

Financial Behavior, Income, and Self-Control in Investment Decisions: The Moderating Role of Financial Literacy

Sarah Tresia H. Selan^{1*}, Paulina Yuritha Amtiran², I Komang Arthana³

^{1,2,3}Faculty of Economics and Business, University of Nusa Cendana, Indonesia

aratheresia11@gmail.com^{1*},

Abstract

This study aimed to examine the effects of financial behavior, income, and self-control on investment decisions, with financial literacy as a moderating variable among the workforce in Kupang City. This study employed a quantitative approach using primary data collected through questionnaires from 400 respondents selected through purposive sampling. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings revealed that financial behavior, income, and self-control positively and significantly influenced investment decisions. Financial literacy had a significant direct effect but did not moderate the relationship between the independent variables and investment decisions. This study concluded that improving investment decisions requires not only enhancing financial literacy but also strengthening financial discipline, responsible financial behavior, and self-control. This study was limited to the workforce in Kupang City, which may restrict the generalizability of the findings. Additionally, the use of self-reported data may introduce subjective bias. This study contributes to financial behavior literature by integrating economic, behavioral, and psychological perspectives in explaining investment decisions and highlighting the importance of behavioral factors in financial education programs.

Keywords: Behavioral Finance, Financial Behavior, Financial Literacy, Income, Investment Decisions, Self-Control

1. INTRODUCTION

Investment decision-making represents a critical financial activity that significantly influences individual well-being in the long term. In the context of modern economic systems, individuals are increasingly required to take an active role in managing their financial resources due to rising living costs, economic uncertainty, and the gradual shift from traditional social security systems toward more self-reliant financial planning. As a result, investment has become not only a tool for wealth accumulation but also a necessity for ensuring long-term financial stability and resilience ([Girsang & Purnama, 2025](#)). However, making sound investment decisions is not solely determined by the availability of financial resources, it is also shaped by individuals' financial behavior, income level, and their ability to control impulsive consumption ([Abidin et al., 2024](#); [Apriadi et al., 2025](#); [Rahman & Yulian, 2022](#)).

The rapid development of financial markets, particularly driven by financial technology (fintech), has transformed the accessibility of investment opportunities. Individuals can now easily access various financial instruments such as stocks, mutual funds, and digital assets through online platforms. In Indonesia, investment activities have shown a growing trend, particularly with the expansion of digital financial instruments. Despite this growth, the increase in the number of investors is not always accompanied by rational and well-informed decision-making. Many individuals still face challenges in evaluating risks and returns, which may lead to speculative and suboptimal investment choices. In many cases, investment decisions are influenced by short-term trends, social influence, or limited understanding of financial products rather than careful financial planning. This issue becomes more pronounced in regions outside major economic centers, where socio-economic characteristics and access to financial knowledge may differ ([Altundal et al., 2024](#); [Apriadi et al., 2025](#)).

In such contexts, disparities in education, income, and access to financial information can further widen the gap between investment participation and investment quality. Kupang City, as the capital of East Nusa Tenggara Province, presents a unique context characterized by a service- and trade-oriented economy with diverse income levels among its workforce. These variations in income influence individuals' capacity to allocate funds for investment. These conditions create differences in

financial capacity and investment readiness among individuals, making Kupang City an important setting for examining financial decision-making behavior. While higher income provides greater financial flexibility, it does not automatically guarantee better investment decisions without proper financial management practices ([Namsa et al., 2025](#); [Silfiani & Dahlan, 2023](#)).

This indicates that financial capacity must be supported by appropriate financial behavior in order to be effectively translated into optimal investment decisions. Beyond income, financial behavior plays a crucial role in shaping investment decisions. Individuals who demonstrate disciplined financial management such as budgeting, controlling expenses, and saving are more likely to make structured and rational investment choices ([Rahman & Yulian, 2022](#); [Silfiani & Dahlan, 2023](#)). Financial behavior reflects how individuals allocate, monitor, and evaluate their financial resources in everyday life, serving as a practical foundation for investment activities. In addition, self-control emerges as an important psychological factor, as it reflects the ability to resist short-term consumption in favor of long-term financial goals. Individuals with strong self-control tend to prioritize future benefits over immediate gratification, thereby increasing their likelihood of engaging in investment activities ([Mufassiro et al., 2025](#)).

