



THE IMPLEMENTATION OF FINANCIAL TECHNOLOGY IN DIGITAL INVESTMENT APPLICATIONS FOR THE CITIZENS OF INDONESIA

Masno Marjohan^{1*} , Rita Satria¹ , Sunanto Sunanto¹, Prama Indra Ishwara¹

Received 16.01.2026.

| Sent to review 02.02.2026. | Accepted 18.05.2026.

Original article



¹ Pamulang University, Faculty of Economics and Business, Master of Postgraduate Management Study Program. Indonesian

***Corresponding Author:**
Masno Marjohan

Email:
dosen00124@unpam.ac.id

JEL Classification:
G23, G41, O33

Doi: 10.2478/eoik-2026-0042

UDK: 336.763(5):[339.926:004.78

ABSTRACT

This study aims to analyse the factors influencing the adoption of online investment applications among millennials in Indonesia, particularly in the Banten, West Java, and Greater Jakarta regions. It applies the Unified Theory of Acceptance and Use of Technology (UTAUT) framework, extended by two additional variables trust and perceived risk to capture the behavioural and psychological dimensions of digital investment adoption. This is an explanatory study employing a quantitative approach and cross-sectional survey data collected through a structured questionnaire. A total of 145 respondents, all active users of online investment applications registered with the Financial Services Authority (OJK), were selected as the research sample. Data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The findings reveal that perceived risk and facilitating conditions significantly influence the intention to use online investment applications. In contrast, performance expectancy, effort expectancy, social influence, and trust were not found to have a significant effect in this context. These findings indicate that perceived risk and technological readiness play a more dominant role than the traditional UTAUT factors in shaping the digital investment behaviours of millennials in Indonesia. This study contributes to the development of the UTAUT model by incorporating psychological variables and offers practical implications for fintech providers and policymakers seeking to increase the adoption of digital investment applications through improved risk management and stronger system infrastructure.

Keywords: *Financial Technology, Online Investment, App Perceived, Risk Trust, UTAUT*

1. INTRODUCTION

In developing countries, investment plays a crucial role in economic development. As noted by Nisaâ (2022), "The importance of investment is to achieve the desired economic development when the capital of a country is limited." Developing countries may struggle to achieve economic prosperity without sufficient investment to support high levels of economic growth.

In recent years, the financial services industry has increasingly adopted digital solutions, including digital transactions, lending, trading, and consulting services. The rise of the digital ecosystem has enabled online investment platforms to interact with investors more quickly and efficiently than traditional service models. One such innovation is online investment man-

agement, commonly offered by fund management companies that integrate advanced technology into their services. According to [Rahadi et al. \(2021\)](#), several segments of Indonesia's financial services industry that have adopted advanced information technology and innovative methods have experienced significant growth in recent years.

The Indonesia Stock Exchange (IDX) predicted that one million new stock investors would enter the market in 2021. As of August 31, 2021, the number of stock investors with single investor identification numbers had reached 2,697,832. At that time, the total number of capital market investors stood at 6,100,525, contributing positively to the development of Indonesia's capital market.

Inarno Djajadi, President Director of the Indonesia Stock Exchange (IDX), stated that the process of digital optimization began in 2019 and reached its peak in 2020. This was followed by increased collaboration and synergy among all capital market participants, which in turn strengthened investor participation in 2021. According to him, this was one of the main reasons why the number of new investors increased rapidly during that year. As of October 2021, 59.50% of Indonesia's 274 million people were young-generation investors (Indonesia Central Securities Depository).

The digital revolution has also transformed the investment management industry ([Nga and Tam, 2026](#)). The sector is now at a crossroads as it responds to changing customer behaviours, emerging technologies, and new distribution channels ([Wibowo & Widayat, 2023](#)). Researchers have therefore become increasingly interested in understanding why users choose online investment platforms over traditional financial methods. According to [Bakri et al. \(2024\)](#), the application of innovation and information technology in Indonesia's financial services sector has grown substantially.

Recent evidence shows that the adoption of fintech-based investment platforms in emerging markets is driven by a combination of perceived ease of use, trust, and perceived risk ([Komariyah, 2024](#)). In Indonesia, user trust in digital financial applications continues to increase, but perceived risk remains a major barrier ([Wijaya et al., 2025](#)). Similar findings have been reported in sub-Saharan Africa, where trust and perceived benefits jointly determine fintech adoption ([Appiah & Agblewornu, 2025](#)). These findings confirm that the adoption of digital investment is not merely a technological issue, but also a behavioural and psychological challenge that varies across regions. Therefore, this study extends previous research by integrating trust and perceived risk into the Unified Theory of Acceptance and Use of Technology (UTAUT) framework, reflecting current dynamics in fintech investment adoption ([Amnas et al., 2023](#)).

Although awareness of digital payment tools is high, understanding of fintech-based investment remains limited ([Cahyadi et al., 2024](#)). Consumers tend to be more familiar with digital wallets and buy-now-pay-later services than with investment platforms. This imbalance between awareness and understanding creates barriers to adoption, particularly due to perceived risks and limited trust in online investment systems.

The high level of public familiarity with digital wallets and online payments has therefore not been matched by increased adoption of fintech platforms focused on investment ([Mastilo et al., 2025](#)). Research by [Hutapea and Wijaya \(2021\)](#) shows that trust and perceived risk are the main factors influencing the adoption of such platforms in the Indonesian context.

Newcomers to the stock market can easily access information to support their investment decisions. However, incidents involving illegal online investments have also increased. By the end of 2021, regulatory authorities and government bodies had taken action to shut down a significant number of illegal investment firms, fraudulent lenders, and illicit pawnshops. This crackdown may have created doubts among potential investors. Individuals are therefore advised not to be lured by promises of high returns without understanding the considerable risks involved. Every opportunity for profit carries a corresponding level of risk.

In the financial services sector, policies must be continuously updated to keep pace with the rapid changes in information technology brought about by digital transformation (Suryono et al., 2020). Organizations such as the Financial Services Authority (OJK), the Ministry of Communication and Information, and the Investment Alert Task Force share responsibility for supervising sectoral growth and creating a favourable regulatory environment through both legal frameworks and government oversight.

Although extensive research has examined the adoption of fintech services in general, studies that specifically explore the adoption of digital investment applications remain limited. International research shows that perceived risk significantly hinders users' intention to adopt fintech-based investment and wealth-management platforms, while trust plays an important role in mitigating these barriers (Appiah & Agblewornu, 2025; Xie et al., 2021). In the context of digital investment technologies such as robo-advisors and ESG integration, trust has re-emerged as a key factor facilitating adoption (Chen et al., 2025).

Thus, an important research gap remains regarding how perceived risk, trust, and other social and technological factors influence the adoption of digital investment platforms (Shostak et al., 2024). Although many studies address fintech adoption more broadly, research specifically examining digital investment applications in Indonesia is still scarce. Moreover, the integration of trust and perceived risk into the UTAUT framework has not been extensively studied in the local Indonesian context. This gap constitutes the focus of the present study, which seeks to understand the factors influencing the use of online investment applications among millennials in Banten, West Java, and DKI Jakarta.

The theoretical framework for digital financial technology adoption can be grounded in models such as the Technology Acceptance Model (TAM) and UTAUT, in which variables such as perceived usefulness, ease of use, trust, and perceived risk play central roles in shaping usage intention and behavior. Research by Meyliana and Fernando (2019) shows that user trust positively influences the perceived usefulness of fintech and thereby facilitates the adoption of fintech services.

On the other hand, perceived risk related to security, privacy, and service availability has been found to hinder the adoption of financial technology (Purnama et al., 2023). Therefore, in the context of technology-based online investment services, it can be hypothesized that the quality of technology and the excellence of fintech services will increase trust while reducing perceived risk, which in turn will enhance usage intention and behavior.

From both macroeconomic and microeconomic perspectives, this relationship has important implications. When fintech platforms successfully build user trust and reduce perceived risk, the adoption of digital investment services can increase, accelerate capital allocation to financial markets, and support financial inclusion and economic growth (Amnas et al., 2023). Conversely, if perceived risk remains high or trust remains low, the potential of this technology to expand the investor base and improve capital market efficiency will be constrained (Purnama et al., 2023). Thus, trust and perceived risk are not only psychological variables but also important economic mechanisms linking technological innovation to outcomes such as increased investment and market efficiency.

Based on these considerations, this study aims to investigate how performance expectancy, effort expectancy, social influence, trust, and perceived risk affect the intention to use fintech-based investment applications among Indonesian users, particularly in the provinces of Banten, West Java, and DKI Jakarta. This study contributes both theoretically and empirically to understanding user adoption behaviours in the digital financial ecosystem and provides policy recommendations for improving digital financial literacy and strengthening public trust.

