cannot be maximized if consumers don't use this technology.

There are many studies related to UTAUT model, some of them are: (1) a study conducted by [5] on Blibli.com app which explained that performance expectancy had a significant effect on trust; social influence had a significant effect on behavioral intention; behavioral intention had a significant effect on use; but effort expectancy did not have any effect. (2) A study conducted by [6] on the e-commerce site Bhinneka.com revealed that performance expectancy, facilitating condition, perceived trust, and perceived risk had significant effects on behavioral intention. (3) A study conducted by [7] on the eHealth application showed that performance expectancy did not have any effect on use. The limitation of those past studies is that they were too focused on e-commerce applications as the object of the research.

This research aims to identify and analyze factors that influence customers' behavioral intention to use the mobile banking application New Livin by Mandiri in West Java using the UTAUT model approach. Several past studies have discussed bank customers' behavioral intentions when using digital applications, but only a few focused on Livin by Mandiri mobile banking application as the focus of the study. This research investigated significant factors of the UTAUT model which influence the customers to use mobile banking applications, as well as explored which factors have the most positive effect on the customers' behavioral intention to use mobile banking applications.

2   Methods

This research was conducted in seven areas around West Java. The data were collected using a purposive sampling technique. The population of this research was the customers of Bank Mandiri in West Java. The questionnaires were distributed using the online survey method to 200 customers of Bank Mandiri in seven areas around West Java, who were the samples of this research. The data were collected during the course of one month, from November to December 2021. To measure the validity and reliability of the instrument, a survey test was carried out on 34 respondents before the questionnaire was distributed to the rest of the respondents.

The data processing technique used in this study was SmartPLS analysis by conducting a two-step approach, namely the measurement model and structural model. The measurement model was conducted to test the reliability and validity of the outer model. Meanwhile, the structural model was intended to test the path coefficient, and the t-test to prove the hypothesis. The coefficient of determination was also used to test the influence of each variable.

3   Results and Discussion

After the questionnaire had been distributed, the next step was data processing by using SmartPLS. The first step was to conduct an analysis of the indicators which were considered invalid. Nine indicators were processed during the initial calculation, and the results are presented in Fig. 1.

From the analysis and data processing result in Fig. 1, it can be concluded that there is one indicator that has a loading factor of <0.60%. Consequently, that indicator is invalid to measure the construct and must be deleted, which means there are 8 indicators left. After the invalid indicator was eliminated, the other 8 indicators were measured once again with the following result:

Figure 2 shows that indicator SI-1 has a loading factor of 0.591. Since it is less than 0.60, the indicator is invalid and cannot be used to measure the construct. Therefore, this indicator must be removed. After the invalid indicator was eliminated, Fig. 2 shows that the remaining indicators have a loading factor >0.60% which means those indicators are valid to measure the constructs. The next step is to evaluate the outer model. The criteria used for this purpose are Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE) (Table 1).
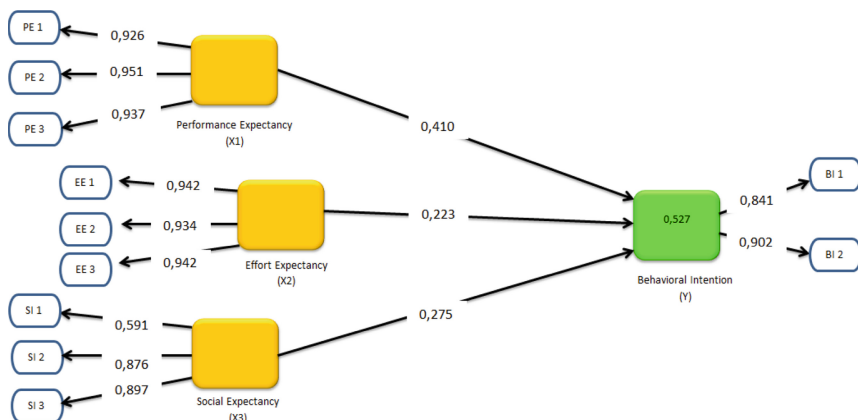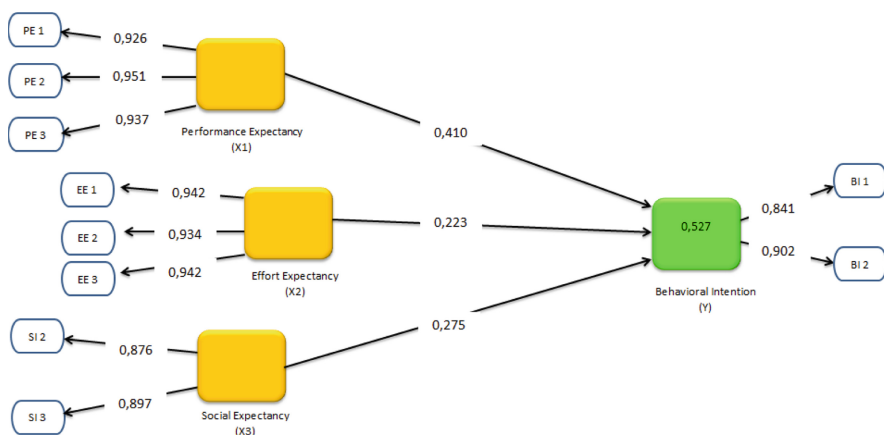
Fig. 1. Initial Measurement of SmartPLS

