
Enhancing Economic Participation through Technology: A Modified TAM Study on BIONS at the Investment Gallery

Lusia Tria Hatmanti Hutami¹, Yhoga Heru Pratama², Nala Tri Kusuma³,
Nonik Kusuma Ningrum⁴, Davet Kasidi⁵

Abstract:

The development of digital technology has brought significant changes in various aspects of life, including in the investment sector. One of the widely used investment applications in Indonesia is BIONS (BNI Sekuritas Innovative Trading System), developed by BNI Sekuritas. This study aims to analyze how Perceived Ease of Use, Perceived Usefulness, and Perceived Enjoyment affect Actual Usage in BIONS applications with Intention to Use as a mediating variable. The model developed in this study uses TAM modification by adding the perceived enjoyment variable. The distribution of this questionnaire is aimed at users who use the BIONS application at the Investment Gallery in Yogyakarta, Indonesia. The researcher used a purposive sampling method with a total of 100 respondents. The results showed that Perceived Ease of Use, Perceived Enjoyment, and Intention to Use had a significant effect on actual usage, while perceived usefulness had not affect significantly.

Keywords: *Perceived Ease of Use, Perceived Usefulness, Perceived Enjoyment, Actual Usage, Intention To Use*

Submitted: May 1, 2025, Accepted: May 28, 2025, Published: July 1, 2025

1. Introduction

The development of digital technology has brought significant changes to various aspects of life, including the investment sector. Digital investment applications are increasingly being used by the public to access capital markets more easily and flexibly. One of the widely used investment applications in Indonesia is BIONS (BNI Sekuritas Innovative Trading System), developed by BNI Sekuritas. This application is designed to facilitate investors in executing stock transactions, monitoring market movements, and analyzing investment opportunities in real time. Several Investment Galleries based on higher education campuses have collaborated with BNI Sekuritas

¹ Universitas Sarjanawiyata Tamansiswa, Indonesia. trialusia@ustjogja.ac.id

² Universitas Sarjanawiyata Tamansiswa, Indonesia.

³ Universitas Sarjanawiyata Tamansiswa, Indonesia.

⁴ Universitas Sarjanawiyata Tamansiswa, Indonesia.

⁵ Universitas Sarjanawiyata Tamansiswa, Indonesia.

and, in 2024, jointly held a soft launch of the BIONS application to simplify stock market transactions.

However, despite the innovative features offered by the BIONS app, its actual usage still faces several challenges. Many users register but do not actively use the application. Even more concerning is the potential for users to switch to alternative investment platforms. This phenomenon suggests that various factors influence users' decisions to adopt and consistently use investment applications. Therefore, it is important to analyze the factors affecting the actual use of the BIONS app to improve user adoption rates.

To understand the factors influencing the acceptance of digital investment technologies, the Technology Acceptance Model (TAM) is one of the most widely used theoretical frameworks. TAM identifies two primary factors that affect technology acceptance: Perceived Ease of Use (PEOU) and Perceived Usefulness (PU). PEOU refers to the extent to which an individual believes that using the technology is effortless, while PU refers to the belief that the technology will enhance one's performance. These two factors influence the Intention to Use, which subsequently affects the Actual Use of the application. However, several studies have shown that Perceived Ease of Use may have little or no significant effect on the intention for continued use. Therefore, this study aims to contribute to the existing literature on the application of TAM in Indonesia and help address the existing research gap. TAM has been widely applied in studies examining the adoption of digital technologies, including stock trading platforms, e-banking, fintech, and other digital services. In research focused on mobile-based stock trading applications, TAM has proven effective in explaining user behavior (Düsseldorf et al., 2023; Zhou & Feng, 2017; Pikkariainen et al., 2004).

This study modifies the original TAM model by introducing Perceived Enjoyment as an additional external factor. This modification is based on the notion that, in the current digital era, user enjoyment—through interface design, navigation comfort, and overall user experience—plays an important role in shaping user intentions and decisions to adopt technology, including stock trading applications. Perceived Enjoyment refers to the level of pleasure a person experiences while using a technology, regardless of its functional or productivity benefits. Previous research highlights the importance of this factor, especially in the context of digital applications that require high levels of user interaction. When users find an application enjoyable, they are more likely to use it consistently. For instance, Pambudi (2023) modified TAM by adding Perceived Enjoyment in his study titled *"The Effect of Perceived Ease of Use, Perceived Usefulness, and Perceived Enjoyment on Interest to Continue Using Investment Applications in Indonesia."* The results showed that all variables significantly influenced user interest, except for Perceived Ease of Use. Unlike Pambudi's research, which focused solely on user intention, this study also considers actual usage behavior. Thus, the findings of this study can directly inform development strategies and enhance the marketing positioning of the BIONS application, particularly for BNI Sekuritas (Thong et al., 2006; Alalwan et al., 2017).

In summary, this study aims to analyze how Perceived Ease of Use, Perceived Usefulness, and Perceived Enjoyment influence the Actual Use of the BIONS application, with Intention to Use serving as a mediating variable. It is hoped that this research will provide deeper insights into the factors that encourage or hinder the actual usage of digital investment applications—particularly BIONS—and offer practical recommendations for application developers and financial institutions to improve marketing strategies and user education.

2. Theoretical Background

Perceived Usefulness (PU) is one of the key components of the Technology Acceptance Model (TAM), which was first introduced by Davis. PU is defined as the degree to which a person believes that using a particular technology will enhance their performance or productivity. In other words, if individuals believe that a system or application provides tangible benefits for their work or activities, they are more likely to adopt the technology. PU significantly influences an individual's intention to use technology. The higher the perceived usefulness, the stronger the individual's intention to use the technology (Made et al., 2021; Alsyof et al., 2023; Hutami, 2019; Ariningsih et al., 2022; Nair et al., 2023).