2. LITERATURE REVIEW

2. 1. ONLINE INVESTMENT

According to the Oxford Dictionary, the term online refers to “an activity or service available or performed using the Internet or other computer networks.” Investment, meanwhile, is defined as the act of allocating resources with the expectation of future benefits. When investment activities are carried out digitally, they are classified as online investing. This mode of investing offers convenience, efficiency, and reduced need for direct supervision, making it increasingly popular among modern investors.

2. 2. INTEGRATED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY (UTAUT)

UTAUT is an established model for explaining how individuals accept and use technology. It identifies the factors that influence users’ behavioural intentions and actual technology adoption and has been shown to explain 17–53% of the variance in behavioural intention, outperforming eight earlier versions of the Technology Acceptance Model (TAM). Owing to its robustness, UTAUT has been widely applied in research on consumer behavior toward digital investment platforms (Jeyaraj et al., 2023; Marikyan & Papagiannidis, 2023).

Recent literature has also highlighted the influence of advanced technology and global market dynamics on investor behaviours. For example, Dimitriadis et al. (2025b) examined the dynamic relationship between traditional assets, technology stocks, and cryptocurrency during inflationary periods using quantile-VAR and GDCC-GARCH models. Similarly, Dimitriadis et al. (2024) analysed the role of digital assets as substitutes for traditional currencies during inflation. These studies demonstrate that technological transformation adds complexity to global investment behaviours. However, they focus primarily on macro-level dynamics and cross-market interactions and do not address individual psychological factors in depth.

At the same time, previous studies continue to report inconsistent findings regarding the role of behavioural and psychological factors in technology adoption, particularly in financial contexts. This suggests that the predictive power of the UTAUT model may vary depending on contextual conditions such as user characteristics and levels of market maturity, thereby making further investigation necessary in developing countries such as Indonesia.

In contrast, the present study focuses on micro-level behavioural determinants, specifically trust and perceived risk, that shape individual decisions to adopt fintech-based investment applications in an emerging market setting. This constitutes the novelty of the research, as it extends the UTAUT framework to the context of digital investment behaviours in Indonesia, a setting that remains relatively underexplored.

Research on digital investor behaviours has evolved alongside technological transformation and the increasing complexity of global markets. Dimitriadis et al. (2025a), for instance, examined the dynamic relationship between traditional assets, technology stocks, and cryptocurrency during inflationary periods using quantile-VAR and GDCC-GARCH models. Their study highlights how investor preferences may shift depending on market conditions and illustrates the complexity of inter-asset interactions at the macro level. However, the focus of that research lies primarily in global market dynamics and cross-market spillovers, meaning that individual psychological factors such as trust, and perceived risk were not extensively considered.

Unlike those studies, the present research focuses on the micro-determinants of individual investor behaviours in the adoption of fintech-based investment applications in Indonesia. By extending the UTAUT framework through the integration of trust and perceived risk, this study

provides a deeper understanding of the factors influencing the intention to use digital investment applications in emerging market economies. This approach not only adds a new perspective to the literature on financial technology adoption, but also connects the global findings of [Dimitriadis et al. \(2025b\)](#) with the local Indonesian context, thereby clarifying the novelty and contribution of this research. Furthermore, most prior studies have focused on fintech services in general, whereas research specifically addressing digital investment applications remains relatively limited. This creates a research gap in understanding how users evaluate financial technologies that are more complex and associated with higher levels of uncertainty and risk.

Theoretical frameworks such as TAM and UTAUT have long been used in technology adoption research, with UTAUT becoming increasingly prominent in recent years. [Wu and Liu \(2023\)](#), for example, proposed an extended UTAUT model to assess consumers' intention to use remote mobile payment services in the United Kingdom. Although additional variables were incorporated, questions remained regarding the effectiveness of the model in predicting mobile banking usage intention. This indicates the need to integrate stronger psychological constructs into technology adoption research.

Recent empirical studies also emphasize the importance of incorporating trust and perceived risk into UTAUT2, particularly in the context of digital financial services. [Amnas et al. \(2023\)](#) show that trust significantly moderates behavioural intention in fintech usage, while [Wijaya et al. \(2025\)](#) report that perceived benefits and perceived risks are key determinants of fintech adoption in Indonesia. These findings support the inclusion of trust and perceived risk as additional constructs in the present study.

2. 3. INTENTION TO INVEST

[La Barbera and Ajzen \(2021\)](#) highlighted the importance of intention in driving behaviours, underscoring the significance of an individual's commitment and effort toward a specific action. The Theory of Planned Behaviour (TPB) provides a comprehensive framework for understanding behavioural intention by considering three key elements: attitude, subjective norm, and perceived behavioural control. Attitude reflects an individual's evaluation of a behaviour, subjective norm relates to perceived social expectations, and perceived behavioural control refers to the perceived ease or difficulty of performing the behaviours. Complementing this perspective, [East \(1993\)](#) described intention as a state of readiness to act, triggered by perceived opportunities. His research examined investment decision-making as a function of available opportunities and information.

Although the Theory of Planned Behaviour (TPB) has been widely used to explain financial behaviours, its integration with technology adoption models remains relatively limited. Therefore, an approach that combines behavioural theory with technology adoption frameworks is needed to explain investment behavior in the digital environment more comprehensively.

Various researchers have examined the factors influencing the willingness to invest. [Singh and Chakraborty \(2024\)](#) emphasized the influence of psychological variables such as overconfidence, extreme optimism, risk perception, and herd behaviours on investment intention. [Adil et al. \(2022\)](#) reconceptualized perceived behavioural control within the TPB framework as financial knowledge and linked it to the investment decision-making process.

Perceived behavioural control, as defined by the TPB, refers to an individual's confidence in their ability to perform a behaviour using the resources available to them ([Shih et al., 2022](#)). Greater perceived opportunities and resources enhance perceived control, thereby increasing the likelihood that the behaviours will be carried out. [East \(1993\)](#) incorporated knowledge as a key component of perceived control, viewing it as a determinant shaped by individuals'

awareness of and access to information. Following this perspective, Adil et al. (2023) used financial literacy as an indicator of perceived behavioural control when analysing participation in the capital market.

In the present study, financial literacy is similarly employed to represent perceived control in predicting investment intention. As defined by Ingale and Paluri (2022), financial literacy comprises two elements: financial knowledge and financial behaviours. The former concerns an understanding of financial concepts, while the latter reflects confidence in applying that knowledge to decision-making. Consequently, financial literacy is considered a critical driver of financial decisions (Bucher-Koenen et al., 2025).

2. 4. PERFORMANCE EXPECTATIONS

Jiang et al. (2023) suggest that performance expectancy refers to the degree to which individuals believe that a technology can enhance their efficiency and effectiveness in performing specific tasks. Supporting this view, Purohit et al. (2022) argue that consumers tend to adopt new technologies when they perceive them as tools that simplify their activities and improve income-generating opportunities. Similarly, Etim et al. (2023) and Zhu and Wang (2022) associate the growing popularity of mobile banking with its user-friendly nature, which enables convenient access to a wide range of financial services anytime and anywhere. In the context of mobile applications for online investing, performance expectancy is primarily related to the extent to which such applications improve access to investment instruments, increase productivity, enhance time efficiency, and support the achievement of investment goals.

2. 5. BUSINESS EXPECTATIONS

According to Khrais and Alghamdi (2021), effort expectancy refers to the degree of ease associated with using a system. Similarly, Saf and Hachimi (2021) argue that the extent to which individuals perceive a system as beneficial and easy to use influences their willingness to adopt it. Mobile banking includes distinctive features that require users to possess certain skills and abilities, which play an important role in determining their willingness to use the technology (Shaikh et al., 2023). Several earlier studies confirmed that users' effort expectancy significantly influences their intention to adopt online banking channels (Ayinaddis et al., 2023; Kaur & Arora, 2021; Khan et al., 2022). Previous research on mobile banking has also shown that factors related to effort expectancy, particularly perceived ease of use, are essential in determining whether customers will adopt mobile banking services. However, as mobile technology has become more widespread and users have gained greater familiarity with its application, concerns about the complexity of new systems may have diminished.

