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The Effect Of Financial Technology Usage, Risk Tolerance, And Financial Literacy On Generation Z's Investment Decisions

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ABSTRACT

This study aims to analyze the influence of financial technology, risk tolerance, and financial literacy on investment decisions among Generation Z. The background of this research is based on the growing interest of Generation Z in investment activities, which are largely facilitated through digital platforms, yet often face challenges in risk management and financial literacy. This research employed a quantitative method with purposive sampling, involving 145 respondents from Generation Z. Data analysis was carried out using SmartPLS 4.0 to examine the relationships between the variables. The results indicate that financial technology, risk tolerance, and financial literacy have a positive and significant effect on investment decisions among Generation Z. This study is expected to serve as a reference for young investors, fintech providers, and related stakeholders in improving the quality of investment decisions

Keywords : Financial Technology; Risk Tolerance; Financial Literacy; Investment Decisions.

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INTRODUCTION

The development of digital technology has brought significant changes to financial services. Generation Z, born between 1997 and 2005 (Stillman & Stillman, 2017), grew up in the internet era and is therefore highly familiar with digital innovations, including financial technology (fintech). The public's demand for convenient financial services has encouraged businesses to shift from conventional systems to digital platforms (Siswanti, 2020). Investment is the process of allocating funds to gain future returns. However, the growth of investors in Indonesia has slowed since 2021.

Table 1. Investor Growth Rate

SID	Investor Growth					
	2021	2022	June 2023	July 2023	August 2023	2023, dst
Stocks and Other Securities	103,60%	28,64%	1,19%	1,58%	1,22%	11,46%
Capital Market	92,99%	37,68%	1,50%	1,71%	1,41%	12,32%
Mutual Funds	115,41%	40,41%	1,56%	1,78%	1,48%	13,00%
SBN	32,75%	36,05%	0,91%	2,00%	1,50%	13,42%

Source: Indonesian Central Securities Depository in 2023

Based on Table 1 mutual funds remain consistently attractive due to their accessibility and risk diversification, while stocks and the capital market have tended to decelerate. From an age perspective :

Table 2. Investor Age at the Indonesia Stock Exchange

Age	July 2023	August 2023
≤ 30 Years	57,26%	57,04%
31-40 Years	23,18%	23,27%
41 – 50 Years	11,29%	11,36%
51 – 60 Years	5,41%	5,44%
≥ 60 Years	2,87%	2,88%

Source: Indonesian Central Securities Depository in 2023

Based on Table 2 investors aged ≤30 years accounted for 57.04% as of August 2023, highlighting the significant role of Generation Z in Indonesia's capital market.

The convenience of fintech-based investment allows Generation Z to access various instruments through applications alone. However, not all investment decisions are made with careful planning. Many are influenced by trends and social media, which can potentially lead to speculative behavior. An OJK survey noted that financial inclusion has increased, but financial literacy among the younger generation remains relatively low.

Previous studies have shown mixed results. Financial technology influences investment decisions (Danang Mahardhika & Asandimitra, 2023), yet other research found the opposite (Desy Geriadi, 2023). Risk tolerance is related to one's willingness to face risks (Adielyani & Mawardi, 2020); some studies found a significant effect (Sani & Santi, 2024), while others did not (Mariati, 2024). Financial literacy is also important (Ningtyas, 2019), with research results varying (Dewi Purnamasari, 2023; Lestaria et al., 2024).

A research gap still exists, as most studies have positioned fintech as a moderating variable. Direct research that examines the influence of financial technology, risk tolerance, and financial literacy on the investment decisions of Generation Z remains limited, particularly in the Greater Jakarta area (Jabodetabek). Therefore, this study is essential to better understand Gen Z's investment behavior while supporting the development of effective education and regulatory strategies.

LITERATURE REVIEW

Financial Technology

Rahman & Ermawati (2019) state that financial technology is the integration of financial services and technology, transforming conventional transactions into faster and more practical processes. Ningtyas & Siskawati (2022) define the dimensions of fintech as perceived usefulness, ease of use, service credibility, social influence, and self-efficacy.

Risk Tolerance

Danang Mahardhika & Asandimitra (2023) define risk tolerance as an individual's ability to accept investment risks, where higher tolerance increases the likelihood of investing. Anggriani (2022) emphasizes that the indicators of risk tolerance include risk-taking behavior, aggressive orientation, and conservative orientation.