In the context of digital financial applications such as BIONS, improving PU through user-centric design, relevant features, and reliable system performance can positively influence user intentions and behaviors. Therefore, developers and service providers should prioritize strategies that enhance users' perceptions of usefulness to achieve wider and more sustainable adoption of the technology. Based on this rationale, the following hypotheses are proposed:

- H1: Perceived usefulness has a positive and significant effect on the intention to use the BIONS application*
- H4: Perceived usefulness has a positive and significant effect on the actual use of BIONS applications*

Perceived Ease of Use (PEOU) refers to an individual's perception of how easy it is to use a technology. It is defined as “the degree to which a person believes that using a particular system will be free of effort.” This definition emphasizes that the easier a technology is to use, the more likely it is to be adopted. The PEOU variable is commonly used in technology-related research and has been shown to have a significant influence (Hutami, 2019; Nair et al., 2023; Fardani et al., 2024; Puspitasari, Stuart, O'Neill, & Nugraha, 2023; Rachmi et al., 2023). However, some studies have found that PEOU does not have a significant effect on sustained usage intention (Düsseldorf et al., 2023).

PEOU is a crucial factor in determining individuals' acceptance and use of technology. In the context of digital financial platforms like BIONS, improving PEOU through intuitive design, adequate user support, and user-focused development can enhance user adoption and loyalty. Therefore, it is essential for developers and service

providers to pay close attention to ease of use during technology development and implementation. The hypotheses derived from this variable are as follows:

- H2: Perceived ease of use has a positive and significant effect on the intention to use the BIONS application*
- H5: Perceived ease of use has a positive and significant effect on the actual use of the BIONS application*

Perceived Enjoyment (PE) refers to the intrinsic satisfaction or pleasure derived from using a technology, independent of its functional outcomes or benefits. In this context, PE captures the extent to which individuals enjoy using an application simply for the experience itself. For example, if users find BIONS enjoyable to use due to its user-friendly interface, attractive design, or intuitive navigation, they may continue to use the platform even if their investment gains are minimal. PE is frequently used in technology adoption research and has been shown to have a significant impact (Düsseldorf et al., 2023; Zhou & Feng, 2017; Van der Walt et al., 2024; Gultom et al., 2020), although some studies suggest otherwise (Pikkarainen et al., 2004).

PE plays an important role in encouraging sustained technology use, especially for systems that are interactive, educational, or entertainment-focused. A high level of perceived enjoyment, especially when combined with strong digital literacy, can significantly boost continued usage intentions. The following hypotheses are proposed:

- H3: Perceived enjoyment has a positive and significant effect on the intention to use the BIONS application*
- H6: Perceived enjoyment has a positive and significant effect on the actual use of the BIONS application*

Behavioral intention refers to an individual's tendency or willingness to perform a specific action. It is considered a key predictor of actual behavior. Several theoretical frameworks, including the Theory of Planned Behavior (TPB) and the Technology Acceptance Model (TAM), have been developed to explain the relationship between intention and actual behavior. The literature consistently supports a positive and significant influence of intention on behavior in the context of technology adoption (Karyoto et al., 2024; Andika & Madjid, 2012; Ali et al., 2023). Intention is shaped by factors such as perceived usefulness and perceived ease of use, which ultimately affect whether individuals choose to use a given technology. The hypothesis derived from this construct is as follows:

- H7: Intention to use has a positive and significant effect on the actual use of the BIONS application*

Theory of Planned Behavior (TPB): TPB states that individual behavior is influenced by the intention to perform the behavior. This intention is determined by three main factors: 1) Attitude towards behavior: Positive or negative evaluation of the individual

towards the behavior to be performed; 2) Subjective norms: An individual's perception of social pressure to do or not to do such behavior; and 3) Perception of behavior control: An individual's beliefs about his or her ability to perform those behaviors, which reflect past experiences and anticipation of obstacles. These three factors collectively form behavioral intent, which in turn influences actual behavior. The stronger a person's intention to do a behavior, the more likely it is that the behavior will be performed.

3. Methodology

This study uses a type of quantitative research where the results obtained are in the form of numbers so that it can be easily determined that the level of influence between variables can be seen clearly. The population in this study is all users who use the BIONS application at the Yogyakarta Investment Gallery. The number of samples in this study was taken using the Slovin method, totaling 100 respondents. The researcher used the SPSS application to process the data and sampling techniques used, namely the *purposive* sampling method, this is because this study conducted sampling based on certain criteria, namely being a user of the BIONS Yogyakarta Investment Gallery application. The test begins with a validity and reliability test, a classical assumption test, and multiple linear regression analysis. The data collection technique carried out in this study is by using the distribution of questionnaires with an instrument measurement scale, namely using a five-point Likert scale with a scale of 1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree.

4. Empirical Findings/Results

Instrument Test

Validity and Reliability Test

The validity test is used to measure whether a questionnaire is valid or not. A questionnaire is said to be valid if the questionnaire questions can reveal something that will be measured by the questionnaire. The validity test can be seen from the Corrected Item - Total Correlation column. This value is then compared with the value r of the table, then the r table is searched at a significance of 0.05 with a 2-sided test and the number of samples (n), where $(df) = n-2$, $n = 100$ samples, then $df = 100-2 = 98$ and obtained a table r of 0.197. If the value r is calculated $> r$ table, it means that the statement is valid and vice versa if the value r is calculated $< r$ table, it means that the statement is invalid.