Fig. 2. SmartPLS Measurement

Table 1. Reliability and Validity Tests

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
BI	0.689	0.720	0.864	0.760
EE	0.933	0.934	0.957	0.882
PE	0.932	0.933	0.956	0.880
SI	0.728	0.731	0.880	0.786

Table 2 shows that Cronbach's Alpha on each construct >0.70. Composite Reliability of each construct >0.70 and AVE of each construct >0.50. It means all the constructs

Table 2. Outer Loadings

	BI	EE	PE	SI
BI 1	0.837			
BI 2	0.906			
EE 1		0.942		
EE 2		0.934		
EE 3		0.942		
PE 1			0.926	
PE 2			0.951	
PE 3			0.937	
SI 2				0.876
SI 3				0.897

are reliable. The relationship between the constructs is explained in the path coefficient Table 3.

A T-test is intended to test whether the independent variable partially has significant effects on the dependent variable. The basis of the decision-making is as follows:

- **If the probability > 0.05 or -t-table < t-count < t-table, H0 is rejected.**
- **If the probability < 0.05 or t-count < -t-table or t-count > t-table, H0 is rejected.**
- **T-table for alpha = 0.05 is 1.96, and t-table for alpha = 0.10 is 1.65)**

Hypothesis

H1: Performance expectancy (X1) has positive and significant effects on behavioral intention

H2: Effort expectancy (X2) has positive and significant effects on behavioral intention

H3: Social influence (X3) has positive and significant effects on behavioral intention

Table 3. Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
EE → BI	0.222	0.229	0.147	1.512	0.131
PE → BI	0.415	0.402	0.120	3.469	0.001
SI → BI	0.192	0.208	0.098	1.961	0.050

Result

Variable X1 **has positive and significant effects** on Y, because t $= 3.469 < 1.96$
Variable X2 **has positive and significant effects** terhadap Y, because t $= 1.512 < 1.96$
Variable X3 **has positive and significant effects** terhadap Y, because t $= 1.961 < 1.96$

Thus, the structural equation is

$$Y = 0.415 * X1 + 0.222 * X2 + 0.192 * X3 + e. \tag{1}$$

The coefficient determinant (R square adjusted) was used to show the degree of influence of each variable. Based on the data on Table 4, T=the value of R square adjusted from the equation Y $= 0.111*X1 + 0.060*X2 + 0.110*X3 + 0.630*X4 + e.$ 0.501 shows that 50.1% of BI variants can be explained by the changes in variables PE, EE, and SI. Meanwhile, the remaining 49.9% are caused by other factors outside the model.

The result of the test of significance showed that the three variables examined in this research (performance expectancy, effort expectancy, and social influence) had positive effects on behavioral intention. Performance expectancy is one of the variables that showed the most positive and significant effects on behavioral intention. This result is similar to studies conducted by [3, 5, 8]. The higher the level of user trust that the system will provide advantages for work performance, the higher the level of user trust in Livin by Mandiri mobile banking app. Thus, the management must be able to provide and guarantee technology capability which helps the customers to perform banking transactions without the limitation of physical presence, distance, and time.

The effort expectancy variable in this research had positive effects on behavioral intention, but it was not significant. This result is similar to the research conducted by [8] in which, the easiness to learn, operate, and interact, and the flexibility of the system are factors that must be prioritized by the banking industry. The m-banking system must be created as convenient as possible so that the customers want to keep using the application. This result is different from the m-banking study conducted by [9].

The last variable in this research is social influence which had positive and significant effects on behavioral intention. This result is similar with the studies conducted by [3, 5] which explained that external environments, such as friends, employers, other people, and bank marketing officers contributed to influencing the customers' perception and behavior in using mobile banking app.

Table 4. R Square Test Result

	R Square	R Square Adjusted
BI	0.511	0.501
EE	0.636	0.634
PE	0.548	0.545
SI	0.472	0.469

4   Conclusion

The behavioral intention of Bank Mandiri's customers to use the bank's mobile banking app, New Livin by Mandiri, was influenced by several factors. The results revealed that all three UTAUT model factors examined in this research had positive effects on behavioral intention, but the most significant factor is performance expectancy and social influence. Meanwhile, effort expectancy had a less significant effect on behavioral intention. These findings showed that the users of New Livin by Mandiri application consider performance expectancy represented by the benefits of using New Livin which make banking more effective and efficient. Effort expectancy is represented by the ease of use of the features, and social influence is represented by external factors that influence the customers' intention to use the application.

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