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Determinant Factors of SeaBank Application Success for Digital Payments Using Extended Technology Acceptance Model

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Abstract — This study explores the crucial determinants affecting the successful adoption of SeaBank's digital payment application through Extended Technology Acceptance Model (ETAM), incorporating trust as an additional external variable. As one of Indonesia's fastest-growing digital banks, SeaBank provides distinctive features but improve user convenience and support the transition to cashless transaction. Using a quantitative methodology, were gathered from 100 active SeaBank users through an online survey. The relationship between trust, perceived ease of use, perceived usefulness, attitude, and intention to accept e-payment were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 4. The analysis substantiates that trust considerably mitigates user concerns regarding data privacy and security. Additionally, both perceived ease of use and perceived usefulness positively shape user attitudes, which subsequently drive the intention to accept e-payment services. This study validates the relevance and suitability of the ETAM framework in the context of digital banking and underscores the necessity of building user trust, ensuring ease of use, and demonstrating clear benefits in platforms such as SeaBank.

Keywords – SeaBank, Extended Technology Acceptance Model, Digital Payments, Trust, PLS-SEM

I. INTRODUCTION

Over the past two decades, information technology has undergone significant transformation. The emergence of digital banks and payment applications has enabled comprehensive banking activities—from account opening to fund transfers—to be conducted anywhere and anytime using only smartphones, eliminating the need for physical visits to conventional bank offices [1][2]. This shift aligns with the Indonesian government's initiatives to enhance public access to financial services and promote familiarity with cashless transactions.

SeaBank has emerged as one of Indonesia's rapidly growing digital payment applications. Launched on February 10, 2021, SeaBank operates officially under the authorization of the Financial Services Authority (OJK), with supervision from Bank Indonesia and the Deposit Insurance Corporation (LPS). The platform offers several distinctive features including fee-free account registration, daily savings interest, complimentary interbank transactions (up to 100 monthly transactions), online utility bill payments, and digital wallet top-ups for platforms like DANA and ShopeePay, significantly enhancing user convenience and experience [3]. Furthermore, the integration of Quick Response Code Indonesian Standard (QRIS) within the SeaBank application enables instant transactions through QR code scanning without requiring users to switch between different applications.

Research into successful adoption of digital payment applications, such as SeaBank, has often been grounded in the Technology Acceptance Model (TAM) framework introduction by Davis (1989). TAM serves as a research model explaining that perceived usefulness and perceived ease of use are key variables affecting individuals' attitudes and intentions toward technology acceptance, with attitude and intention to accept e-payment being crucial factors in final technology adoption decisions [4]. However, in digital payment technology specifically, trust can serve as a significant external supporting variable [5]. In this context, trust refers to user-perceived security and privacy assurance of their data within the application, which then shapes its perceived usefulness and perceived ease of use. As a digital bank without any physical branch offices, SeaBank operates and serves

its users exclusively online. Without face-to-face interaction or the assurance provided by physical branches, users must place their complete trust in the application's service credibility. For a digital bank like SeaBank, which relies solely on a digital platform, trust is a crucial factor. The system must guarantee the protection of user data against any improper use.

The Extended Technology Acceptance Model (ETAM) is advancement of the original TAM, integrating additional external variables to deliver a more holistic explanation of technology adoption [6]. By integrating trust variables, ETAM offers deeper insights into user behavior dynamics in digital payment applications [7]. Analyzing the SeaBank application using the trust variable in the ETAM framework is highly relevant. With ETAM, we can analyze how is trust influences users' perception of the application's usefulness and ease of use. Trust not only enhances users' perceived benefits but also alleviates concerns regarding data privacy and security [8]. As a result, this variable is a fundamental driver influencing the successful adoption of digital payment applications like SeaBank. However, a research gap remains regarding how trust, perceived usefulness, and perceived ease of use directly relate to intention to accept e-payment, particularly in SeaBank's context. Several studies recommend further investigation using SeaBank user data to more thoroughly examine the ETAM framework.