2. 6. FINANCIAL LITERACY

Perceived behavioral control within the TPB refers to an individual's belief in their ability to perform a behavior using the resources available to them (La Barbera & Ajzen, 2021). Greater access to resources enhances perceived control and, consequently, increases the likelihood of behavioral execution. East (1993) expanded this concept by identifying knowledge as a critical resource shaping perceived control, emphasizing both awareness of and access to relevant information. Consistent with this perspective, Yusfiarto et al. (2023) conceptualized financial literacy as a reflection of perceived behavioral control in analyzing capital market participation.

This study likewise employs financial literacy to represent perceived control in predicting investment intention. Financial literacy encompasses both financial knowledge and the application of financial behavior (Banthia & Dey, 2022; Gunawan, 2023; Ingale & Paluri, 2022). Financial knowledge refers to an understanding of financial concepts, whereas application reflects

confidence in using that knowledge in decision-making. As demonstrated by [Bucher-Koenen et al. \(2025\)](#), financial literacy contributes significantly to effective financial decision-making. In addition to these traditional constructs, several recent studies have emphasized the role of perceived risk in the adoption of digital investment. [Kurniawan et al. \(2024\)](#) found that perceived risk significantly affects the adoption of digital gold investment applications in Indonesia, reflecting growing concerns related to transaction security and privacy. [Gularso and Nicola \(2025\)](#) further showed that young investors (Generation Z) demonstrate greater sensitivity to risk and financial literacy gaps when making digital investment decisions. These findings suggest that financial literacy not only has a direct effect on investment decisions, but also interacts with other factors such as perceived risk and trust, thereby reinforcing its role as a critical determinant in the adoption of digital investment.

3. METHODOLOGY

The research method used in this study is correlational research, which examines the relationships between two or more variables commonly referred to as independent variables (IVs) and dependent variables (DVs) through statistical analysis. This design was chosen because it enables researchers to identify the direction and strength of relationships among behavioural constructs such as perceived risk, trust, and fintech adoption without manipulating external factors, making it suitable for the study of social science and financial behaviours.

This type of research does not focus on analysing the effects of external interventions on the variables under study. Instead, the hypotheses are derived from a review of the existing literature and are stated explicitly. Data were collected through surveys administered to each participant. The study focuses on Java Island, particularly the regions of Banten, DKI Jakarta, and West Java. Java Island was selected because it is the economic and technological hub of Indonesia and has the highest level of internet access in the country. Focusing on this region strengthens the contribution of the study by identifying behavioural patterns in Indonesia's most digitally connected areas, which may serve as a representative model for fintech adoption in emerging economies. Methodologically, this study employs a quantitative approach.

Questionnaires were used as the main data collection instrument, and the quantitative analysis relied on statistical examination of responses gathered from many participants. This methodological approach was designed to empirically test hypotheses derived from the theoretical framework, thereby ensuring alignment between data collection and the objective of analysing how perceived risk and trust influence fintech adoption.

The questionnaire was developed based on validated scales from previous studies related to fintech, trust, and perceived risk. Each construct consisted of several items measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Before the main survey was conducted, the questionnaire underwent expert review and a preliminary test with 30 respondents to ensure clarity, reliability, and contextual appropriateness for Indonesian participants.

The research instrument was a closed-ended questionnaire developed based on relevant theories and prior studies. Before its full distribution, a pilot test was conducted with 30 respondents to assess the clarity and reliability of the items. The results showed Cronbach's alpha values of at least 0.70 for all constructs, indicating that the instrument was reliable. The questionnaire was then distributed online via Google Forms, with links shared through social media platforms such as WhatsApp, Telegram, and online investment communities. Respondents were asked to provide informed consent before completing the questionnaire.

Data were collected between July 20 and August 10, 2022. The study included individuals residing in Indonesia, specifically on Java Island, with particular emphasis on those living in

Banten, West Java, and DKI Jakarta. The descriptive analysis of respondents focused on characteristics directly relevant to the research objectives, such as frequency of fintech use, types of online investment platforms used, and level of online financial experience, rather than on general demographic features alone.

The population of this study consisted of individuals residing on Java Island who had experience using online investment platforms. The sampling technique employed was purposive sampling. The participants were retail investors or users of online investment platforms registered with and supervised by the Indonesian Financial Services Authority (OJK). The sample was selected according to the following inclusion criteria: (1) Indonesian citizens aged 18 to 50 years; (2) residents of Banten, DKI Jakarta, or West Java; and (3) individuals with experience using, or sufficient knowledge of, online investment platforms.

Data were collected through an online questionnaire using Google Forms, distributed via WhatsApp, Telegram, and online investment communities between July 20 and August 10, 2022. Participation was voluntary and based on informed consent. A total of 511 respondents successfully completed the questionnaire. However, a data-screening process was conducted to ensure compliance with the study's inclusion criteria. The primary criterion required respondents to have experience using online investment applications. Based on this criterion, 366 respondents were excluded because they did not meet the requirement, namely, they had no experience with or did not use online investment applications. This screening process was implemented through filter questions at the beginning of the questionnaire to ensure that the selected respondents were relevant to the research objectives. After the screening process, 145 respondents were considered valid and were included in the final analysis ($n = 145$).

Although the final sample size was smaller than the number of initial responses, it is still considered adequate for Partial Least Squares Structural Equation Modelling (PLS-SEM). Moreover, this approach ensures that the analysed data are derived from respondents with relevant experience, thereby enhancing the validity and accuracy of the findings.

The PLS-SEM method is known to be more tolerant of small sample sizes than covariance-based SEM. According to [Hair et al. \(2022\)](#), the minimum sample size should be ten times the number of indicators on the construct with the largest number of indicators, or ten times the number of incoming paths to the endogenous construct. Based on this criterion, the sample size of 145 meets the requirements for producing stable and significant path coefficient estimates. To ensure the robustness of the results, bootstrapping with 5,000 resamples was conducted, providing statistical estimates and confidence intervals that strengthen the reliability of the analysis. In addition, a power test based on the approach suggested by [Hair et al. \(2022\)](#) indicated that this sample size was sufficient to detect medium effect sizes at a 5% significance level with 80% statistical power, thereby supporting the validity of the research findings.

The data were analysed using IBM SPSS version 28 and SmartPLS version 3.3. The analysis employed statistical techniques such as data summarization, pattern identification, and hypothesis testing. SmartPLS was chosen because it is capable of effectively handling complex structural equation models, is suitable for exploratory research involving latent constructs, and offers strong predictive validity in behavioural finance research.

Descriptive Analysis

Out of the 511 respondents initially collected, 145 were deemed eligible for analysis after the screening process based on the study criteria. A total of 366 respondents were excluded because they had no experience using online investment applications. Most respondents were between 24 and 35 years old (38.6%), with males comprising 55.9% of the sample and females

44.1%. Most respondents worked in the private sector (42.1%) and held a bachelor's degree (41.4%). In terms of region of residence, 43.4% were from Banten, 29.7% from West Java, and 26.9% from DKI Jakarta. This profile indicates that the respondents were predominantly from productive-age groups with relatively good digital literacy, consistent with the target population of the study.

Partial Least Squares

The outer model testing shows that the loading factor values of all indicators exceed 0.70, indicating that each indicator makes a strong contribution to its respective construct. Cronbach's alpha values range from 0.801 to 0.872, while composite reliability values range from 0.811 to 0.902, both exceeding the recommended threshold of 0.70. These results indicate that the constructs are reliable. In addition, the average variance extracted (AVE) values range from 0.626 to 0.795, indicating that each construct explains more than 50% of the variance of its indicators. Overall, these findings confirm that the measurement model meets the criteria for convergent validity and internal reliability, thereby supporting the reliability of the constructs used in this study (see Table 1).

Table 1. Outer loading, Cronbach's alpha, composite reliability, and AVE

Variable	Indicator	Outer loading	Cronbach's Alpha	CR	AVE
Performance expectancy	PE1	0.845	0.859	0.866	0.703
	PE2	0.883			
	PE3	0.840			
	PE4	0.728			
Effort expectancy	EE1	0.860	0.872	0.890	0.795
	EE2	0.899			
	EE3	0.916			
Social influence	SI1	0.874	0.814	0.868	0.626
	SI2	0.875			
	SI3	0.691			
	SI4	0.704			
Facilitating condition	FC1	0.857	0.855	0.902	0.697
	FC2	0.825			
	FC3	0.828			
	FC4	0.828			
Trust	T1	0.811	0.857	0.859	0.700
	T2	0.858			
	T3	0.798			
	Q4	0.878			
Perceived risk	PR1	0.728	0.830	0.870	0.662
	PR2	0.859			
	PR3	0.738			
	PR4	0.915			
Intention to use	ITU1	0.764	0.801	0.811	0.718
	THE2	0.906			
	THE3	0.866			

Sources: Processed by authors

The discriminant validity test, using both the Fornell-Larcker criterion and the HTMT ratio, also produced satisfactory results. Specifically, the square root of the AVE for each construct was greater than its correlations with other constructs. This indicates that each construct is sufficiently distinct from the others and that multicollinearity among the variables is not a concern.