Conversely, individuals with low self-control are more prone to impulsive spending, which can reduce their financial capacity to invest and hinder long-term financial planning. Financial literacy is often considered a key factor that can influence how individuals translate their financial capacity and behavior into investment decisions. It encompasses the knowledge and skills required to understand financial products, evaluate risks, and make informed financial choices. Individuals with higher financial literacy are generally expected to demonstrate more rational and informed financial decision-making. However, the relationship between financial literacy and actual financial behavior is not always linear. Nevertheless, the extent to which financial literacy strengthens or weakens the relationship between financial behavior, income, self-control, and investment decisions remains an open question due to inconsistent findings in previous studies ([Ariestiani & Putri, 2025](#); [Shintawati & Budidarma, 2023](#); [Yeni et al., 2024](#)).

Although previous studies have explored various determinants of investment decisions, most research has examined financial literacy as a direct influencing factor rather than investigating its role as a moderating variable. Moreover, limited studies have integrated financial behavior, income, and self-control within a single framework to explain investment decision-making. This gap indicates the need for further empirical investigation that combines economic, behavioral, and psychological perspectives, particularly in regions with distinct socio-economic characteristics such as Kupang City ([Ariestiani & Putri, 2025](#); [Fitriaty, 2023](#)).

Therefore, this study aims to analyze the effects of financial behavior, income, and self-control on investment decisions, with financial literacy as a moderating variable among the workforce in Kupang City. By integrating economic, behavioral, and psychological perspectives, this study seeks to provide a more comprehensive understanding of investment decision-making. This study is expected to provide both theoretical insights and practical implications for improving financial decision-making and designing more effective financial literacy programs ([Mufassiro et al., 2025](#); [Rahman & Yulian, 2022](#); [Silfiani & Dahlan, 2023](#); [Yeni et al., 2024](#)). In addition, the findings are expected to contribute to the development of financial education strategies that not only enhance knowledge but also promote disciplined financial behavior and stronger self-control among individuals.

2. LITERATURE REVIEW

2.1 Theory of Planned Behavior

The theory of planned behavior explains that individual behavior is primarily driven by intention, which is shaped by attitudes, subjective norms, and perceived behavioral control. In the context of investment, attitudes reflect individuals' evaluations of the benefits of investing, subjective norms relate to social influences, and perceived behavioral control represents individuals' confidence in their ability to manage financial resources and make investment decisions ([Hidayati & Destiana, 2023](#); [Putri et al., 2025](#)). This theory suggests that investment decisions are not merely the result of

rational financial calculations, but also involve psychological readiness and social pressures. Individuals may have positive attitudes toward investment, but without sufficient perceived control or supportive social environments, their intention may not translate into actual behavior.

Furthermore, the theory of planned behavior provides a comprehensive framework to understand how cognitive, social, and behavioral factors interact in shaping financial decisions. In this study, financial behavior, income, and self-control can be linked to the formation of behavioral intentions, while financial literacy strengthens individuals' perceived ability to execute investment decisions. This theory is highly relevant to investment decision-making, as investing is a planned behavior influenced not only by rational evaluation but also by psychological and social factors. Financial literacy and self-control can be interpreted as components of perceived behavioral control, as both reflect individuals' capability to manage financial decisions effectively ([Bai, 2023](#)).

2.2 Investment Decision

Investment decision refers to the process of allocating financial resources into various alternatives by considering risk and expected return to achieve future financial goals. This decision is influenced by both internal factors, such as knowledge, attitudes, and financial behavior, and external factors, including economic conditions and market dynamics ([Haidari, 2023](#); [Hidayat & Hartono, 2022](#)). Investment decision-making is inherently complex, as it requires individuals to evaluate uncertain outcomes, balance risk and return, and align their choices with long-term financial objectives ([Budiman & Vivien, 2026](#)). The presence of uncertainty and information asymmetry often makes individuals rely not only on rational analysis but also on heuristics and behavioral tendencies.