For digital payment services like SeaBank, where platform quality directly dictates user satisfaction, the Extended Technology Acceptance Model (ETAM) provides an ideal analytical tool. It is uniquely equipped to explore the role of trust, making it a fitting choice for this research. Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS 4 has emerged as the predominant analytical method for ETAM due to its capability to handle small sample sizes and complex latent variables [9]. This study employs PLS-SEM due to its dual advantages in addressing our research context. The method accommodates non-normal data distributions characteristic of behavioral research, while simultaneously enabling the analysis of complex structural relationships. These capabilities examination of how trust, perceived usefulness, and perceived ease of use collectively influence adoption intentions in SeaBank's digital environment.

II. RESEARCH METHOD

A. Research Stages

This study applies a quantitative method, involving the collection of data for measurement and statistical analysis. The research utilizes the Extended Technology Acceptance Model, a framework commonly applied to understand factors determining technology acceptance. Accordingly, the Extended TAM model is used to examine the extent to which the SeaBank application is successfully adopted by users for digital payments. The research stages are as follows:

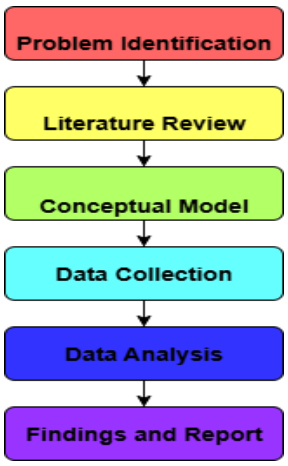

Fig.1. Research Stage

The research stages are outlined as follows:

a.) Problem Identification
Examining the determinants of SeaBank application success for digital payments using the Extended Technology Acceptance Model (ETAM) framework with trust as an external variable.

b.) Literature Review
Collecting and analyzing previous studies related to digital payments, Technology Acceptance Model (TAM), Extended Technology Acceptance Model (ETAM), and research discussing trust variables in digital payment contexts.

c.) Conceptual Model
Developing a conceptual design where trust, perceived usefulness, and perceived ease of use influence attitude and intention to accept e-payment in adopting SeaBank for digital payment technology.

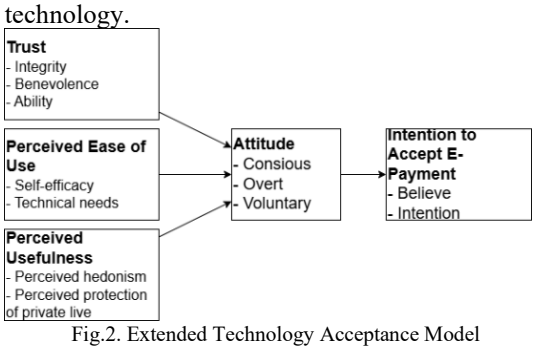

Fig.2. Extended Technology Acceptance Model Conceptual Design

The variables and their associated hypothesis (H) for the Extended Technology Acceptance Model (ETAM) used in this investigation are delineated below:

1.) Trust
Encompasses aspects of system integrity,

benevolence, and capability in safeguarding user data security and privacy.

- H1: Trust exerts a positive influence on user attitude.

2.) Perceived Ease of Use
Refers to users' perceived level of ease in application usage, including confidence in operating the application.

- H2: Perceived Ease of Use demonstrates a positive effect on attitude.

3.) Perceived Usefulness
Involves users' perception of application benefits, encompassing enjoyment of use and personal privacy security.

- H3: Perceived Usefulness positively influences attitude.

4.) Attitude
Comprises users' disposition toward application usage, characterized by conscious, transparent, and voluntary willingness to sustain application engagement.

- H4: Attitude positively affects intention to accept e-payment.

d.) Data Collection
This study collected its primary data from a questionnaire administered to active users of the SeaBank application. The data collection was executed through an online survey disseminated via Google Forms. The survey instrument comprised statements key construct – including trust, perceived usefulness, perceived ease of use, attitude, and intention to accept e-payment – using a 5-point Likert scale (1: strongly disagree to 5: strongly agree.)