The Fornell-Larcker criterion assesses discriminant validity by comparing the square root of the AVE for each latent construct with the correlations between that construct and other latent constructs. A valid latent construct should explain the variance of its own indicators better than it explains variance shared with other constructs. Therefore, the square root of each construct's AVE should be higher than its correlations with all other latent constructs (Khan et al., 2025).

Table 1 also presents the HTMT values used to assess discriminant validity. All values are below the commonly recommended threshold, further confirming that discriminant validity has been established.

The discriminant validity test using the Fornell-Larcker criterion and HTMT also shows results that meet the requirements, where the square root of AVE for each construct is greater than its correlation with other constructs. This indicates that each construct has a clear distinction and there is no multicollinearity between variables.

Table 2. HTMT value for discriminant validity

	Effort expectancy	Facilitating condition	Intention to use	Perceived risk	Performance expectancy	Social influence
Facilitating condition	0.793					
Intention to use	0.831	0.796				
Perceived risk	0.585	0.605	0.836			
Performance expectancy	0.686	0.706	0.738	0.760		
Social influence	0.299	0.355	0.420	0.697	0.486	
Trust	0.629	0.679	0.773	0.795	0.829	0.449

Sources: Processed by authors

The Variance Inflation Factor (VIF) values of all indicators range from 1.45 to 2.95, which are still within the tolerance limit (<5). These results indicate that there is no multicollinearity problem between predictor variables, so the structural model can be analyzed further Hair Jr et al., (2021).

Table 3. Fornell–Larcker criteria for discriminant validity

	Effort expectancy	Facilitating condition	Intention to use	Perceived risk	Performance expectancy	Partner Linfluence	Trust
Effort expectancy	0.892						
Facilitating condition	0.694	0.835					
Intention to use	0.703	0.667	0.848				
Perceived risk	0.527	0.535	0.699	0.814			
Performance expectancy	0.601	0.611	0.619	0.660	0.838		
Social influence	0.277	0.328	0.375	0.565	0.416	0.791	
Trust	0.554	0.588	0.643	0.682	0.718	0.413	0.837

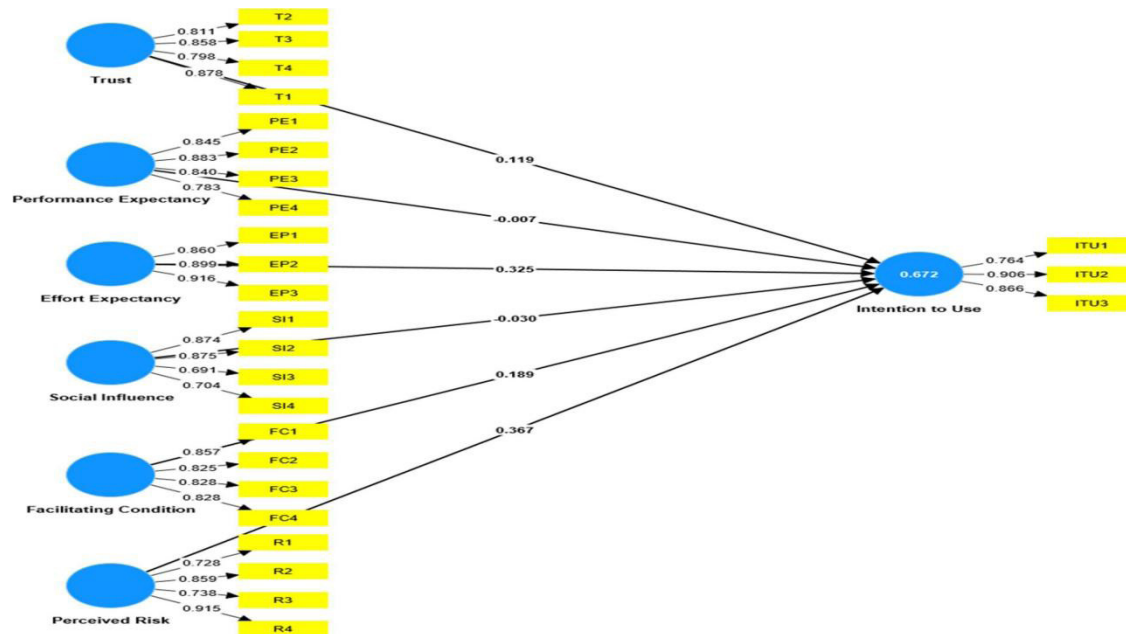
Sources: Processed by authors

Figure 1 displays the results of the bootstrapping analysis, which illustrates the path coefficients as well as the explanatory power of the model. The R^2 value of 0.672 indicates that the intention to use variable can be explained by 67.2% by the variables trust, performance expectancy, effort expectancy, social influence, facilitating conditions, and perceived risk. These results indicate that the model has a strong level of explanatory power.

This study analyzes the direct impact of performance expectancy, business expectancy, social influence, facilitating conditions, trust, and perceived risk on the willingness of Indonesian

people to participate in online investment programs.

Figure 1. Bootstrapping analysis



Sources: Processed by authors

The research results show that three of the six factors effort expectancy, facilitating conditions, and perceived risk have a significant positive impact on the intention to use the application, whereas performance expectancy, social influence, and trust do not have significant effects. The results presented in Table 4 are consistent with the six hypotheses generated from the UTAUT-based model. Specifically, H2, H4, and H6 are supported, indicating that effort expectancy, facilitating conditions, and perceived risk significantly influence adoption intention.

H_1 : Performance expectancy $\rightarrow$ use intention

The values $\beta = -0.007$ and $p = 0.940$ indicate that performance expectancy has no influence on the intention to use online investment applications. This suggests that users are not driven primarily by the performance benefits or efficiency offered by the application, but rather by other factors such as ease of use and risk perception.

H_2 : Effort expectancy $\rightarrow$ use intention

The values $\beta = 0.325$ and $p < 0.001$ show a positive and significant effect. This means that the greater the perceived ease of use and operational convenience, the stronger the users' intention to use online investment applications. This finding confirms that convenience and usability are key drivers of fintech adoption in Indonesia.

H_3 : Social influence $\rightarrow$ use intention

The result $\beta = -0.030$ with $p = 0.632$ indicates that social influence does not play a significant role. The decision to invest online appears to be more individual than social in nature. This may reflect the characteristics of Indonesia's younger generation, who tend to make digital investment decisions independently.

H_4 : Facilitating conditions $\rightarrow$ use intention

The values $\beta = 0.189$ and $p = 0.013$ indicate a significant positive effect. This confirms that support in the form of technological infrastructure, ease of internet access, and adequate digi-

tal understanding are important drivers of online investment platform adoption.

H_5 : Trust $\rightarrow$ use intention

With $\beta = 0.119$ and $p = 0.186$, trust does not have a significant effect on usage intention. Although users may be familiar with service providers, the level of trust formed may not be strong enough to drive consistent usage behaviours. This may indicate a gap between perceptual trust and behavioural trust.

H_6 : Perceived risk $\rightarrow$ use intention

The values $\beta = 0.367$ and $p < 0.001$ indicate the strongest positive effect among all variables. This means that the higher the perception that risks are controllable for example, financial risks and data security risks being manageable the greater the user's intention to invest through online applications. This finding confirms the importance of security and information transparency in encouraging fintech adoption.

Table 4 presents a summary of the structural model results obtained from the bootstrapping analysis, showing the significance of the relationships between the latent variables and the intention to use the application.

Table 4. Summary of structure model results (bootstrapping)

Road	p-value	STDEV	T-value	p-value	Results
Performance expectations $\rightarrow$ Intention to implement	-0.007	0.095	0.075	0.940	Uninfluenced
Business expectations $\rightarrow$ Intention to apply	0.325	0.088	3.711	0.000	Influential
Social influence $\rightarrow$ Intention to apply	-0.030	0.063	0.479	0.632	No effect
Facilitating conditions $\rightarrow$ Intention to apply	0.189	0.076	2.489	0.013	Influential
Trust $\rightarrow$ Intention to apply	0.119		1.322	0.186	Uninfluenced
Perceived risk $\rightarrow$ Intention to apply	0.367	0.101	3.634	0.000	Influential

Sources: Processed by authors

The analysis reveals that effort expectancy has a positive and significant influence on the intention to use the application ($\beta = 0.325$; $T = 3.711$; $p < 0.001$), suggesting that perceived ease of use and practical benefits are key motivators for adoption. Similarly, facilitating conditions show a significant effect ($\beta = 0.189$; $T = 2.489$; $p = 0.013$), indicating that the availability of infrastructure and technical support enhances users' readiness to adopt the application. Perceived risk also exerts a significant positive influence on intention to use ($\beta = 0.367$; $T = 3.634$; $p < 0.001$), confirming that users' perceptions of risk play an active role in shaping their decision-making.