Key aspects of investment decisions include the selection of investment instruments, investment time horizon, expected returns, and portfolio diversification. These aspects reflect how individuals evaluate opportunities and manage financial risks in achieving long-term financial stability ([Qian, 2023](#)). In addition, investment decisions are dynamic and may evolve over time depending on changes in income, financial knowledge, market conditions, and personal circumstances. Therefore, understanding the determinants of investment decisions requires a multidimensional approach that integrates economic, behavioral, and psychological perspectives.

2.3 Financial Behavior

Financial behavior represents how individuals plan, manage, and utilize their financial resources in everyday life. It reflects actual actions such as budgeting, controlling expenses, saving, and managing debt. Individuals with sound financial behavior tend to demonstrate discipline in financial planning and a long-term orientation toward financial goals ([Pham, & Le, 2023](#); [Wahyuni, Radiman, & Kinanti, 2023](#)). Financial behavior is often considered a bridge between financial knowledge and financial outcomes. Even when individuals possess adequate financial literacy, poor financial behavior can lead to ineffective resource allocation and suboptimal financial decisions ([Zima, Dharma, & Susilowati, 2025](#); [Salim, Reniati, & Sumiyati, 2025](#)).

Effective financial behavior enables individuals to allocate resources efficiently, thereby increasing their ability to engage in investment activities. In this study, financial behavior is reflected through indicators such as budgeting practices, expenditure discipline, saving habits, debt management, and financial record-keeping ([Prakoso & Apriliani, 2024](#)). Previous studies have highlighted that financial behavior is strongly associated with investment participation and financial well-being. However, the strength of this relationship may vary depending on individual characteristics, such as income level and psychological traits, indicating the need for a more integrated analytical framework.

2.4 Income

Income represents the total financial resources earned by individuals from various economic activities, including wages, salaries, business income, and returns on investments. It reflects individuals' economic capacity and plays a fundamental role in financial decision-making ([Putri et al., 2025](#)). Income is often regarded as a prerequisite for investment, as it determines the availability of surplus funds that can be allocated to financial assets. Without sufficient income, individuals are more

likely to prioritize consumption over investment. Higher and more stable income levels provide greater financial flexibility, allowing individuals to meet their basic needs while allocating surplus funds for investment. Conversely, limited income may restrict individuals' ability to invest, as financial priorities are often directed toward immediate consumption needs ([He & Yoo, 2024](#)). However, empirical evidence suggests that higher income does not always lead to better financial outcomes. Individuals with high income but poor financial management may still face financial difficulties and low investment participation. This indicates that income must be complemented by sound financial behavior and self-control to produce optimal financial decisions.

2.5 Self-Control

Self-control refers to an individual's ability to regulate emotions, thoughts, and behaviors in alignment with long-term goals. In financial contexts, self-control plays a crucial role in resisting impulsive consumption and maintaining consistency in financial planning ([Hernandez-Perez & Rambaud, 2025](#)). Self-control is closely related to behavioral finance theories, which emphasize that individuals are not always rational in making financial decisions. Emotional impulses, habits, and cognitive biases often influence financial behavior, making self-control an essential factor in achieving financial discipline.

Individuals with strong self-control are more likely to delay gratification and prioritize future benefits over immediate desires. This ability supports better financial decision-making, particularly in investment activities, where long-term commitment and discipline are essential. Indicators of self-control include the ability to avoid impulsive purchases, think rationally in financial decisions, and act consistently with long-term financial plans ([Kasoga & Tegambwage, 2022](#)). Conversely, low self-control may lead to impulsive financial decisions, excessive consumption, and inadequate savings, ultimately reducing the capacity for investment. Therefore, self-control is considered a key psychological determinant of financial behavior and investment decision-making.