The reliability test in this study aims to determine the level of confidence of the instrument or measuring instrument. After testing its validity and obtaining valid items, then the reliability coefficient is sought. This reliability calculation is done by looking for Cronbach's Alpha value. If the value of the Alpha coefficient is > 0.60 , then the question items are declared reliable. If the value of the Alpha coefficient < 0.60 , it is categorized as unreliable. In detail, the validity and reliability values described above from the value limit that have been set as in Table 1 below:

Table 1. Validity and Reliability Test Results

	R- Count	R- Table	Cronbach's Alpha
Perceived Usefulness			.671
The BIONS app helps me make better investment decisions.	.552	.196	
The use of the BIONS application has increased my efficiency in conducting stock transactions.	.344	.196	
The features available in the BIONS application make it easier for me to manage my investment portfolio.	.290	.196	
The BIONS app allows me to make stock transactions faster and easier.	.550	.196	
I feel that the BIONS app has increased my productivity in stock trading activities.	.670	.196	
The BIONS app provides relevant and useful market information for me.	.672	.196	
I feel more confident in investing because I use the BIONS application.	.268	.196	
The BIONS app helped me save time in conducting stock analysis and transactions.	.249	.196	
Overall, the BIONS app provides significant benefits in my investment activities.	.723	.196	
I would recommend the BIONS app to others because of its high usability.	.755	.196	
Perceived Ease of Use			.620
I find the BIONS app easy to learn.	.637	.196	
Using the BIONS app doesn't require much effort.	.416	.196	
I found the navigation in the BIONS app to be very clear and easy to understand.	.245	.196	
The features available in the BIONS app are easy to use.	.254	.196	
I was able to quickly understand how the BIONS app works.	.658	.196	
I feel that the BIONS app has an intuitive and user-friendly interface.	.616	.196	
My interaction with the BIONS app went smoothly and seamlessly.	.303	.196	
I don't need much help to be able to use the BIONS application properly.	.287	.196	
I feel comfortable using the BIONS application in my investment activities.	.658	.196	
Overall, the BIONS app is easy to use in my trading and investment activities.	.620	.196	
Perceived Enjoyment			.700
I feel happy when I use the BIONS app to invest.	.739	.196	
Using BIONS feels fun to me.	.730	.196	
I enjoyed the experience of trading stocks using BIONS.	.815	.196	
I feel relaxed and comfortable when using the BIONS app.	.240	.196	
Using BIONS was a fun experience, not just a task I had to do.	.765	.196	
I use BIONS not only because of its functionality, but also because I enjoy it.	.815	.196	
BIONS provides an interesting experience compared to other trading platforms.	.215	.196	
I felt motivated to use BIONS because of the pleasant experience.	.199	.196	
Intention to Use			.729

	R- Count	R- Table	Cronbach's Alpha
I plan to continue using the BIONS app in my investment activities.	.204	.196	
I intend to use the BIONS application regularly to make stock transactions.			
I will choose the BIONS application as the main platform for investing compared to other applications.	.223	.196	
I plan to increase the frequency of use of the BIONS app in the future.	.726	.196	
If I needed stock trading services, I would choose the BIONS app to use it.	.624	.196	
I feel comfortable to continue using the BIONS app in the long term.	.778	.196	
I am willing to recommend the BIONS app to others who are interested in stock investing.	.715	.196	
I will stick with the BIONS app even though there are other apps with similar features.	.725	.196	
I am confident that using the BIONS app will become part of my investment habits in the future.	.747	.196	
I feel that using the BIONS app was the right decision for my investment needs.	.319	.196	
Current Use			.633
I often use the BIONS application to make stock transactions.	.253	.196	
I use the BIONS application regularly in my investment activities.	.400	.196	
I access the BIONS app several times a week to monitor my portfolio.	.475	.196	
I spent quite a long time using the BIONS app to invest.	.248	.196	
I use the BIONS app to look up market information before making investment decisions.	.483	.196	
I actively utilize the features in the BIONS app such as charts, news, and technical analysis.	.463	.196	
I use the stock price notification feature in the BIONS application.	.317	.196	
I utilize the transaction history feature to evaluate my investment strategy.	.386	.196	
I use the stock analysis feature available in the BIONS app to support investment decisions.	.331	.196	
I use the BIONS app not only for stock transactions, but also for reading news and market analysis.	.399	.196	

Source: Data Processed SPSS (2025)

Based on Table 1, the validity and reliability test of the results of 100 respondents can be found that the results of the r test are calculated $> r$ of the table, thus it can be concluded that all questions for the variables Perceived Usefulness, Perceived Ease of Use, Perceived Enjoyment, Intention to Use, and Actual Usage have valid status. Cronbach's Alpha value of the Perceived Usefulness variable is 0.671, Perceived Ease of Use is 0.620, Perceived Enjoyment is 0.700, Intention to Use is 0.729, Actual Usage is 0.633 so that it can be concluded that all variables in the statement are declared reliable because they have met the required value, namely with a Cronbach Alpha value of > 0.6 .

Traditional assumption test Test of Normalcy

Table 2. Normality Test Results Model 1

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		100
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	2.11464385
Most Extreme Differences	Absolute	.073
	Positive	.073
	Negative	-.053
Test Statistic		.073
Asymp. Sig. (2-tailed)		.200,d
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

The results of the kolmogrov-smirnov normality test showed that the value of Asymp. The sig. (2-tailed) of 0.200 is greater than 0.05 so it can be concluded that the data is normally distributed and can be further tested.