In contrast, performance expectancy ($\beta = -0.007$; $p = 0.940$), social influence ($\beta = -0.030$; $p = 0.632$), and trust ($\beta = 0.119$; $p = 0.186$) do not demonstrate significant effects, indicating that they are not primary determinants of adoption intention within the scope of this study.

The results of the hypothesis testing indicate that H_2 , H_4 , and H_6 are supported, demonstrating that effort expectancy, facilitating conditions, and perceived risk exert a statistically significant influence on behavioural intention to use. Conversely, H_1 , H_3 , and H_5 are not supported, as performance expectancy, social influence, and trust fail to show a significant effect on behavioural intention. These findings underscore that perceived convenience, environmental and technical support, and risk awareness are the principal drivers of intention to use the application.

The research model demonstrates substantial explanatory power, with an R^2 value of 0.672, indicating that the variables included in the model explain a considerable proportion of the variance in behavioural intention to use. Among all the variables examined, perceived risk emerged as the most dominant factor influencing behavioural intention, underscoring the crit-

ical role of risk considerations in the adoption of digital investment platforms. Accordingly, these findings confirm that effort expectancy, facilitating conditions, and perceived risk constitute the primary determinants driving the intention to use digital investment applications.

4. DISCUSSION

The present study was designed to assess the direct effects of performance expectancy, effort expectancy, social influence, facilitating conditions, trust, and perceived risk on Indonesians' intention to use online investment applications. The results presented in Table 4, derived from SmartPLS 4.0 analysis, reveal that not all variables exert a statistically significant influence on behavioural intention. Specifically, effort expectancy, facilitating conditions, and perceived risk were found to have statistically significant effects, whereas performance expectancy, social influence, and trust did not demonstrate significant influence. These findings suggest that the factors shaping users' decisions to adopt online investment services are selective in nature and depend on the contextual dimensions of user behaviours.

The findings indicate that H_1 is not supported, as performance expectancy does not exert a statistically significant influence on users' behavioural intention to use online investment services. This suggests that functional performance benefits are no longer a primary driver of adoption, given that the technology has become widely prevalent, and its utility is already well understood by users. This finding diverges from prior studies that identified performance expectancy as a key determinant of technology adoption (Gallego & Torres, 2021; Gil-Cordero et al., 2024; Vasumathi & Arun, 2021). A recent study by Hanif and Lallie (2021) similarly found that performance expectancy significantly influences behavioural intention to use mobile banking. The divergence in findings suggests a shift in user behaviours, whereby users no longer regard functional performance benefits as a primary consideration; instead, they place greater emphasis on alternative factors such as ease of use, facilitating conditions, and perceived risk in the context of online investment adoption.

However, the insignificant effect of performance expectancy in this study can be explained by the demographic profile of the respondents, the majority of whom (more than 60%) belong to the millennial age group (24-35 years) and have high exposure to digital platforms. This demographic group tends to view online investment applications as part of their everyday digital ecosystem, thereby reducing differences in perceived performance benefits across applications. Consequently, performance advantage is no longer a determining factor in adoption, indicating that utilitarian expectancy loses influence when a technology becomes mainstream.

Fedorko et al. (2021) defines effort expectancy as the perceived ease of using a given system. The present findings reveal a statistically significant relationship between effort expectancy and behavioural intention to use, meaning that H_2 is supported. This result is consistent with prior empirical evidence reported by Chao and Chen (2023) and Sari et al. (2023), who showed that behavioural intention to use online mutual fund platforms is significantly influenced by users' expectations regarding the level of effort required.

In the present study, the effort expectancy construct was operationalized through users' perceptions of how easily they could learn and operate online investment applications. The significant relationship between effort expectancy and behavioural intention can be attributed to users' preference for simplicity and clarity when navigating investment platforms. Descriptive data show that more than 40% of respondents are private sector employees with limited time available for complex financial decision-making. Consequently, ease of use becomes a primary consideration in platform adoption. Users tend to prefer applications that require minimal learning effort and offer intuitive interfaces, reflecting efficiency-oriented behaviours among working millennials.

Social influence, which refers to the extent to which individuals perceive that important others believe they should use a particular system, corresponds to the concept of subjective norm in TRA, TAM2, and SDT, and is also an important construct in MPCU and IDT. The findings presented in Table 4 suggest that H_3 is not supported, indicating that there is no significant relationship between social influence and the intention to use online investment platforms. This finding, in line with Reyna and Encalada (2022), suggests that users' adoption behaviours is largely self-driven. As emphasized by Ozuem et al. (2021), millennials, who constitute a dominant demographic in the adoption of online investment services, tend to initiate technology use independently rather than conforming to others' opinions.

The absence of a significant social influence effect may also be linked to the digital literacy of the respondents, who are predominantly educated and financially independent millennials. They rely more on personal judgment and online reviews than on recommendations from family or peers. With the rise of algorithmic investment platforms and personalized digital services, social cues appear to become less relevant than independent exploration and confidence in one's own digital capabilities.

Ozuem et al. (2021) define facilitating conditions as the degree to which individuals perceive that adequate organizational and technological support is available to enable effective system use. In this study, facilitating conditions were measured based on resource availability, user understanding, and proficiency in managing online investment applications. The analysis indicates a significant relationship between facilitating conditions and intention to use, meaning that H_4 is supported, which aligns with prior findings by Buraimoh et al. (2023) and Madan and Yadav (2021), who identified facilitating conditions as a vital factor in technology adoption.

These results are consistent with the context of the study regions Banten, West Java, and DKI Jakarta where digital infrastructure is relatively mature, internet access is stable, and smartphone penetration is high. Descriptive data show that most respondents come from digitally connected regions, meaning that technical readiness and supporting facilities are sufficient to encourage adoption. Therefore, infrastructure readiness and perceived resource availability emerge as important determinants of online investment adoption.

Trust is commonly defined as the belief that another party, whether an individual or a system, will act responsibly, reliably, and in accordance with expectations without exploiting one's vulnerabilities. In the context of financial technology, trust is generally regarded as a key factor in reducing uncertainty and perceived risk, thereby encouraging usage intention. Consequently, much of the prior literature positions trust as a primary determinant of fintech adoption.

However, the findings of this study indicate that trust does not have a significant effect on usage intention, meaning that H_5 is not supported. This finding contradicts much of the mainstream literature but is consistent with Fernando et al. (2021) and Johri et al. (2023), who suggest that under certain conditions, the role of trust may diminish. Theoretically, this phenomenon can be explained through the perspective of institutional trust substitution, whereby individual trust in a platform is replaced by trust in formal institutions.

In the Indonesian context, the existence of investment platforms that are registered with and supervised by the Financial Services Authority (OJK) reinforces the legitimacy and perceived security of the system. This condition reduces the role of individual trust in a specific platform as a differentiating factor, because assurance of legality and security is effectively transferred to an external authority. In other words, strong regulation functions as a mechanism of trust substitution, meaning that users no longer need to actively develop trust in each platform.

Furthermore, from the perspective of the evolved Technology Acceptance Model (TAM), modern users, particularly younger digital users, tend to prioritize utilitarian aspects such as per-

ceived ease of use and perceived usefulness over psychological aspects such as trust. This suggests a shift from affective trust toward calculative trust, whereby usage decisions are based more on rational evaluation of system performance than on emotional perceptions of security.

In a relatively mature fintech ecosystem supported by increasingly high levels of digital literacy, users tend to adopt a pragmatic approach. They rely more on concrete indicators such as application features, transaction speed, and user experience than on the more abstract concept of trust. Thus, trust does not disappear entirely, but rather becomes internalized within broader perceptions of technological reliability and regulatory compliance.

The non-significance of the trust variable in this study therefore does not negate the importance of trust in theory; rather, it indicates that its role is contingent on the level of institutional maturity and the characteristics of the technology. This finding extends theoretical understanding by suggesting that in a well-established and well-regulated fintech environment, the role of trust may be partially substituted by institutional mechanisms and users' rational assessment of technology.