- Population
  The study population comprised active SeaBank application users in Banyumas Regency. As SeaBank serves diverse user segments including students, professionals, and homemakers, the population represented various age groups and genders.
- Sample
  Data were collected from a sample of 100 active users, all of whom completed the survey in its entirely. The research employed a total sampling method, meaning every eligible respondent who fit the criteria was included. For data processing and analysis, the study utilized SmartPLS 4 software.

e.) Data Analysis
The questionnaire data were analyzed within the Extended Technology Acceptance Model (ETAM) framework using SMARTPLS 4 software

f.) Research Report
Following data processing and analysis, a comprehensive research report was compiled. The study outcomes were evaluated, and final conclusions were drawn based on the empirical findings.

B. Research Instrument

Utilizing the Extended Technology Acceptance Model (ETAM) framework, this research collected data from SeaBank users in Banyumas Regency through Google Forms questionnaire. The instrument measured five core constructs with specific indicators developed for each variable. The relationship between these constructs were assessed using Partial Least Squares Structural Equation Modeling (PLS-SEM).

Table 1. Research Questionnaire

Latent Variable (Factor)	Measured Variable (Indicator)	Likert Scale				
		1	2	3	4	5
Trust (Integrity, Benevolence, Ability)	Integrity1 : I trust that the SeaBank app is always honest in every transaction I make.					
	Integrity2 : I trust that the SeaBank app consistently maintains the security of my data information.					
	Integrity3 : I am confident that the SeaBank app is fully responsible for the services they provide to me.					
	Benevolence1 : I believe that the SeaBank app cares about my interests and needs as a user.					
	Benevolence2 : I feel that the SeaBank app always strives to provide the best service for my satisfaction.					
	Ability1 : I feel that the SeaBank app can handle technical issues quickly and effectively.					
	Ability2 : I am confident that the SeaBank app is capable of developing features that suit the needs of users like me.					
Perceived Ease of Use (Self-Efficacy, Technical Need)	Self Efficacy1 : I believe I am capable of using the SeaBank app easily without help from others.					
	Self Efficacy2 : I feel confident enough in operating all the features available in the SeaBank app.					
	Technical Need1 : I believe the SeaBank app meets my technical needs for making fast digital payments.					
	Technical Need2 : I feel the technical features in the SeaBank app are designed to make my transactions easier.					
Perceived Usefulness (Perceived Hedonism, Perceived of Private Life)	Perceived Hedonism1 : I believe using SeaBank makes my transaction experience more enjoyable.					
	Perceived Hedonism2 : I feel the SeaBank app provides conveniences that make me more comfortable when transacting.					
	Protection of Private Life : I believe SeaBank maintains the confidentiality of my personal data well.					
	Protection of Private Life2 : I feel safe using SeaBank because my privacy is always protected.					
Attitude (Conscious, Overt, Voluntary)	Conscious1 : I am aware that using the SeaBank app can make my digital payment activities easier.					
	Conscious2 : I use the SeaBank app with full awareness, not just to follow trends.					
	Overt1 : I demonstrate a positive attitude when using the SeaBank app in my daily transactions.					
	Overt2 : I choose SeaBank over other apps when making digital payments.					
	Voluntary1 : I use the SeaBank app of my own volition, not due to pressure from others.					
	Voluntary2 : I feel free in choosing the SeaBank app as my digital payment tool.					
Intention to Accept E-Payment (Believe, Intention)	Believe1 : I believe that the SeaBank app is a reliable digital payment platform.					
	Believe2 : I believe that the SeaBank app is safer compared to conventional payment methods.					
	Intention1 : I intend to continue using the SeaBank app for financial transactions in the future.					
	Intention2 : I will recommend the SeaBank app to people around me.					

III. RESULT

Respondent data is a collection of information obtained from the individuals or groups who are the subjects of the research or survey. This study surveyed active SeaBank users in Banyumas Regency using an online questionnaire. A total of 100 complete responses were obtained, with no missing data, and all were filled out according to the instructions provided in the research questionnaire.