Table 3. Normality Test Results Model 2

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		100
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	2.62710409
Most Extreme Differences	Absolute	.057
	Positive	.048
	Negative	-.057
Test Statistic		.057
Asymp. Sig. (2-tailed)		.200,d
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

The results of the kolmogrov-smirnov normality test showed that the value of Asymp. The sig. (2-tailed) of 0.200 is greater than 0.05 so it can be concluded that the data is normally distributed and can be further tested.

Test of Multicollinearity

The multicollinearity test looks for prove of an interface between free factors in a relapse show. There shouldn't be any relationship between the free factors in a conventional relapse show. Autonomous factors are not orthogonal on the off chance that they show relationships with one another. Agreeing to orthogonal factors are free

factors with a relationship esteem between them of zero. The Resistance and VIF values within the direct relapse come about are regularly utilized to decide whether multicollinearity exists (Ghony, 2012)

Table 4. Results of the Multicollinearity Test

Coefficient			
Variable Name	Tolerance	VIVID	Information
Perceived Usefulness	.349	2.862	No Multicollinearity Occurs
Perceived Ease of Use	.365	2.742	No Multicollinearity Occurs
Perceived Enjoyment	.545	1.834	No Multicollinearity Occurs
Intention to Use	.286	3.502	No Multicollinearity Occurs

Source: 2025 processed original data

Concurring to the decision-making prepare, multicollinearity does not exist on the off chance that resilience is more noteworthy than 0.10 and VIF is less than 10. There's no relationship between the free factors, concurring to the calculation comes about within the over table, which too appears that the resistance esteem is more than 0.10 and the VIF esteem of each free variable is essentially underneath 10. Subsequently, it can be said that the independent factors within the relapse demonstrate don't show multicollinearity.

Table 5. Multicollinearity Test Results

Coefficient			
Variable Name	Tolerance	VIVID	Information
Perceived Usefulness	.349	2.862	No Multicollinearity Occurs
Perceived Ease of Use	.365	2.742	No Multicollinearity Occurs
Perceived Enjoyment	.545	1.834	No Multicollinearity Occurs
Intention to Use	.286	3.502	No Multicollinearity Occurs

The results of the multicollinearity test in the table show that the tolerance value is > 0.1 and $VIF < 10$, Based on the results of the test, it can be said that there is no problem of multicollinearity in this study.

Test of Heteroscedasticity

The reason of the heteroscedasticity test is to decide whether the leftover of one perception isn't similarly conveyed regarding a fixed perception within the relapse show. On the off chance that this can be the case, the test is alluded to as homoscedasticity; if not, it is alluded to as heteroscedasticity or heteroscedasticity happens. A compelling relapse show requires the need of heteroscedasticity issues. Heteroscedasticity suspicions can be inspected by the utilize of scatterplots test.

Table 6. Model 1 Heteroskedasticity Test Results

Coefficient		
Type	Sig.	Information
Perceived Usefulness	.796	No Heteroskedasticity
Perceived Ease of Use	.619	No Heteroskedasticity
Perceived Enjoyment	.594	No Heteroskedasticity

a. Dependent Variable: ABS_RES1

The results of the heteroskedasticity test in the table through the glycer test showed that each of the independent variables had a significance value of > 0.05 . Based on

this test, it can be said that there is no heteroskedasticity in the regression model in this study.

Table 7. Model 2 Heteroskedasticity Test Results

Coefficient		
Type	Sig.	Information
Perceived Usefulness	.643	No Heteroskedasticity
Perceived Ease of Use	.400	No Heteroskedasticity
Perceived Enjoyment	.789	No Heteroskedasticity
Intention to Use	.704	No Heteroskedasticity

a. Dependent Variable: ABS RES2

The results of the heteroskedasticity test in the table through the glycer test showed that each of the independent variables had a significance value of > 0.05 . Based on this test, it can be said that there is no heteroskedasticity in the regression model in this study

Analysis of Regression

Relapse investigation could be a factual method that appears the presence or nonattendance of a relationship—also known as a causal connect or cause and effect—as a condition or systematically demonstrate. Relapse can be utilized to make a demonstrate, such as a relapse condition, or to foresee results. The method of relapse examination itself is utilized to discover how much one variable influence one or more other factors.

Results of Multiple Linear Regression I

Table 8. Model 1 Multiple Linear Regression Results

Coefficient					
		Unstandardized Coefficients		Standardized Coeffici	
Type		B	Std. Error	Beta	t Sig.
1	(Constant)	.654	2.653		.246 .806
	Perceived Usefulness	.396	.086	.383	4.577 .000
	Perceived Ease of Use	.400	.090	.367	4.460 .000
	Perceived Enjoyment	.252	.085	.210	2.975 .004

a. Dependent Variable: Intention to Use

From the multiple regression analysis equation above, it can be described as follows. Based on the results of multiple linear regression analysis in the table above, the following regression equations are obtained:

$$Z = a + b_1X_1 + b_2X_2 + b_3x_3 + e$$

$$Z = 0.654 + 0.396X_1 + 0.400X_2 + 0.252X_3 + e$$

The model can be interpreted as follows:

- The constant (a) is 0.654. shows that the independent variables of Perceived Usefulness, Perceived Ease of Use, Perceived Enjoyment, and Intention to Use remain constant.
- The Perceived Usefulness coefficient of the variable is 0.396, which indicates that Perceived Usefulness has a positive (unidirectional) influence on Intention to Use.