Perceived risk in this study refers to users' concerns that adopting new financial technologies, such as online investment platforms, may result in performance-related, financial, or time-related losses. The analysis identified a significant relationship between perceived risk and the intention to use, meaning that H_6 is supported. Based on the results presented in Table 4, performance expectancy exhibited the highest p-value (0.940) among the non-significant variables, while perceived risk showed the strongest significant effect on intention to use, with a β -value of 0.367, indicating its dominant influence within the model.

This finding is consistent with recent studies confirming that perceived risk remains a major determinant of fintech investment adoption. [Wijaya et al. \(2025\)](#) and [Appiah and Agblewornu \(2025\)](#) both emphasize that trust alone is insufficient to overcome high levels of perceived risk; rather, users require demonstrable transparency and regulatory assurance. [Likewise, AbdulKarim and Oladimeji \(2024\)](#), [Mathew et al. \(2025\)](#), and [Nguyen et al. \(2024\)](#) found that security-related risk perception directly affects continued adoption, especially among users with moderate digital literacy. The dominance of perceived risk observed in this study is therefore consistent with both global and local patterns reported in the recent fintech adoption literature.

This finding highlights the central role of perceived risk in shaping investment behaviours. Increased awareness of online financial fraud cases in Indonesia may have heightened users' sensitivity to potential financial losses, privacy violations, and misuse of personal data. Since perceived risk emerges as the strongest predictor ($\beta = 0.367$), this reflects risk-averse tendencies among users. Reducing perceived risk through transparent regulation, security certification, and investor education may therefore constitute an effective strategy for strengthening fintech adoption in emerging markets such as Indonesia.

In summary, the results show that effort expectancy, facilitating conditions, and perceived risk are the main factors shaping individuals' intention to use online investment applications, with perceived risk emerging as the strongest determinant. In practical terms, users are more willing to adopt online investment applications when the platforms are easy to use, supported by reliable digital infrastructure, and perceived as safe from financial and data-related risks. For investors, this implies that selecting intuitive platforms with clear risk-management features may enhance confidence and usage. For regulators, the findings highlight the importance of strengthening investor protection, cybersecurity standards, and transparent regulatory oversight, as reducing perceived risk appears to be the most effective way to encourage broader adoption.

POLICY IMPLICATIONS

The results of this study show that perceived risk plays an important role in shaping individuals' intention to use online investment applications. This finding confirms the need to give serious attention to security and consumer protection within the fintech ecosystem. Fintech companies need to improve information transparency by clearly communicating investment risks, implementing advanced security features such as two-factor authentication, and providing real-time transaction notifications to reduce users' perception of risk and strengthen their confidence in using online investment applications.

In addition, the insignificant influence of trust indicates that a gap still exists between technological advancement and public confidence in online investment platforms. This condition signals the need for policymakers to strengthen public education efforts and digital financial literacy. Fintech companies should integrate educational features into their applications, such as risk simulation tools, clear explanations of potential losses, and step-by-step guidance on safe investment practices, to help users better understand risks and reduce uncertainty when making investment decisions.

The finding that effort expectancy and facilitating conditions have a positive effect on usage intention also conveys an important message for regulators and service providers. Easy access, user-friendly application interfaces, and reliable digital infrastructure support are key factors in expanding the reach of technology-based investment services. Synergy among government, financial institutions, and the education sector can help create a digital investment environment that is more inclusive, secure, and trusted by the public.

Overall, this study provides an empirical foundation for policy formulation oriented toward security, literacy, and ease of access, thereby strengthening public confidence while accelerating digital financial transformation in Indonesia.

5. CONCLUSION

This study shows that online investment behaviours in Indonesia, particularly in the regions of Banten, West Java, and DKI Jakarta, is significantly influenced by effort expectancy, facilitating conditions, and perceived risk, while trust and performance expectancy do not exert significant influence. These results confirm that users place greater emphasis on ease of use, security, and technical support than on reputation or platform performance factors.

From a theoretical perspective, this study reinforces the relevance of the UTAUT framework in the context of fintech adoption and highlights the important role of perceived risk and trust in shaping usage intention. It contributes to the literature by addressing the research gap concerning the role of trust and perceived risk in the adoption of online investment applications in Indonesia, thereby offering new insights that have not been extensively explored in the local context.

From a practical perspective, the findings provide a basis for fintech developers to improve service reliability, security, and transparency, while also encouraging investors to strengthen their financial literacy and vigilance when making online investment decisions. More comprehensive policy recommendations have been outlined in the policy implications section, which emphasizes the need for synergy among regulators, industry actors, and users in strengthening public confidence in the digital investment ecosystem.

This study has several limitations in terms of generalizability, as the sample only includes respondents from Banten, West Java, and DKI Jakarta, regions characterized by relatively high levels of digital penetration. Therefore, the findings do not yet fully represent the conditions of Indonesian society, particularly in regions with lower levels of technology adoption. Further-

more, the use of a survey-based method may have introduced response bias, and the limited range of variables examined may have overlooked other factors that could influence decisions regarding the use of online investment applications.

Accordingly, future research is recommended to broaden the geographical scope, employ more diverse research methods, and incorporate additional variables to enhance both generalizability and analytical depth. Since this study relied solely on survey data, there is also the possibility that some participants may not have provided fully accurate responses or may have misunderstood certain questions. In addition, the research focused only on trust and perceived risk as extensions of the primary framework, potentially overlooking other important variables that may influence individuals' decisions to use online investment applications. Further investigation is therefore needed, particularly regarding findings that did not show significant effects, to better understand the underlying reasons. Future researchers should expand the participant base, diversify data collection methods, and introduce additional explanatory factors to achieve a more comprehensive understanding of what drives the use of online investment applications in Indonesia.

DECLARATIONS

Funding

This research received funding support from the Directorate General of Higher Education, Research and Technology, Higher Education Service Institution, Region IV. Ministry of Education, Culture, Research and Technology, Lecturer Contract Number: 071/D5/SPKB/LPPM/UNPAM/VI/2022.

Ethical Statement

This study received ethical approval from the Institute for Research and Community Service (LPPM) at Universitas Pamulang under approval number 145/D5/SP/LPPM/UNPAM/VI/2022. All procedures involving human participants were conducted in accordance with the ethical standards and guidelines established by the committee. Informed consent was obtained from all participants before data collection, and no personally identifiable information was disclosed in the study.

Conflicts of Interest

The author declares that he has no conflicts of interest in this work.

Data Availability Statement

Data sharing does not apply to this article as no new data were created or analyzed in this study.

Author Contribution Statement

Dr. Masno Marjohan, S.E., M.M: Conceptualization, Validation, Writing – original draft. Writing – review & editing, Visualization, Supervision, Project administration, Funding acquisition.

Dr. Rita Satria, A. Md, Keb. S.E., M.M. assisted with tasks, Methodology, Validation, and writing – original draft. Writing – review & editing,

Dr. Drs. Sunanto, Apt., M.M. assisted in Supervision, Project administration, Supervision, Project administration,