A. Validity Test

A validity test is an analytical procedure aimed at assessing the extent to which a data collection instrument can measure the intended construct accurately and precisely. In essence, validity testing guarantees that every question in a survey is appropriately and strongly connected to the core concept it is meant to assess. The establishment of validity is a critical prerequisite, as it confers the necessary accuracy and scientific trustworthiness upon the data to justify its use in advanced multivariate techniques such a Partial Least Squares Structural Equation Modeling (PLS-SEM).

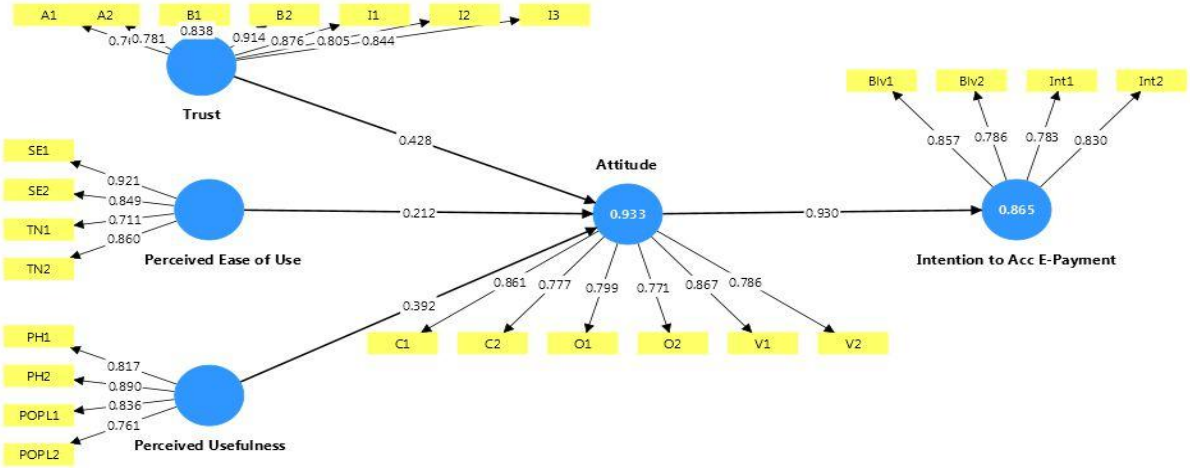

Fig.3. Outer Model PLS-SEM TAM

The result presented in Figure 3 indicate that all outer loadings are above 0.70, which validates the indicators. This provides evidence that the indicators for each construct are highly correlated and consistently measure the same underlying concept.

Tabel 2. Average Variance Extracted (AVE) value

	AVE	Decision
Trust	0.694	Valid
Perceived Ease of Use	0.704	Valid
Perceived Usefulness	0.685	Valid
Attitude	0.658	Valid
Intention to Accept E-Payment	0.664	Valid

As presented in Table 2 above, the analysis reveals that the Average Variance Extracted by latent variable is consistently above 0.50. This signifies that each construct is able to explain at least 50% of the variance of its indicators, thereby proving adequate convergent validity.

B. Reliability Test

A reliability test is a testing process to validate the performance of a data collection instrument, such as a questionnaire, can produce consistent and stable data when used repeatedly under the same conditions. This test ensures that all indicators within a construct have adequate internal consistency, making the measurement results free from random errors and trustworthy. In practice, reliability is typically assessed using Cronbach's Alpha, Composite Reliability (rho_a), and rho_c, where a value of ≥ 0.70 is deemed to confirm that the tool demonstrates acceptable reliability for academic research.

Table 3. Cronbach's Alpha dan Composite Reliability

	Cronbach's Alpha	Composite Reliability (rho_A)	Composite Reliability (rho_C)
Trust	0.926	0.928	0.941
Perceived Ease of Use	0.860	0.892	0.904
Perceived Usefulness	0.846	0.853	0.896
Attitude	0.895	0.897	0.920
Intention to Accept E-Payment	0.831	0.837	0.887

All construct demonstrated string reliability, with Cronbach's Alpha, Composite Reliability (rho_A), and Composite Reliability (rho_C) values all of which

exceeded 0.70 benchmark, thereby establishing the robustness of the measurement instrument.