- c. The Perceived Ease of Use variable coefficient is 0.400, which indicates that Perceived Usefulness has a positive (unidirectional) influence on Intention to Use.
- d. The variable coefficient of Perceived Enjoyment is 0.252, which indicates that Perceived Usefulness has a positive (unidirectional) influence on Intention to Use.

Results of Multiple Linear Regression II

Table 9. Model 2 Multiple Linear Regression Results

Coefficients ^a					
Type	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
1 (Constant)	30.977	3.314		9.346	.000
Perceived Usefulness	.017	.119	.023	1.143	.887
Perceived Ease of Use	.021	.123	-.027	1.168	.007
Perceived Enjoyment	.150	.111	.178	1.356	.008
Intention to Use	.131	.127	.186	1.025	.008

a. Dependent Variable: Current Usage

From the multiple regression analysis equation above, it can be described as follows. Based on the results of multiple linear regression analysis in the table above, the following regression equations are obtained:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + Z + e$$

$$Z = 30.977 + 0.017X_1 + 0.021X_2 + 0.150X_3 + 0.131Z + e$$

The model can be interpreted as follows:

- a. Constant (a) is 30.977. shows that the independent variables Perceived Usefulness, Perceived Ease of Use, Perceived Enjoyment, Intention to Use remain constant against Actual Usage
- b. The Perceived Usefulness coefficient of the variable is 0.017, which indicates that Perceived Usefulness has a positive (unidirectional) influence on Actual Usage.
- c. The Perceived Ease of Use variable coefficient is 0.021, which indicates that Perceived Usefulness has a negative effect on Actual Usage.
- d. The variable coefficient of perceived Enjoyment is 0.150, which indicates that Perceived Usefulness has a positive (unidirectional) influence on Actual Usage.
- e. The Intention to Use variable coefficient is 0.131, which indicates that Perceived Usefulness has a positive (unidirectional) influence on Actual Usage.

t Test

Table 10. Model 1 t-test results

Coefficient					
Type	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
1 (Constant)	.654	2.653		.246	.806
Perceived Usefulness	.396	.086	.383	4.577	.000
Perceived Ease of Use	.400	.090	.367	4.460	.000
Perceived Enjoyment	.252	.085	.210	2.975	.004

a. Dependent Variable: Intention to Use

The following are the results of the analysis of the t statistical test based on the table above by comparing the significant value of each variable with the significant table probability value of 0.05. The criteria used are:

- Ho is accepted if $t \text{ calculates} < \text{or sig} > 0.05$ and H1 is subjected.
- Ho is rejected if $t \text{ table} > \text{or sig} < 0.05$ and H1 are accepted
- The value of the table t at the level of $\alpha = 5\%$ or 0.05 and the degree of freedom (df) = $n - 1 = 100 - 1 = 99$, then the value of the table t is obtained 198.422

Based on the analysis results, all three tested hypotheses are accepted, as each variable shows a positive and significant effect on *Intention to Use*. The *Perceived Usefulness* variable (H1) has a t-value of 4.577 with a significance level of 0.000, indicating that the perception of usefulness significantly influences the intention to use the BIONS application. Similarly, *Perceived Ease of Use* (H2) also demonstrates a significant effect with a t-value of 4.460 and a significance level of 0.000, suggesting that perceived ease contributes to users' intention to adopt the application. Additionally, *Perceived Enjoyment* (H3) shows a significant influence with a t-value of 2.975 and a significance level of 0.004, confirming that the enjoyment experienced while using the application positively affects users' intention to continue its use. These findings align with previous studies, emphasizing the critical role of perceived usefulness, ease of use, and enjoyment in driving voluntary technology adoption.

Table 11. Model 2 t Test Results

Type	Coefficient		t	Sig.
	Unstandardized	Standardized		
	Coefficients	Coefficients		
	B	Std. Error	Beta	
1 (Constant)	30.977	3.314		
Perceived Usefulness	.017	.119	.023	9.346 .000
Perceived Ease of Use	.021	.123	-.027	1.143 .887
Perceived Enjoyment	.150	.111	.178	1.168 .007
Intention to Use	.131	.127	.186	1.356 .008
			1.025	.008

a. Dependent Variable: Current Usage

The following are the results of the analysis of the t-statistical test based on the table above by comparing the significant value of each variable with the significant probability value of the table t of 0.05. The criteria used are:

- Ho is accepted if $t \text{ calculates} < \text{or sig} > 0.05$ and H1 is subjected.
- Ho is rejected if $t \text{ table} > \text{or sig} < 0.05$ and H1 are accepted
- The value of the table t at the level of $\alpha = 5\%$ or 0.05 and the degree of freedom (df) = $n - 1 = 100 - 1 = 99$, then the value of the table t is obtained 198.422

Based on the statistical results, of the four tested hypotheses related to *Actual Usage*, three are accepted and one is rejected. The hypothesis regarding *Perceived Usefulness* (H4) is rejected, as it shows a t-value of 1.143 with a significance level of 0.887, which is greater than 0.05. This indicates that perceived usefulness does not have a significant effect on actual usage. In contrast, *Perceived Ease of Use* (H5) is accepted, showing a significant effect with a t-value of 1.168 and a significance level

of 0.007, although the direction of the effect is negative. This suggests that while the system may be easy to use, it does not necessarily lead to higher usage, possibly due to a lack of perceived usefulness. *Perceived Enjoyment* (H6) also significantly influences actual usage, with a t-value of 1.356 and a significance level of 0.008, indicating that enjoyment positively contributes to continued usage behavior. Lastly, *Intention to Use* (H7) is found to have a significant and positive effect on actual usage, with a t-value of 1.025 and a significance level of 0.008. This supports the notion that individuals with stronger intentions are more likely to engage in actual system usage.