2.6 Financial Literacy

Financial literacy encompasses the knowledge, skills, and confidence required to understand financial concepts and make informed financial decisions. It enables individuals to evaluate financial products, assess risks, and optimize financial outcomes ([Mishra & Malik, 2025](#)). Financial literacy is widely regarded as a critical factor in promoting financial inclusion and improving individual financial well-being. Individuals with higher financial literacy are generally better equipped to navigate complex financial markets and avoid potential financial risks. Individuals with higher financial literacy are generally more capable of selecting appropriate investment instruments and managing financial risks effectively. In this study, financial literacy is positioned as a moderating variable that may strengthen or weaken the relationship between financial behavior, income, self-control, and investment decisions. Its indicators include understanding financial products, managing income effectively, and using financial services wisely ([Sindhu & Dharmendra, 2022](#)).

However, previous studies have shown inconsistent findings regarding the role of financial literacy in investment decision-making. Some studies suggest that financial literacy improves investment decisions by enhancing financial knowledge, risk evaluation, and rational decision-making abilities. Conversely, other studies indicate that financial literacy does not always translate into better financial behavior due to the influence of psychological and behavioral factors such as habits and self-control. This contradiction reflects the knowledge-behavior gap and highlights the need to further examine how financial literacy interacts with behavioral and economic factors in shaping investment decisions.

2.7 Conceptual Framework

This study positions financial behavior, income, and self-control as independent variables influencing investment decisions. Financial literacy is incorporated as a moderating variable that may alter the strength of these relationships. The conceptual framework reflects the integration of economic, behavioral, and psychological perspectives in explaining investment decision-making. Financial behavior represents practical financial management, income reflects economic capacity, and self-control captures psychological discipline, while financial literacy provides the cognitive

foundation for decision-making. The framework is grounded in the theory of planned behavior, integrating behavioral, economic, and psychological perspectives to explain investment decision-making. This approach provides a comprehensive understanding of how individuals translate financial capacity and behavior into actual investment actions ([Haidari, 2023](#)). By incorporating financial literacy as a moderating variable, this study seeks to examine whether knowledge enhances or limits the influence of behavioral and economic factors on investment decisions. This approach contributes to a more nuanced understanding of financial decision-making processes.

2.8 Hypotheses

Based on the Theory of Planned Behavior (TPB), investment decisions are formed through individual intentions influenced by attitudes, perceived behavioral control, and decision-making capabilities. Financial behavior reflects individuals' financial attitudes and practices, income represents financial capability, while self-control reflects perceived control in managing long-term financial goals. In addition, financial literacy strengthens individuals' ability to understand and apply financial knowledge in making investment decisions. Therefore, based on the theoretical and conceptual framework, the hypotheses of this study are formulated as follows:

H₁: Financial behavior has a positive effect on investment decisions

H₂: Income has a positive effect on investment decisions

H₃: Self-control has a positive effect on investment decisions

H₄: Financial literacy moderates the relationship between financial behavior and investment decisions

H₅: Financial literacy moderates the relationship between income and investment decisions

H₆: Financial literacy moderates the relationship between self-control and investment decisions

These hypotheses are developed based on the assumption that investment decision-making is influenced by a combination of behavioral, economic, and psychological factors. The inclusion of financial literacy as a moderating variable aims to test whether knowledge enhances the effectiveness of these factors in shaping investment decisions.

3. RESEARCH METHODOLOGY

This study employs a quantitative research approach to examine the relationships between financial behavior, income, self-control, and investment decisions, with financial literacy as a moderating variable. A quantitative approach is selected because it allows for systematic measurement and statistical analysis of relationships among variables, enabling researchers to test hypotheses and generalize findings to a broader population. This approach is particularly suitable for studies involving latent constructs such as financial behavior and self-control, which require measurement through observable indicators. The research is conducted in Kupang City, Indonesia, focusing on the working population as the unit of analysis ([Angraini et al., 2026](#)).