Financial Literacy

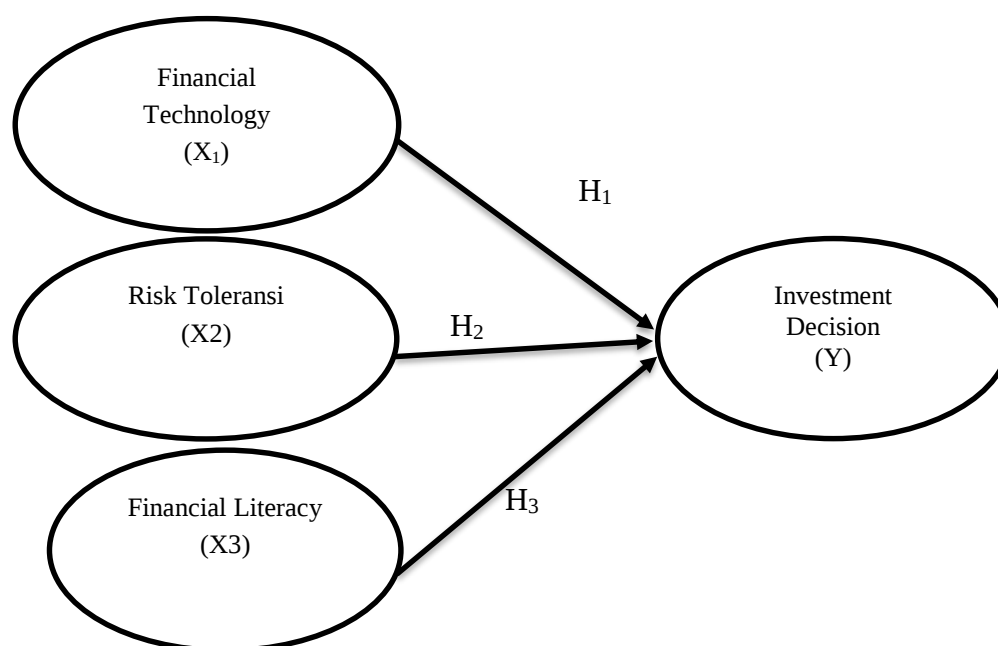
Suyono et al. (2023) state that financial literacy provides long-term benefits as it helps individuals enhance the use of financial products and achieve future well-being. According to SaThierbach et al. (2015), its dimensions include basic financial knowledge, savings and loans, risk management, and investment.

Investment Decision

Novieanggie & Asandimitra (2019) state that an investment decision is a choice in allocating assets to gain future returns. Putri & Ibrahim (2017) add that an investment decision means committing capital in the present for future outcomes. Khairiyati & Krisnawati (2019) mention that the indicators of investment decisions include security, risk, return, time value of money, and liquidity.

Research Framework

Figure 1. Framework



METHODE

Time and Place of Research

This research was conducted from October 2024 to July 2025 in the Greater Jakarta area (Jabodetabek).

Research Design

This study employs a quantitative method to examine the influence of financial technology, risk tolerance, and financial literacy on Generation Z's investment decisions. The data were analyzed using SmartPLS.

Research Population

The population of this research is Generation Z residing in the Greater Jakarta area, totaling approximately 11.2 million people (BPS, 2024). The sample size was determined using the formula by Hair et al. (2019), namely the number of indicators $(29) \times 5$, resulting in a minimum of 145 respondents. The sampling technique applied was purposive sampling with the following criteria: Generation Z (1995–2010), residing in the Greater Jakarta area, having an income, and possessing knowledge of investment and mutual funds.

Data Analysis Method

Primary data were obtained through an online questionnaire using Google Forms. According to Sugiyono (2021) and Sekaran & Bougie (2017), questionnaires are an efficient method of data collection. The measurement scale was divided into three categories: poor (1.00–2.33), good (2.34–3.66), and very good (3.67–5.00). Data analysis was conducted using Partial Least Squares (PLS) with SmartPLS 4.0, which, according to Ghazali (2006), is a variance-based method for testing relationships among variables.