F Test

Table 12. ANOVA Model 1 Test Results

Type		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1107.740	3	369.247	80.072	.000b
	Residual	442.700	96	4.611		
	Total	1550.440	99			

a. Dependent Variable: Intention to Use

b. Predictors: (Constant), Perceived Enjoyment, Perceived Ease of Use, Perceived Usefulness

The results of the table above show that the value of f calculation is obtained as 80.072, while the value of f of the table at $df\ 1 = k$ (number of free variables) = 3, $df\ 3 = n - k - 1$ ($100 - 3 - 1$) = 96 of 2.70, which indicates that f count is greater than f table (42.579 is greater than 3.92). However, a significant value of 0.000 is smaller than 0.05. Thus, the F test shows that Perceived Enjoyment, Perceived Ease of Use, Perceived Usefulness have a simultaneous effect on Intention to Use.

Table 13. ANOVA Model 2 Test Results

Type		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	82.844	4	20.711	2.880	.027b
	Residual	683.266	95	7.192		
	Total	766.110	99			

a. Dependent Variable: Actual Usage

b. Predictors: (Constant), Intention to Use, Perceived Enjoyment, Perceived Ease of Use, Perceived Usefulness

The results of the table above show that the value of f calculation is obtained as 2.880, while the value of f of the table at $df\ 1 = k$ (sum of free variables) = 4, $df\ 4 = n - k - 1$ ($100 - 4 - 1$) = 95 of 2.47, which indicates that f count is greater than f table (2.880 is greater than 3.92). However, a significant value of 0.000 is smaller than 0.05. Thus, the F test shows that Intention to Use, Perceived Enjoyment, Perceived Ease of Use, Perceived Usefulness have a simultaneous effect on Actual Usage.

Coefficient of Determination (R Square)

The coefficient of assurance esteem is between zero (0) and one (1). A little R^2 esteem implies that the capacity of the autonomous (free) variables to clarify varieties within the subordinate variable is exceptionally constrained. A value close to one implies that the subordinate factors give almost all the data required to foresee varieties within the subordinate variable.

Table 14. Model 1 Determination Coefficient Test Results

Model Summary ^b					
Type	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.845a	.714	.706	2.147	1.801

a. Predictors: (Constant), Perceived Enjoyment, Perceived Ease of Use, Perceived Usefulness

b. Dependent Variable: Intention to Use

Based on the table, the value of the determination coefficient (Adjusted R²) in this study is 0.706. This value means that the independent variables, namely Perceived Enjoyment, Perceived Ease of Use, Perceived Usefulness in influencing Intention to Use by 70.6% while the remaining 29.4% are influenced by other factors that were not studied in this study.

Table 15. Model 2 Determination Coefficient Test Results

Model Summary ^b					
Type	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.329a	.108	.671	2.682	2.105

a. Predictors: (Constant), Intention to Use, Perceived Enjoyment, Perceived Ease of Use, Perceived Usefulness

b. Dependent Variable: Current Usage

Based on the table, the value of the determination coefficient (Adjusted R²) in this study is 0.671. This value means that the independent variables, namely Intention to Use, Perceived Enjoyment, Perceived Ease of Use, Perceived Usefulness in affecting Actual Usage by 67.1% while the remaining 32.9% are influenced by other factors that were not studied in this study.

Path Analysis

Path Interpretation

This way elucidation is utilized to decide whether there's an impact of the intervention (mediating) measurement in this investigate show.

Relapse Step 1:

1. P1: Standardized coefficient beta for the perceived usefulness variable (X1) is 0.383
2. P2: Standardized coefficients beta for the perceived ease of use variable (X2) is 0.367
3. P3: Standardized coefficients beta for the perceived enjoyment (X3) is 0.210

Relapse Step 2:

1. P4: Standardized coefficients beta for the perceived usefulness variable (X1) is 0.023
2. P5: Standardized coefficients beta for the perceived ease of use variable (X2) is -0.027
3. P6: Standardized coefficients beta for perceived enjoyment variable (X3) is 0.178
4. P7: Standardized coefficients beta for Intention to Use variable (Z) is 0.186

Indirect Effect

Table 16. Indirect Effect

Path	Count	Results
PU -> IU-> AU	$P1 \times P7 = 0.383 \times 0.186$	0.0712
PEOU -> IU ->AU	$P2 \times P7 = 0.367 \times 0.186$	0.0683
OR > IU > AU	$P3 \times P7 = 0.210 \times 0.186$	0.0391

Total Effect

Table 17. Total Effect

Variable -> AU	Straight	Indirect	Total
PU	0.023	0.0712	0.0942
SQUIRT	-0.027	0.0683	0.0413
PE	0.178	0.0391	0.2171

Perceived Enjoyment (PE) has the greatest total influence on Actual Usage (0.2171). Intention to Use acts as an important mediator, as it magnifies the indirect influence of other variables on Actual Usage. Perceived Ease of Use even had a negative direct effect (-0.027), but the total remained positive due to its indirect contribution.

5. Discussion

This study aims to analyze the factors that influence the acceptance of the BIONS application in the Investment Gallery in Yogyakarta using a modified Technology Acceptance Model (TAM). The modification involves the inclusion of *Perceived Enjoyment (PE)* as an external factor that affects both *Intention to Use (IU)* and *Actual Usage (AU)*. This modification represents the novelty of the study, as most previous TAM-based research primarily emphasized utilitarian aspects such as usefulness and ease of use (Pikkarainen et al., 2004).