Kupang City is chosen as the research location due to its unique socio-economic characteristics, including diverse income levels and varying access to financial services. These conditions provide a relevant context for examining how economic, behavioral, and psychological factors influence investment decisions. The population of this study consists of the entire workforce in Kupang City, totaling 215,097 individuals. A purposive sampling technique is applied to ensure that respondents meet specific criteria relevant to the research objectives. Purposive sampling is considered appropriate in this study because it allows the researcher to select respondents who possess specific characteristics relevant to the variables being examined, particularly individuals who have experience in managing personal finances and potential exposure to investment activities. The selected respondents are individuals who reside and work in Kupang City, have a stable source of income for at least one year, and belong to one of the recognized workforce categories. Additional criteria include individuals who are at least 18 years old and have basic financial decision-making responsibility, ensuring that respondents are capable of providing valid and reliable responses regarding financial behavior and investment decisions. Based on the Slovin formula, a sample size of 400 respondents is obtained.

The use of the Slovin formula is intended to determine an adequate sample size that balances accuracy and feasibility, given the large population size. A sample of 400 respondents is considered sufficient to represent the population and to ensure the robustness of statistical analysis using PLS-SEM. Primary data are collected through a structured questionnaire distributed directly to respondents. The use of primary data enables the researcher to obtain firsthand information that is directly relevant to the research objectives, ensuring higher data validity compared to secondary sources. The questionnaire distribution is conducted both offline and online to increase response rates and reach a wider range of respondents. The questionnaire is designed using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), to measure respondents' perceptions and behaviors related to the studied variables.

The Likert scale is selected due to its effectiveness in capturing respondents' attitudes and perceptions in a structured and quantifiable manner. It also allows for ease of analysis and interpretation within statistical modeling frameworks. The instrument includes indicators representing financial behavior, income, self-control, financial literacy, and investment decisions ([Anjani & Darto, 2023](#)). Each variable is operationalized based on established literature to ensure content validity. The indicators are adapted from previous studies and adjusted to fit the context of the research, ensuring that they accurately reflect the constructs being measured. Furthermore, the questionnaire was validated through measurement model evaluation using PLS-SEM by assessing convergent validity, discriminant validity, and reliability to ensure the accuracy and consistency of the research instrument.

Data analysis is conducted using Structural Equation Modeling based on Partial Least Squares (PLS-SEM) with the assistance of SmartPLS version 4. PLS-SEM is chosen due to its ability to analyze complex relationships involving multiple independent, dependent, and moderating variables simultaneously. It is particularly suitable for exploratory and predictive research models where theoretical development is still evolving. This method is selected due to its suitability for analyzing complex models involving latent variables and its flexibility in handling data that do not require strict normal distribution assumptions ([Haji-Othman et al., 2024](#); [Sayyida, 2023](#)). In addition, PLS-SEM is robust for relatively small to medium sample sizes and can effectively handle multicollinearity among variables, making it a reliable analytical tool for behavioral and social science research.

The analysis is carried out in two main stages: the evaluation of the measurement model (outer model) and the structural model (inner model). This two-step approach ensures that the measurement instruments are valid and reliable before testing the hypothesized relationships among variables. It is a standard procedure in SEM analysis to avoid biased or inaccurate results. The measurement model evaluation includes tests of convergent validity, assessed through factor loadings (≥ 0.70) and Average Variance Extracted ($AVE \geq 0.50$), discriminant validity, and construct reliability measured by composite reliability (≥ 0.70) and Cronbach Alpha (≥ 0.70) ([Cheung et al., 2024](#); [Haji-Othman & Yusuff, 2022](#)).

Convergent validity ensures that indicators of a construct are highly correlated, while discriminant validity confirms that each construct is distinct from others. Reliability testing evaluates the internal consistency of the measurement instrument, ensuring that it produces stable and consistent results. The structural model evaluation focuses on examining the relationships among variables using the coefficient of determination (R^2), predictive relevance (Q^2), and path coefficient significance. The coefficient of determination (R^2) indicates the proportion of variance in the dependent variable explained by the independent variables, while predictive relevance (Q^2) assesses the model's predictive capability. These metrics provide insight into the overall strength and accuracy of the model. Hypothesis testing is performed using the bootstrapping technique to assess the significance of both direct and moderating effects within the model ([Jollineau & Bowen, 2023](#)). Bootstrapping is a resampling technique that allows for robust estimation of standard errors and significance levels without relying on strict distributional assumptions. This method enhances the reliability of hypothesis testing, particularly in complex models involving moderating effects.