RESULT AND DISCUSSION

Data Quality Test Results

1. Outer Model

a. Convergent Validity

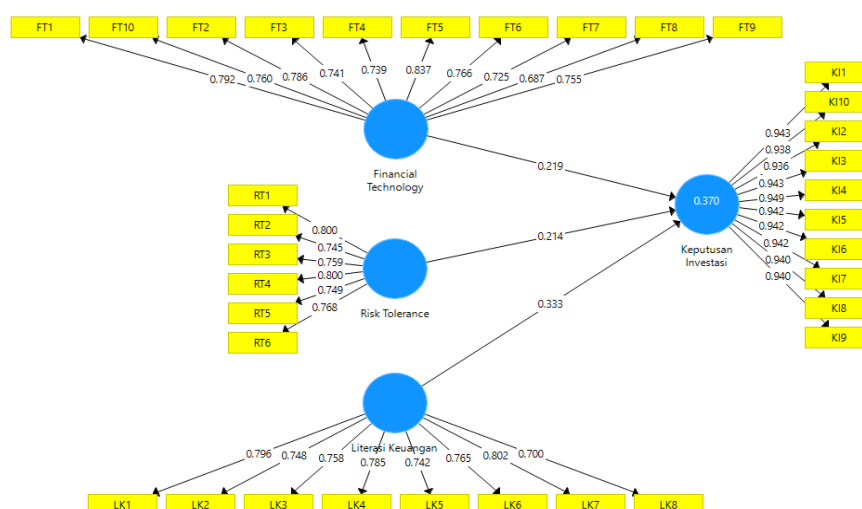
Convergent validity was assessed based on the correlation between indicators and constructs using PLS. An indicator is considered valid if the loading factor is greater than 0.7, although in some scale research values of 0.5–0.6 are still acceptable. In this study, a threshold of >0.7 was used, as shown in the tables and figures of the analysis results.

Table 3. Convergent Validity Test Results

Variable	Indicator	Loading Factor	Description
Financial Technology	FT.1	0.792	Valid
	FT.2	0.760	Valid
	FT.3	0.786	Valid
	FT.4	0.741	Valid
	FT.5	0.739	Valid
	FT.6	0.837	Valid
Financial Technology	FT.7	0.766	Valid
	FT.8	0.725	Valid
	FT.9	0.687	Valid
	FT.10	0.755	Valid
Risk Tolerance	RT.1	0.800	Valid
	RT.2	0.745	Valid
	RT.3	0.759	Valid
	RT.4	0.800	Valid
	RT.5	0.749	Valid
	RT.6	0.768	Valid
Literasi Keuangan	LK.1	0.796	Valid
	LK.2	0.748	Valid
	LK.3	0.758	Valid
	LK.4	0.785	Valid
	LK.5	0.742	Valid
	LK.6	0.765	Valid
	LK.7	0.802	Valid
	LK.8	0.700	Valid
Keputusan Investasi	KI.1	0.943	Valid
	KI.2	0.938	Valid
	KI.3	0.936	Valid
	KI.4	0.943	Valid
	KI.5	0.949	Valid
	KI.6	0.942	Valid
	KI.7	0.942	Valid
	KI.8	0.942	Valid
	KI.9	0.940	Valid
	KI.10	0.940	Valid

Source: Output PLS, 2025

Figure 1. PLS Algorithm Results



Source: Output PLS, 2025

Based on Table 3 and Figure 1, most indicators have a loading factor >0.7 and are considered valid. Some indicators in the 0.6 range were retained because the AVE for each construct was >0.5 , meaning all indicators meet the criteria for convergent validity.

Table 4. Average Variance Extracted (AVE) Results

Variable	Average Variance Extracted (AVE)	Description
Financial Technology	0.577	Valid
Risk Tolerance	0.593	Valid
Financial Literacy	0.581	Valid
Investment Decision	0.887	Valid

Source: Output PLS, 2025

b. Discriminant Validity

According to Hair et al. (2021), discriminant validity was tested through cross-loading. An indicator is considered valid if its loading factor on its own construct is higher than on other constructs, indicating that the latent construct predicts its indicator better than indicators of other constructs.