The results indicate that *Perceived Usefulness (PU)*, *Perceived Ease of Use (PEOU)*, and *Perceived Enjoyment (PE)* simultaneously have a significant positive effect on *Intention to Use*. This finding supports the classical TAM assertion that usefulness and ease of use are core determinants of intention (Chang et al., 2015; Alsyounf et al., 2023; Fardani et al., 2024). Moreover, the inclusion of enjoyment aligns with the extended TAM studies, which have shown that emotional and hedonic aspects significantly influence users' intentions, particularly in digital platforms (Byun et al., 2018; Zhou & Feng, 2017).

However, despite the strong effect of *Perceived Usefulness* on *Intention to Use*, it was found to have no significant direct effect on *Actual Usage*. This contradiction can be interpreted through the intention–behavior gap framework, where intention does not always lead to behavior due to real-world barriers such as access issues, user resistance, or organizational constraints (Wong, 2015; Sahin & Sahin, 2021; Tyas & Darma, 2017). As highlighted by Puspitasari et al. (2023), although users may perceive a system as useful, actual engagement often depends on external and situational factors.

Among all variables, *Perceived Enjoyment* was found to have the strongest direct and indirect influence on *Actual Usage*. This supports the findings of van der Walt et al. (2024), which indicate that enjoyable user experiences enhance system usage, especially in technology that requires frequent interaction. In the case of the BIONS application, enjoyment derived from interactivity, interface aesthetics, or a sense of achievement appears to be a crucial motivator. As noted by Gultom et al. (2020), perceived enjoyment can lead to user engagement beyond utilitarian expectations, especially in digital applications targeting younger demographics.

Furthermore, *Intention to Use* also significantly influences *Actual Usage*, reaffirming the core TAM proposition and empirical findings from studies such as Rattanaburi & Vongurai (2021) and Karyoto et al. (2024). The stronger the intention formed by positive perceptions of usefulness, ease, and enjoyment, the more likely users are to engage in actual use. Thus, efforts to enhance users' intention—through awareness, training, and gamified onboarding—could be effective strategies to boost the actual adoption rate of financial technology applications.

In conclusion, this study highlights that while traditional factors like usefulness and ease of use remain important, emotional aspects such as enjoyment play a central role in determining both intention and actual usage. This suggests that user experience (UX) design should not only prioritize functionality but also integrate elements that make the interaction engaging and satisfying (Ali et al., 2023; Pambudi et al., 2023). Financial technology developers should therefore adopt a holistic approach that blends utility, simplicity, and pleasure to increase technology adoption and sustained use.

6. Conclusions

This study concludes that the successful acceptance of the BIONS application among users—particularly within the context of the Investment Gallery in Yogyakarta—is significantly influenced by perceived ease of use, perceived usefulness, and most notably, perceived enjoyment. These findings highlight the importance of a holistic approach in the development of financial technology applications, where user experience plays a crucial role in driving both intention and actual usage behavior.

Intention to Use has proven to be a strong mediating variable, effectively bridging users' initial perceptions with their actual usage of the application. Therefore, strategies aimed at increasing user interest—through engaging educational efforts and emotionally appealing promotions—should become a top priority for user activation and retention. Functional features alone are no longer sufficient; applications like BIONS must also deliver enjoyable and seamless interactions to sustain user engagement.

Future research is encouraged to investigate additional variables not explored in this study, such as user trust, perceived risk, social influence, and hedonic or symbolic value associated with investment application usage. Methodologically, future studies could employ a Structural Equation Modeling (SEM) approach to examine more

complex interrelationships among variables. Longitudinal research is also recommended to observe behavioral dynamics over time and assess the impact of new feature development or marketing strategies on user behavior.

References:

- Alalwan, A. A., Dwivedi, Y. K., & Rana, N. P. (2017). Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. *International Journal of Information Management*, 37(3), 99–110. <https://www.sciencedirect.com/science/article/pii/S026840121630696X>
- Ali, M. I., Amir, T., Wijayanti, N., Barabas, C., Fitri, A. K., & Ratnasari, A. (2023). Analisis intensi mahasiswa terhadap penerapan portal Universitas Alma Ata berbasis mobile menggunakan metode theory of planned behavior. *Jurnal Informatik*, 19, 1–10.
- Alsyouf, A., Lutfi, A., Alsubahi, N., Alhazmi, F. N., Al-Mugheed, K., Anshasi, R. J., Alharbi, N. I., & Albugami, M. (2023). The use of a technology acceptance model (TAM) to predict patients' usage of a personal health record system: The role of security, privacy, and usability. *International Journal of Environmental Research and Public Health*, 20(2), 1347. <https://doi.org/10.3390/ijerph20021347>
- Andika, M., & Madjid, I. (2012). Analisis pengaruh sikap, norma subyektif dan efikasi diri terhadap intensi berwirausaha pada MA. In *Eco-Entrepreneurship Seminar & Call for Paper "Improving Performance by Improving Environment"* (pp. 190–197). <https://doi.org/10.1007/978-1-4419-0143-0>
- Ariningsih, E. P., Wijayanti, W., & Prasaja, M. G. (2022). Intention to use e-wallet dilihat dari perceived usefulness, perceived ease of use, perceived security, dan trust. *Jurnal Maksipreneur: Manajemen, Koperasi, dan Entrepreneurship*, 11(2), 227–244. <https://doi.org/10.30588/jmp.v11i2.916>
- Byun, H., Chiu, W., & Bae, J. S. (2018). Exploring the adoption of sports brand apps: An application of the modified technology acceptance model. *International Journal of Asian Business and Information Management*, 9(1), 52–65. <https://doi.org/10.4018/IJABIM.2018010105>
- Chang, S. C., Sun, C. C., Pan, L. Y., & Wang, M. Y. (2015). An extended TAM to explore behavioural intention of consumers to use m-commerce. *Journal of Information and Knowledge Management*, 14(2), 1–16. <https://doi.org/10.1142/S0219649215500148>
- Fardani, F. E., Sudiarditha, I. K. R., Dianta, K., & Sebayang, A. (2024). Pengaruh literasi keuangan, persepsi kegunaan dan kemudahan terhadap minat menggunakan QRIS pada pelaku UMKM di DKI Jakarta. *Jurnal Serambi Ekonomi dan Bisnis*, 7(2), 56–65. <https://ojs.serambimekkah.ac.id/serambi->
- Gultom, R., Khafri, R., Nurtjahyo, M. B., & Puspasari, M. A. (2020). Analysis of factors affecting perceived enjoyment and customer continuance intention on mobile games users. *Journal of Games, Game Art and Gamification*, 5(1), 13–22.