Prama Indra Ishwara, M.M Help for Methodology, Software

REFERENCES

- AbdulKareem, A. K., & Oladimeji, K. A. (2024). Cultivating the digital citizen: trust, digital literacy and e-government adoption. *Transforming Government: People, Process and Policy*, 18(2), 270–286. <https://doi.org/10.1108/TG-11-2023-0196>
- Adil, M., Singh, Y., & Ansari, M. S. (2022). Does financial literacy affect investor's planned behavior as a moderator? *Managerial Finance*, 48(9/10), 1372–1390. <https://doi.org/10.1108/MF-03-2021-0130>
- Adil, M., Singh, Y., Subhan, M., Saleh Al-Faryan, M. A., & Ansari, M. S. (2023). Do trust in financial institution and financial literacy enhances intention to participate in stock market among Indian investors during COVID-19 pandemic? *Cogent Economics & Finance*, 11(1), 2169998. <https://doi.org/10.1080/23322039.2023.2169998>
- Amnas, M. B., Selvam, M., Raja, M., Santhoshkumar, S., & Parayitam, S. (2023). Understanding the determinants of FinTech adoption: Integrating UTAUT2 with trust theoretic model. *Journal of Risk and Financial Management*, 16(12), 505. <https://doi.org/10.3390/jrfm16120505>
- Appiah, T., & Agblewornu, V. V. (2025). The interplay of perceived benefit, perceived risk, and trust in Fintech adoption: Insights from Sub-Saharan Africa. *Heliyon*, 11(2), e41992. <https://doi.org/10.1016/j.heliyon.2025.e41992>
- Ayinaddis, S. G., Taye, B. A., & Yirsaw, B. G. (2023). Examining the effect of electronic banking service quality on customer satisfaction and loyalty: an implication for technological innovation. *Journal of Innovation and Entrepreneurship*, 12(1), 22. <https://doi.org/10.1186/s13731-023-00287-y>
- Bakri, A. A., Hasanah, N., & Lasmiatun, K. M. T. (2024). Financial technology innovation and banking industry transformation: A literature study on financial markets. *Multifinance*, 1(3), 230–238. <https://doi.org/10.61397/mfc.v1i3.112>
- Banthia, D., & Dey, S. K. (2022). Impact of financial knowledge, financial attitude and financial behaviour on financial literacy: Structural equation modeling approach. *Universal Journal of Accounting and Finance*, 10(1), 327–337. <https://doi.org/10.13189/ujaf.2022.100133>
- Bucher-Koenen, T., Alessie, R., Lusardi, A., & van Rooij, M. (2025). Fearless woman: Financial literacy, confidence, and stock market participation. *Management Science*, 71(9), 7414–7430. <https://doi.org/10.1287/mnsc.2023.00425>
- Buraimoh, O. F., Boor, C. H. M., & Aladesusi, G. A. (2023). Examining facilitating condition and social influence as determinants of secondary school teachers' behavioural intention to use mobile technologies for instruction. *Indonesian Journal of Educational Research and Technology*, 3(1), 25–34. <https://doi.org/10.17509/ijert.v3i1.44720>
- Cahyadi, H., Tarigan, R. P., Masman, R. R., Trisnawati, E., & Wijaya, H. (2024). Exploring the dynamics of fintech usage behavior moderated by customer characteristics in Indonesia. *Int J Innov Res Sci Stud*, 7(3), 997–1008. <https://doi.org/10.53894/ijirss.v7i3.2993>
- Chao, C.-M., & Chen, W.-R. (2023). Factors determining behavioural intention of nursing students to use mobile learning: an application and extension of the UTAUT model. *International Journal of Mobile Communications*, 21(4), 472–493. <https://doi.org/10.1504/IJMC.2023.131160>
- Chen, A., Wang, S., Mehta, A. M., Asif, M., Xu, S., & Shahzad, M. F. (2025). FinTech adoption for ESG integration through robo advisors, personalization, and perceived trust. *Scientific Reports*, 15(1), 31125. <https://doi.org/10.1038/s41598-025-17046-6>
- Dimitriadis, K. A., Koursaros, D., & Savva, C. S. (2024). Evaluating the sophisticated digital assets and cryptocurrencies capacities of substituting international currencies in inflationary eras. *International Review of Financial Analysis*, 96, 103693. <https://doi.org/10.1016/j.irfa.2024.103693>
- Dimitriadis, K. A., Koursaros, D., & Savva, C. S. (2025a). Exploring the Dynamic Nexus of Traditional and Digital Assets in Inflationary Times: The Role of Safe Havens, Tech Stocks, and Cryptocurrencies. *Economic Modelling*, 151, 107195. <https://doi.org/10.1016/j.econmod.2025.107195>
- Dimitriadis, K. A., Koursaros, D., & Savva, C. S. (2025b). The influential impacts of international dynamic spillovers in forming investor preferences: a quantile-VAR and GDCC-GARCH perspective. *Applied Economics*, 57(45), 7175–7195. <https://doi.org/10.1080/00036846.2024.2387868>

- Etim, G. S., Ada, J. A., Eyo, I. E., Ndem, S. E., & James, E. E. (2023). Electronic banking and customers' access to banking services in rural settlements. *Resmilitaris*, 13(3), 1161–1177. https://www.researchgate.net/profile/Edim-James/publication/369787098_Electronic_Banking_and_Customers'_Access_to_Banking_Services_in_Rural_Settlements/links/642c7e6620f25554da0bba30/Electronic-Banking-and-Customers-Access-to-Banking-Services-in-Rural-Settlements.pdf
- Fedoroko, I., Bačik, R., & Gavurova, B. (2021). Effort expectancy and social influence factors as main determinants of performance expectancy using electronic banking. *Banks and Bank Systems*, 16(2), 27. [https://doi.org/10.21511/bbs.16\(2\).2021.03](https://doi.org/10.21511/bbs.16(2).2021.03)
- Fernando, E., Angelia, V., & Pradipta, I. A. (2021). A propose model analysis of investor factors on interests and decisions of using online investment applications. *2021 International Conference on Information Management and Technology (ICIMTech)*, 1, 240–244. <https://doi.org/10.1109/icimtech53080.2021.9534951>
- Gallego, J. S. R., & Torres, J. S. (2021). Marketing de influencers en redes sociales. *FACE: Revista de La Facultad de Ciencias Económicas y Empresariales*, 21(2), 46–67. <https://doi.org/10.24054/01204211.V2.N2.2021.1109>
- Gil-Cordero, E., Ledesma-Chaves, P., Arteaga Sánchez, R., & Mariano, A. M. (2024). Crypto-wallets revolution! Key factors driving behavioral intention to adopt the Coinbase Wallet using mixed PLS-SEM/fsQCA methodology in the Spanish environment. *International Journal of Bank Marketing*, 42(3), 536–570. <https://doi.org/10.1108/IJBM-01-2023-0035>
- Gularso, K., & Nicola, N. (2025). Gen Z's Adoption of Investment Platforms: The Roles of Awareness, Literacy, and Risk Perceptions. *Journal of Business & Applied Management*, 18(1), 63–80. <https://journal.ubm.ac.id/index.php/business-applied-management/article/view/8950>
- Gunawan, A. (2023). Sharia Financial Knowledge And Financial Behavior As A Basis For Measuring Financial Literacy. *Quality-Access to Success*, 24(193). <https://doi.org/10.47750/QAS/24.193.11>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage Publishing. <https://link.springer.com/content/pdf/10.1007/978-3-030-80519-7.pdf>
- Hanif, Y., & Lallie, H. S. (2021). Security factors on the intention to use mobile banking applications in the UK older generation (55+). A mixed-method study using modified UTAUT and MTAM-with perceived cyber security, risk, and trust. *Technology in Society*, 67, 101693. <https://doi.org/10.1016/j.techsoc.2021.101693>
- Hutapea, R. S., & Wijaya, E. (2021). Perceived risk, trust, and intention to use fintech service during the covid-19 pandemic. *2nd International Seminar of Science and Applied Technology (ISSAT 2021)*, 656–661. <https://doi.org/10.2991/aer.k.211106.102>
- Ingale, K. K., & Paluri, R. A. (2022). Financial literacy and financial behaviour: A bibliometric analysis. *Review of Behavioral Finance*, 14(1), 130–154. <https://doi.org/10.1108/RBF-06-2020-0141>
- Jeyaraj, A., Dwivedi, Y. K., & Venkatesh, V. (2023). Intention in information systems adoption and use: Current state and research directions. In *International Journal of Information Management* (Vol. 73, p. 102680). Elsevier. <https://doi.org/10.1016/j.ijinfomgt.2023.102680>
- Jiang, H., Siponen, M., & Tsohou, A. (2023). Personal use of technology at work: a literature review and a theoretical model for understanding how it affects employee job performance. *European Journal of Information Systems*, 32(2), 331–345. <https://doi.org/10.1080/0960085X.2021.1963193>
- Johri, A., Wasig, M., Kaur, H., & Asif, M. (2023). Assessment of users' adoption behaviour for stock market investment through online applications. *Heliyon*, 9(9), e19524. <https://doi.org/10.1016/j.heliyon.2023.e19524>
- Kaur, S., & Arora, S. (2021). Role of perceived risk in online banking and its impact on behavioral intention: trust as a moderator. *Journal of Asia Business Studies*, 15(1), 1–30. <https://doi.org/10.1108/JABS-08-2019-0252>
- Khan, I. U., Hameed, Z., Khan, S. N., Khan, S. U., & Khan, M. T. (2022). Exploring the effects of culture on acceptance of online banking: A comparative study of Pakistan and Turkey by using the extended UTAUT model. *Journal of Internet Commerce*, 21(2), 183–216. <https://doi.org/10.1080/15332861.2021.1882749>