Table 5. Discriminant Validity Test Results (Cross-Loadings)

	Financial Technology	Risk Tolerance	Financial Literacy	Investment Decision
FT.1	0.792	0.401	0.375	0.418
FT.2	0.786	0.474	0.439	0.374
FT.3	0.741	0.344	0.455	0.346
FT.4	0.739	0.383	0.557	0.423
FT.5	0.837	0.381	0.584	0.520
FT.6	0.766	0.379	0.592	0.417
FT.7	0.725	0.098	0.244	0.291
FT.8	0.687	0.102	0.243	0.274
FT.9	0.755	0.201	0.275	0.299
FT.10	0.760	0.179	0.269	0.240
RT.1	0.098	0.800	0.110	0.285

	Financial Technology	Risk Tolerance	Financial Literacy	Investment Decision
RT.2	0.180	0.745	0.070	0.244
RT.3	0.187	0.759	0.131	0.224
RT.4	0.286	0.800	0.122	0.269
RT.5	0.664	0.749	0.601	0.466
RT.6	0.216	0.768	0.085	0.257
LK.1	0.482	0.100	0.796	0.412
LK.2	0.236	0.144	0.748	0.394
LK.3	0.736	0.595	0.758	0.446
	Financial Technology	Risk Tolerance	Financial Literacy	Investment Decision
LK.4	0.279	0.392	0.785	0.398
LK.5	0.290	0.254	0.742	0.402
LK.6	0.535	0.121	0.765	0.423
LK.7	0.448	0.151	0.802	0.353
LK.8	0.369	0.048	0.700	0.333
KI.1	0.499	0.391	0.498	0.943
KI.2	0.439	0.342	0.502	0.936
KI.3	0.501	0.345	0.481	0.943
KI.4	0.477	0.393	0.506	0.949
KI.5	0.455	0.388	0.499	0.942
KI.6	0.448	0.414	0.484	0.942
KI.7	0.467	0.434	0.502	0.942
KI.8	0.466	0.349	0.494	0.940
KI.9	0.470	0.414	0.463	0.940
KI.10	0.436	0.364	0.484	0.938

Source: Output PLS, 2025

Based on Table 5, each indicator has the highest loading on its own construct compared to other constructs, indicating that the discriminant validity of this study has been satisfied.

Table 6. Fornell-Larcker Criterion Results

	Financial Technology	Risk Tolerance	Financial Literacy	Investment Decision
Financial Technology	0.760			
Risk Tolerance	0.414	0.770		
Financial Literacy	0.562	0.308	0.762	
Investment Decision	0.495	0.408	0.522	0.942

Source: Output PLS, 2025

Based on Table 6, the discriminant validity test using the Fornell-Larcker criterion shows that the square root of the AVE for each construct is higher than its correlations with other constructs. This aligns with the cross-loading results, indicating that all constructs meet the discriminant validity criteria.

c. Reliability Test

Reliability was tested using composite reliability and Cronbach's alpha to assess the consistency of the instrument. If both values are ≥ 0.7 , the construct is considered reliable and the questionnaire consistent (Ghozali, 2018), as shown in Table 7 :

Table 7. Reliability Test Results (Composite Reliability and Cronbach's Alpha)

Variable	Cronbach's Alpha	Composite Reliability	Description
Financial Technology	0.919	0.932	Reliabel
Risk Tolerance	0.867	0.897	Reliabel
Financial Literacy	0.897	0.917	Reliabel
Investment Decision	0.986	0.987	Reliabel

Source: Output PLS, 2025

Based on Table 7, all latent variables have composite reliability and Cronbach's alpha ≥ 0.70 , indicating that all latent variables are reliable.

2. Inner Model

a. R-Square

Table 8 . R-Square Test Results

Dependent Variable	R Square	R Square Adjusted
Investment Decision	0.370	0.356

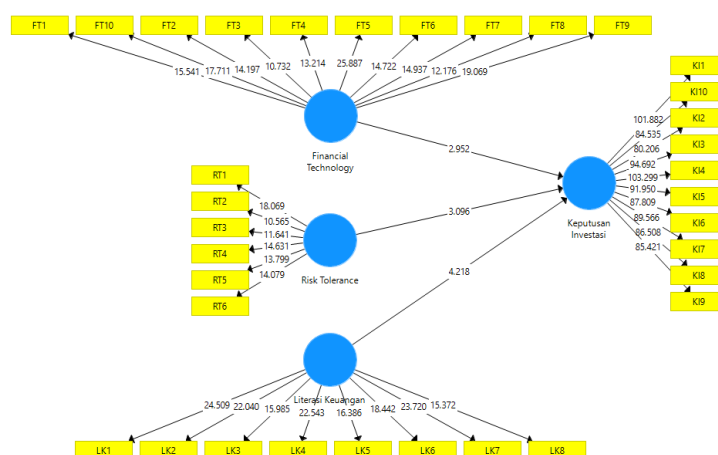
Source: Output PLS, 2025

Based on Table 8, the R-Square for Investment Decision is 0.370 (Adjusted 0.356), indicating that Financial Technology, Risk Tolerance, and Financial Literacy explain 37% of the variability in Investment Decision. This value is considered moderate, suggesting that the model is fairly adequate.

b. Hypothesis Testing Results (Path Coefficient Estimates)

The estimated path coefficients in the structural model are considered significant if they pass the bootstrapping test. Significance is determined by the parameter coefficients and T-Statistics, where at a 5% alpha level, a hypothesis is deemed significant if the T-Statistic > 1.96 .