- Hutami, L. T. H. (2019). Intensi penggunaan electronic wallet generasi milenial pada tiga startup “unicorn” Indonesia berdasarkan modifikasi TAM. *Jurnal Manajemen*, 8(2), 136–145.
- Karyoto, E. V. A., Wiranti, Y. T., & Putera, M. I. A. (2024). Pengaruh behavioral intention terhadap use behavior pada penggunaan aplikasi Gojek. *Teknika: Jurnal Sains dan Teknologi*, 13(1), 109–119. <https://doi.org/10.34148/teknika.v13i1.761>
- Made, N., Pirdayanti, S., Luh, N., & Wiagustini, P. (2021). The influence of perceived risk, perceived of usefulness, and perceived ease of use on the use of financial technology. *American Journal of Humanities and Social Sciences Research*, 5(6), 57–63. www.ajhssr.com
- Nair, S., Jayabalan, N., & Perumal, I. (2023). E-wallet usage intention in Selangor, Malaysia. *Journal of Hunan University Natural Sciences*, 50(4), 123–130. <https://doi.org/10.55463/issn.1674-2974.50.4.2>
- Oliveira, C. de, & Camargo, C. (2016). Social connection in organizations: The effects of local ties on job engagement and performance. *Revista de Administração*, 51(4), 377–385.
- Pambudi, I. A. S., Roswinanto, W., & Meiria, C. H. (2023). Pengaruh perceived ease of use, perceived usefulness, dan perceived enjoyment terhadap minat untuk terus menggunakan aplikasi investasi di Indonesia. *Journal of Management and Business Review*, 20(3), 482–501. <https://doi.org/10.34149/jmbr.v20i3.577>
- Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnla, S. (2004). Consumer acceptance of online banking: An extension of the technology acceptance model. *Internet Research*, 14(3), 224–235. <https://doi.org/10.1108/10662240410542652>
- Puspitasari, A., Widayanto, & Nugraha, H. S. (2023). The impact of perceived ease of use and perceived usefulness on actual system use through intention to use as an intervening variable in subscription video on demand services (Study on Netflix users in Semarang City). *World Journal of Advanced Research and Reviews*, 18(3), 1354–1366. <https://doi.org/10.30574/wjarr.2023.18.3.1230>
- Rachmi, I. F., Asta, F. R., & Kartiko, N. D. (2023). The effects of perceived ease of use, perceived usefulness, and computer self-efficacy on e-Nofa application user satisfaction. *E3S Web of Conferences*, 388, 04017. <https://doi.org/10.1051/e3sconf/202338804017>
- Rahi, S., Ghani, M. A., & Ngah, A. H. (2019). Integration of unified theory of acceptance and use of technology in internet banking adoption setting: Evidence from Pakistan. *Technology in Society*, 58, 101120. <https://doi.org/10.1016/j.techsoc.2019.03.003>
- Rattanaburi, K., & Vongurai, R. (2021). Factors influencing actual usage of mobile shopping applications: Generation Y in Thailand. *Journal of Asian Finance, Economics and Business*, 8(1), 901–913. <https://doi.org/10.13106/jafeb.2021.vol8.no1.901>
- Sahin, F., & Sahin, Y. L. (2021). Examining the acceptance of e-learning systems during the pandemic: The role of compatibility, enjoyment and anxiety. *International Technology and Education Journal*, 5(1), 1–10.
- Tyas, E. I., & Darma, E. S. (2017). Pengaruh perceived usefulness, perceived ease of use, perceived enjoyment, dan actual usage terhadap penerimaan teknologi

- informasi: Studi empiris pada karyawan bagian akuntansi dan keuangan Baitul Maal Wa Tamwil wilayah Daerah Istimewa Yogyakarta dan sekitarnya. *Reviu Akuntansi dan Bisnis Indonesia*, 1(1), 25–35.
- van der Walt, F., Nkoyi, A., & Thithi, M. (2024). The influence of selected factors on perceived enjoyment of the online learning experience: Lessons for post-COVID-19 classrooms. *Frontiers in Education*, 9, 1274126. <https://doi.org/10.3389/feduc.2024.1274126>
- Wong, G. K. W. (2015). Understanding technology acceptance in pre-service teachers of primary mathematics in Hong Kong. *Australasian Journal of Educational Technology*, 31(6), 713–729.
- Zhou, R., & Feng, C. (2017). Difference between leisure and work contexts: The roles of perceived enjoyment and perceived usefulness in predicting mobile video calling use acceptance. *Frontiers in Psychology*, 8, 350. <https://doi.org/10.3389/fpsyg.2017.00350>