4. RESULTS AND DISCUSSION

4.1 Measurement Model Evaluation

4.1.1 Convergent Validity

Table 1. Convergent validity

Variables	Dimension	Indicator	Outer Loading	AVE
Financial Behavior	Budgeting	$X_{1.1}$	0.779	0.641
	Budgeting	$X_{1.2}$	0.732	0.641
	Expenditure Discipline	$X_{1.4}$	0.784	0.641
	Financial Recording	$X_{1.10}$	0.859	0.641
	Financial Recording	$X_{1.11}$	0.840	0.641
Income	Income Elements	$X_{2.1}$	0.791	0.589
	Income Elements	$X_{2.2}$	0.775	0.589
	Income Elements	$X_{2.3}$	0.802	0.589
	Income Sources	$X_{2.5}$	0.768	0.589
	Expenses	$X_{2.7}$	0.701	0.589
	Expenses	$X_{2.8}$	0.761	0.589
Self-Control	Rational Thinking	$X_{3.6}$	0.777	0.646
	Rational Thinking	$X_{3.7}$	0.795	0.646
	Rational Thinking	$X_{3.8}$	0.815	0.646
	Long-term Orientation	$X_{3.9}$	0.802	0.646
	Long-term Orientation	$X_{3.10}$	0.827	0.646
Financial Literacy	Financial Knowledge	$M_{1.1}$	0.855	0.697
	Financial Knowledge	$M_{1.2}$	0.861	0.697
	Financial Knowledge	$M_{1.3}$	0.840	0.697
	Financial Skills	$M_{1.4}$	0.859	0.697
	Financial Skills	$M_{1.5}$	0.756	0.697
Investment Decision	Instrument Selection	$Y_{1.1}$	0.848	0.759
	Instrument Selection	$Y_{1.2}$	0.895	0.759
	Instrument Selection	$Y_{1.3}$	0.885	0.759
	Time Horizon	$Y_{1.4}$	0.911	0.759
	Time Horizon	$Y_{1.5}$	0.925	0.759
	Expected Return	$Y_{1.6}$	0.881	0.759
	Expected Return	$Y_{1.7}$	0.907	0.759
	Diversification	$Y_{1.8}$	0.817	0.759
	Diversification	$Y_{1.9}$	0.756	0.759

Table 1 shows that all indicators have outer loading values above 0.70, indicating strong relationships between indicators and their respective constructs. The AVE values for all variables exceed 0.50, demonstrating that each construct explains more than half of the variance of its indicators. These results confirm that the model meets the criteria for convergent validity and is suitable for further structural analysis (Haji-Othman & Md, 2024).

The high outer loading values indicate that each indicator is a strong representation of its latent construct, suggesting that the measurement items are well-designed and conceptually aligned with the theoretical framework. This strengthens the credibility of the measurement model and ensures that the constructs are accurately captured. Furthermore, the AVE values exceeding the recommended threshold suggest that the constructs possess sufficient explanatory power in capturing the variance of their indicators. This implies that the measurement model has a high level of internal validity and can reliably be used for further structural analysis.

4.1.2 Discriminant Validity

Table 2. Discriminant validity (cross loadings)