C. Hypothesis Test

Hypothesis testing is a statistical analysis process used to evaluate whether sample data provides sufficient evidence to accept or reject a conjecture (hypothesis). The statistical significance was defined as a p-value ≤ 0.50 concomitant with a t-statistic ≥ 1.96, corresponding to a 5% significance level.

Table 4. Hypothesis Testing Results with TAM

Ho	T-Statistic	P-Value	Result
H1	4.523	0.000	Accepted
H2	3.612	0.000	Accepted
H3	4.156	0.000	Accepted
H4	65.191	0.000	Accepted

The results demonstrate that all paths in the research model show a p-value of 0.000 (below the 0.05 threshold) and t-statistics substantially eclipsing the critical value of 1.96. The analysis confirms the following significant positive relationships:

- Trust exerts positive and significant effect on Attitude.
- Perceived Ease of Use exerts positive and significant effect on Attitude.
- Perceived Usefulness exerts positive and significant effect on Attitude.
- Attitude exerts positive and significant effect on Intention to Accept E-Payment.

Therefore, all research hypotheses are supported.

IV. DISCUSSION

This study employed the Extended Technology Acceptance Model to analyze the determining factors for the success of the SeaBank application as a digital payment platform. The PLS-SEM analysis performed in SmartPLS 4 yielded a valid measurement model. This is evidenced by outer loading values all above 0.70 and Average Variance Extracted (AVE) values all above the recommended 0.50 benchmark. Meanwhile, the reliability test using Cronbach's Alpha and Composite Reliability (rho_A and rho_C) showed values above 0.70, indicating that the instrument model is reliable.

All five tested hypotheses proved to be statistically significant. The hypothesis test results with criteria of p-value ≤ 0.05 and t-statistics ≥ 1.96 demonstrated considerable relationships between variables. The trust variable (comprising integrity, benevolence, and ability), the perceived ease of use variable (with self-efficacy and technical needs), and the perceived usefulness variable (with perceived hedonism and perceived protection of private life) all positively influenced the attitude variable. The trust variable plays a crucial role in alleviating users' apprehensions regarding their personal data protection and safety. Meanwhile, the perceived ease of use and perceived usefulness variables serve as driving factors for users' attitudes and intentions to consistently use the digital payment application. The attitude variable itself is a crucial element directly affecting the intention to accept e-payment variable [10]. The role of the attitude variable is as a mediator between other variables and the intention to accept e-payment variable. This study confirms that in developing digital payment applications, these variables require special attention and consideration.

In this study, the use of PLS-SEM with the SmartPLS 4 application proved appropriate as this method can test reliability and validity in complex relationships. The PLS-SEM method helped this study obtain results consistent with TAM theory.

Despite the value added by this work, the research design is circumscribed by specific delimitations that ought to be rectified in forthcoming studies. The geographical coverage of the sample was limited to active SeaBank users in Banyumas Regency. This limits the generalization of the research findings to a more diverse national user population. Differences in age, education, occupation, and technology experience in other regions may affect technology acceptance, particularly digital payments, in different ways [10]. Therefore, these research findings need to be further developed by expanding the sample coverage to be more diverse.

V. CONCLUSSION

A. Research Instrument Proven Reliable and valid

Empirical test confirmed the validity and reliability of the research instrument, a 5-point Likert scale questionnaire designed to assess trust, perceived ease of use, perceived usefulness, attitude, and intention to accept e-payment. Empirical support for the instrument's reliability and validity was established. Analyses confirmed strong internal consistency, while convergent validity was demonstrated through all indicator outer loadings being greater than 0.70, and all Average Variance Extracted values lying above the 0.50 criterion. Furthermore, reliability tests using Cronbach's Alpha and Composite Reliability yielded values above 0.70.