- Khan, M. Y., Ab Rahim, R., & Yeng, K. S. K. (2025). ERP Implementation Impacts on SME's Competitive Advantage: An Evidence from Pakistan's SME Sector. *International Journal of Academic Research in Business and Social Sciences*, 15(4). <https://doi.org/10.6007/IJARBSS/v15-i4/25269>
- Khrais, L. T., & Alghamdi, A. M. (2021). The role of mobile application acceptance in shaping e-customer service. *Future Internet*, 13(3), 77. <https://doi.org/10.3390/fi13030077>
- Komariyah, F. (2024). Analysis Of The Effect Of Implementing A Digital Technology-Based Accounting System On The Financial Performance Of Msme's In Indonesia. *TRANSEKONOMIKA: Akuntansi, Bisnis Dan Keuangan*, 4(6), 1220–1226. <https://doi.org/10.55047/transekonomika.v4i6.805>
- Kurniawan, T. A., Primastiwi, A., & Milanda, D. P. (2024). Perceived Risk And Self Efficacy Effect On Digital Gold Applications Usage. *Jurnal Manajemen*, 28(3), 547–566. <https://doi.org/10.24912/jm.v28i3.1982>
- La Barbera, F., & Ajzen, I. (2021). Moderating role of perceived behavioral control in the theory of planned behavior: A preregistered study. *Journal of Theoretical Social Psychology*, 5(1), 35–45. <https://doi.org/10.1002/jts5.83>
- Madan, K., & Yadav, R. (2021). Factors influencing adoption intention of Indian consumers for mobile payment services. *International Journal of Technology Transfer and Commercialisation*, 18(3), 276–289. <https://doi.org/10.1504/IJTTC.2021.118865>
- Marikyan, D., & Papagiannidis, S. (2023). Technology acceptance model. *TheoryHub Book*. Retrieved June, 6, 2023. <https://open.ncl.ac.uk/theory-library/technology-acceptance-model.pdf>
- Mastilo, Z., Barić, F. & Puška, A. (2025). Challenges and Opportunities of Implementing Digital Payment Systems in Southeast European Countries. *Journal of Central Banking Theory and Practice*, 14(2), 5-28. <https://doi.org/10.2478/jcbtp-2025-0011>
- Mathew, B. S., Lasekan, O. A., & Pena, M. G. (2025). Behavioural Determinants of Cyber Hygiene: Rethinking the Role of Education in Digital Trust and Usability. *International Research Journal of Multi-disciplinary Scope (IRJMS)*, 6(4), 726–739. <https://doi.org/10.47857/irjms.2025.v06i04.07251>
- Meyliana, M., & Fernando, E. (2019). The influence of perceived risk and trust in adoption of fintech services in Indonesia. *CommIT (Communication and Information Technology) Journal*, 13(1), 31–37. <https://doi.org/10.21512/commit.v13i1.5708>
- Nga, L. P., & Tam, P. T. (2026). Key Policy Recommendations for Enhancing the Digital Economy in Vietnam. *Economics - Innovative and Economic Research Journal*, 14(1), 441-455. <https://doi.org/10.2478/eoik-2026-0021>
- Nguyen, T. T., Tran, T. N. H., Do, T. H. M., Dinh, T. K. L., Nguyen, T. U. N., & Dang, T. M. K. (2024). Digital literacy, online security behaviors and E-payment intention. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(2), 100292. <https://doi.org/10.1016/j.joitmc.2024.100292>
- Nisaâ, M. (2022). The Application of Error Correction Model (ECM) in Assessing the Impact of Exchange, Interest, and Inflation Rates on the Gross Domestic Product of Indonesia. *Muslim Business and Economic Review*, 1(1), 109–130. <https://doi.org/10.56529/mber.v1i1.31>
- Ozuem, W., Willis, M., Howell, K., Lancaster, G., & Ng, R. (2021). Determinants of online brand communities' and millennials' characteristics: A social influence perspective. *Psychology and Marketing*, 38(5), 794-818. <https://doi.org/10.1002/mar.21470>
- Purnama, E. S., Suryadi, N., & Andarwati, A. (2023). The influence of perceived risk and perceived benefits on continuance intention to adopt Fintech P2P lending mediated by trust in Indonesia. *Journal of Business and Management Review*, 4(10), 754–770. <https://doi.org/10.47153/jbmr410.8522023>
- Purohit, S., Arora, R., & Paul, J. (2022). The bright side of online consumer behavior: Continuance intention for mobile payments. *Journal of Consumer Behaviour*, 21(3), 523–542. <https://doi.org/10.1002/cb.2017>
- Rahadi, R. A., Dewi, E. K., Damayanti, S. M., Afgani, K. F., Murtaqi, I., & Rahmawati, D. (2021). Adoption analysis of online mutual fund investment platform for millennials in Indonesia. *Review of Integrative Business and Economics Research*, 10, 74–81. http://sibresearch.org/uploads/3/4/0/9/34097180/riber_10-s1_08_u20-052_74-81.pdf

- Reyna, J. M. S. M., & Encalada, J. A. D. (2022). Composition of Corporate Governance Mechanism and Performance in Emerging Economies: The Mexican Case. *Sinapsis*, 14(1), 50–73. <https://dialnet.unirioja.es/descarga/articulo/8468742.pdf>
- Saf, Z., & Hachimi, H. (2021). Acceptance of public procurement digitalization using the TAM Technology Acceptance Model (Davis, 1989). *International Journal On Optimization and Applications*, 5. <https://www.ijoa-journal.com/files/journals/1/issues/IJOA VOL 01 ISSUE 03.pdf#page=9>
- Sari, R. K., Hartono, A., & Susanto, R. (2023). Modifying the Theory of Reasoned Action to Determine Online Mutual Fund Investor Behavior. *E3S Web of Conferences*, 426, 1085. <https://doi.org/10.1051/e3sconf/202342601085>
- Shaikh, A. A., Alamoudi, H., Alharthi, M., & Glavee-Geo, R. (2023). Advances in mobile financial services: a review of the literature and future research directions. *International Journal of Bank Marketing*, 41(1), 1–33. <https://doi.org/10.1108/IJBM-06-2021-0230>
- Shih, H.-M., Chen, B. H., Chen, M.-H., Wang, C.-H., & Wang, L.-F. (2022). A study of the financial behavior based on the theory of planned behavior. *International Journal of Marketing Studies*, 14(2), 1–12. <https://doi.org/10.5539/ijms.v14n2p1>
- Singh, S., & Chakraborty, A. (2024). Rummaging the Effect of Social Media Interactions on Financial Decisions-A Critical Analysis. *International Management Review*, 20(1), 75–82. <https://americanscholarspress.us/journals/IMR/pdf/IMR-1-2024/IMRv20n1-art7.pdf>
- Suryono, R. R., Budi, I., & Purwandari, B. (2020). Challenges and trends of financial technology (Fintech): a systematic literature review. *Information*, 11(12), 590. <https://doi.org/10.3390/info11120590>
- Vasumathi, P., & Arun, C. J. (2021). Young farmers' intention to use social media in marketing agro products: A conceptual framework. *Indian Journal of Economics and Business*, 20(2), 359–370. <http://www.ashwinanokha.com/resources/ijeb v20-2-24. ijeb.pdf>
- Wibowo, E., & Widayat, B. C. (2023). Financial Performance Of Culinary MSmes In Jebres District, Surakarta City Based On Financial Literacy, Financial Inclusion, And Financial Technology. *Marginal Journal of Management Accounting General Finance and International Economic*, 2(2), 607–617. <https://doi.org/10.55047/marginal.v2i2.656>
- Wijaya, H., Firdausy, C. M., & Widjaja, I. (2025). Investigating how perceived benefit, ease of use, and risk affect fintech usage adoption. *International Journal of Application on Economics and Business*, 3(1), 480–494. <https://doi.org/10.24912/ijaeb.v3i1.480-494>
- Wu, Z., & Liu, Y. (2023). Exploring country differences in the adoption of mobile payment service: the surprising robustness of the UTAUT2 model. *International Journal of Bank Marketing*, 41(2), 237–268. <https://doi.org/10.1108/IJBM-02-2022-0052>
- Xie, J., Ye, L., Huang, W., & Ye, M. (2021). Understanding FinTech platform adoption: impacts of perceived value and perceived risk. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(5), 1893–1911. <https://doi.org/10.3390/jtaer16050106>
- Yusfiarto, R., Nugraha, S. S., Mutmainah, L., Berakon, I., Sunarsih, S., & Nurdany, A. (2023). Examining Islamic capital market adoption from a socio-psychological perspective and Islamic financial literacy. *Journal of Islamic Accounting and Business Research*, 14(4), 574–594. <https://doi.org/10.1108/JIABR-02-2022-0037>
- Zhu, J., & Wang, M. (2022). Analyzing the effect of people utilizing mobile technology to make banking services more accessible. *Frontiers in Public Health*, 10, 879342. <https://doi.org/10.3389/fpubh.2022.879342>