Variables	Indicator	M_1	X_1	X_2	X_3	Y	Remark
Financial Literacy	$M_{1,1}$	0.855	0.370	0.467	0.518	0.508	Valid
	$M_{1,2}$	0.861	0.375	0.403	0.482	0.488	Valid
	$M_{1,3}$	0.840	0.355	0.407	0.449	0.454	Valid
	$M_{1,4}$	0.859	0.512	0.539	0.642	0.661	Valid
	$M_{1,5}$	0.756	0.655	0.463	0.560	0.555	Valid
Financial Behavior	$X_{1,1}$	0.457	0.779	0.459	0.544	0.435	Valid
	$X_{1,10}$	0.490	0.859	0.390	0.475	0.463	Valid
	$X_{1,11}$	0.448	0.840	0.401	0.482	0.445	Valid
	$X_{1,2}$	0.382	0.732	0.390	0.491	0.367	Valid
	$X_{1,4}$	0.435	0.784	0.358	0.510	0.402	Valid
Income	$X_{2,1}$	0.389	0.393	0.791	0.352	0.364	Valid
	$X_{2,2}$	0.319	0.349	0.775	0.289	0.350	Valid
	$X_{2,3}$	0.400	0.421	0.802	0.421	0.419	Valid
	$X_{2,5}$	0.400	0.326	0.768	0.328	0.395	Valid
	$X_{2,7}$	0.488	0.466	0.701	0.549	0.429	Valid
	$X_{2,8}$	0.514	0.333	0.761	0.455	0.454	Valid
Self-Control	$X_{3,10}$	0.628	0.555	0.496	0.827	0.583	Valid
	$X_{3,6}$	0.425	0.423	0.342	0.777	0.392	Valid
	$X_{3,7}$	0.474	0.470	0.382	0.795	0.474	Valid
	$X_{3,8}$	0.473	0.455	0.382	0.815	0.486	Valid
	$X_{3,9}$	0.559	0.574	0.494	0.802	0.527	Valid
Investment Decision	$Y_{1,1}$	0.621	0.491	0.537	0.537	0.848	Valid
	$Y_{1,2}$	0.591	0.458	0.519	0.522	0.895	Valid
	$Y_{1,3}$	0.584	0.467	0.482	0.578	0.885	Valid
	$Y_{1,4}$	0.557	0.468	0.412	0.566	0.911	Valid
	$Y_{1,5}$	0.562	0.478	0.454	0.573	0.925	Valid
	$Y_{1,6}$	0.566	0.426	0.419	0.557	0.881	Valid
	$Y_{1,7}$	0.558	0.450	0.470	0.568	0.907	Valid
	$Y_{1,8}$	0.554	0.479	0.454	0.506	0.817	Valid
	$Y_{1,9}$	0.498	0.435	0.383	0.451	0.756	Valid

Table 2 shows that each indicator loads higher on its own construct than on other constructs. This confirms that all constructs are empirically distinct and that no multicollinearity issues exist among variables. Therefore, discriminant validity is successfully established (Cheung, Cooper-Thomas, Lau, & Wang, 2024). The establishment of discriminant validity is crucial in ensuring that each variable measures a unique concept without overlapping with other constructs. This is particularly important in this study, as the variables financial behavior, income, self-control, and financial literacy may conceptually relate to each other but must remain empirically distinct. The absence of multicollinearity further indicates that the independent variables contribute uniquely to the model, allowing for more accurate estimation of their individual effects on investment decisions.

4.1.3 Reliability

Table 3. Reliability

Variables	Cronbach Alpha	Composite Reliability	AVE
Financial Literacy	0.892	0.920	0.697
Financial Behavior	0.859	0.899	0.641
Income	0.860	0.895	0.589
Self-Control	0.864	0.901	0.646
Investment Decision	0.960	0.966	0.759

Table 3 shows that all variables have Cronbach Alpha and composite reliability values above 0.70, indicating strong internal consistency. The investment decision variable demonstrates the highest

reliability, suggesting that the measurement instrument is highly stable and consistent (Haji-Othman & Yusuff, 2022). High reliability values indicate that the measurement items consistently reflect the underlying constructs across respondents. This enhances the overall robustness of the study and reduces the likelihood of measurement error. The particularly high reliability of the investment decision variable suggests that respondents have a clear and consistent understanding of investment-related concepts, which strengthens the validity of the findings related to this dependent variable.