Figure 2. PLS Bootstrapping Test Results (Inner Model Test)



Source: Output PLS, 2025

Table 9. Path Coefficient Test Results

	Original Sample (O)	Std. Deviasi	T Statistics (O/STDEV)	P Values	Description
Financial Technology → Investment Decision	0.219	0.074	2.952	0.003	Positive - Significant
Risk Tolerance → Investment Decision	0.214	0.069	3.096	0.002	Positive - Significant
Financial Literacy → Investment Decision	0.333	0.079	4.218	0.000	Positive - Significant

Source: Output PLS, 2025

Based on Table 9, Financial Technology ($\beta = 0.219$, $p = 0.003$), Risk Tolerance ($\beta = 0.214$, $p = 0.002$), and Financial Literacy ($\beta = 0.333$, $p = 0.000$) all have a positive and significant effect on Investment Decision, with Financial Literacy having the greatest influence.

Discussion

1. The Effect of Financial Technology on Investment Decision

Based on the results of the first hypothesis test (H1), financial technology has a positive and significant effect on investment decisions, thus H1 is accepted. This indicates that the use of fintech supports investors in making more rational investment decisions. Fintech facilitates access to information, provides financial education, and helps users understand products and investment risks, thereby reducing uncertainty and cognitive biases such as overconfidence and loss aversion. These results are in line with Nami et al. (2022), who stated that financial technology has a positive and significant effect on investment decisions because it increases transaction efficiency, expands product choices, and supports better decision-making for investors.

2. The Effect of Risk Tolerance on Investment Decision

Based on the results of the second hypothesis test (H2), risk tolerance has a positive and significant effect on investment decisions, thus H2 is accepted. Investors with high risk tolerance tend to allocate more funds to high-risk assets to achieve greater potential returns, whereas investors with low risk tolerance prefer safer assets such as bank deposits. These findings align with Lathifatunissa and Wahyuni (2021), who indicated that risk tolerance reflects an individual's willingness and ability to accept potential investment losses. Investors with high tolerance are more willing to take risks to achieve high returns, while those with low tolerance tend to choose safer investments.

3. The Effect of Financial Literacy on Investment Decision

Based on the results of the third hypothesis test (H3), financial literacy has a positive and significant effect on investment decisions, thus H3 is accepted. The higher an individual's financial literacy, the better their ability to manage finances and make appropriate investment decisions. These findings are in line with Dewi Purnamasari (2023), who stated that financial literacy equips individuals with the knowledge and skills to make rational investment decisions, understand risks and potential returns, and thereby contribute to improving financial well-being.

CONCLUSIONS AND SUGGESTIONS

Conclusions

1. Financial Technology has a positive and significant effect on investment decisions, as it facilitates access to information, transparency, and efficiency.
2. Risk Tolerance has a positive and significant effect; investors with high risk tolerance tend to make bolder investment decisions.
3. Financial Literacy has a positive and significant effect; the higher the literacy, the better the ability to manage finances and make appropriate investment decisions.

Advice

For Generation Z:

1. Maximize fintech features such as portfolio analysis, price notifications, and investment planning.
2. Diversify portfolios with both high- and low-risk instruments to leverage risk-taking ability.
3. Improve financial literacy through courses, webinars, books, and long-term investment simulations.

For Fintech Providers / Financial Institutions:

1. Develop user-friendly applications with interactive investment education.
2. Tailor investment products to match the risk profiles of Generation Z.
3. Add financial education content within the applications.

For Regulators (OJK / Government):

1. Strengthen regulations on digital transactions and increase trust among Generation Z.
2. Promote financial literacy programs for the young generation, especially regarding risk management.

For Academics / Future Researchers:

1. Include additional variables (psychological factors, social media, lifestyle) to enrich research.
2. Use alternative analytical methods to produce more comprehensive results.
3. Expand sample size and research areas to make findings more generalizable.

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