B. Hypothesis Text Result

The hypothesis testing met the established criteria (p-value ≤ 0.05 and t-statistic ≥ 1.96). The variables of trust, perceived ease of use, and perceived usefulness—along with their respective measurement indicators—were found to exert a favorable impact on attitude variable. Subsequently, the attitude variable and its indicators positively influenced the intention to accept e-payment variable. The findings confirm that the Extended Technology Acceptance Model (ETAM)

forms a solid basis for analysis for unraveling the significant variables driving user acceptance of SeaBank's digital payment service

C. Implications of Findings

This study emphasizes the critical importance of the external variable trust as a key factor in alleviating user concerns regarding data security and privacy. The variables perceived ease of use and perceived usefulness also serve as significant drivers of user attitude and intention to use digital payment applications like SeaBank. Consequently, the development of digital payment applications should prioritize enhancing user trust, ease of use, and the perceived benefits of the application.

D. The Overall Model Supports Most of Extended Technology Acceptance Model Concepts

This study emphasizes the critical importance of the external variable trust as a key factor in alleviating user concerns regarding data security and privacy. The variables perceived ease of use and perceived usefulness also serve as significant drivers of user attitude and intention to use digital payment applications like SeaBank. Consequently, the development of digital payment applications should prioritize enhancing user trust, ease of use, and the perceived benefits of the application.

The Extended Technology Acceptance Model (ETAM) used in this study was validated. The application of the PLS-SEM method effectively facilitated the analysis of relationships between latent variables, thereby providing robust support for the ETAM theory.

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REFERENCES

[1] Jadhav, R., & Bhagwat, D. (2024). Digital Revolution in the Indian Banking Sector. International Journal of Advanced Research in Science, Communication and Technology (IJARSCT), 4(2), 227-234.

[2] Kim, D., Hong, S., Je, Y., & Ryu, M. H. (2025). Drivers of Mobile Banking Super-App Adoption: Across Different Service Integration Levels. Journal of Theoretical and Applied Electronic Commerce Research, 20(2), 143.

[3] Ramadhan, H. D., & Efrilianda, D. A. (2025). Analysis of User Readiness and Acceptance of SeaBank Indonesia Using the Technology Readiness and Acceptance Model (TRAM) Approach. Journal of Advances in Information Systems and Technology, 7(1), 115-131.

[4] Fadilah, N., & Andriani, N. (2025). Customer Preferences and Decision-Making in Digital Payments: A Systematic Review Using the Technology Acceptance Model (TAM). Asian Journal of Management Analytics (AJMA), 4(2), 531-546.

[5] Kantika., Kurniasari, F., & Mulyono. (2022). The Factors Affecting Digital Bank Services Adoption Using Trust as Mediating Variable. Journal of Business and Management Review, 3(10), Page 690-704.

[6] Sukache, V. (2019). Towards Extending the Original Technology Acceptance Model (TAM) for a Better Understanding of Educational Technology Adoption. Proceedings of the International Scientific Conference Society, Integration Education, V, 25-549.

[7] D. B. Uche, O. B. Osuagwu, S. N. Nwosu, and U. S. Otika (2021). Integrating Trust into Technology Acceptance Model (TAM), The Conceptual Framework For E-Payment Platform Acceptance. British Journal of Management and Marketing Studies, 4(4), 34-56.

[8] N. Singh & B. R. Rao (2024). Data Security and Customer Trust in Fintech Innovations using Technology Adoption Method. International Journal of Scientific Research in Engineering and Management (IJREM), 8(5), 1-10.

[9] Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. Research Methods in Applied Linguistics, 1(3).

[10] Rahayu, R. (2022). Factors That Influence the Behavioral Intention to Use E-Payments in Indonesia. Journal of Economics and Business, 6(1), 116-125.

[11] Johan, S. (2020). Users' Acceptance of Financial Technology in an Emerging Market (An Empirical Study in Indonesia). Jurnal Ekonomi dan Bisnis, 23(1), 173-188.