4.2 Structural Model Evaluation

4.2.1 Coefficient of Determination (R^2)

Table 4. R-square

Variable	R^2	Adjusted R^2
Investment Decision	0.524	0.515

Table 4 shows that the model explains 52.4% of the variance in investment decisions. This indicates a moderate explanatory power, meaning that financial behavior, income, self-control, and financial literacy collectively provide a substantial contribution to explaining investment decision-making. A moderate R^2 value suggests that while the model captures a significant portion of the factors influencing investment decisions, there are still other variables not included in the model that may also play an important role. These may include factors such as risk perception, financial technology adoption, and behavioral biases. Nevertheless, the explanatory power of the model is considered adequate for behavioral research, where human decision-making is often influenced by multiple complex and dynamic factors.

4.2.2 Effect Size (f^2)

Table 5. Effect size

Relationship	f^2
Financial Literacy → Investment Decision	0.122
Financial Literacy × Financial Behavior → Investment Decision	0.000
Financial Literacy × Income → Investment Decision	0.001
Financial Literacy × Self-Control → Investment Decision	0.008
Financial Behavior → Investment Decision	0.015
Income → Investment Decision	0.027
Self-Control → Investment Decision	0.051

Table 5 shows that financial literacy has the largest effect size compared to other variables, although still within the small-to-moderate category. Financial behavior, income, and self-control individually exhibit relatively small effects, but remain important contributors within the overall model structure (Jollineau & Bowen, 2023). The relatively small effect sizes of financial behavior, income, and self-control indicate that each variable contributes incrementally to investment decisions rather than having a dominant standalone influence. This supports the idea that investment decision-making is a multifactorial process. From a practical perspective, the small effect sizes of financial behavior and self-control suggest that improving investment decisions requires continuous behavioral development rather than short-term interventions. Financial education programs should not only increase financial knowledge but also focus on strengthening daily financial habits, budgeting discipline, spending control, and long-term financial commitment to encourage more consistent investment behavior. The relatively larger effect size of financial literacy highlights its importance as a direct predictor of investment decisions, even though it does not function as a moderating variable in this study.

4.2.3 Predictive Relevance (Q^2)

The Q^2 value of 0.524 indicates that the model has good predictive relevance. This suggests that the variables included in the model are capable of predicting investment decisions effectively. A strong Q^2 value indicates that the model has practical predictive capability, meaning that it can

be used to estimate investment behavior in similar contexts beyond the sample used in this study.

4.2.4 Path Coefficient and Hypothesis Testing

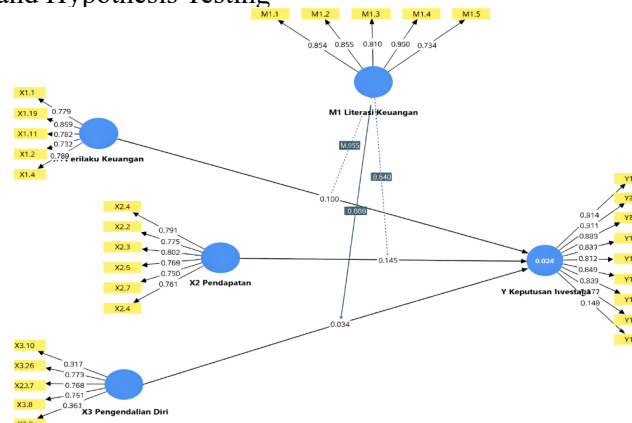


Figure 1. Structural model bootstrapping

Figure 1 shows the relationships among financial behavior, income, self-control, financial literacy, and investment decisions based on the PLS-SEM bootstrapping results. The figure shows the magnitude and direction of the path coefficients between variables, indicating that financial literacy has the strongest direct effect on investment decisions. Additionally, the relationships between financial behavior, income, and self-control with investment decisions are positive, while the moderating effects of financial literacy appear weak and statistically insignificant.

The significance of all direct relationships confirms that both economic and behavioral factors play important roles in shaping investment decisions. This finding supports the integration of economic and psychological perspectives in understanding financial decision-making. The absence of moderating effects suggests that financial literacy operates more as a direct determinant rather than as a factor that enhances the influence of other variables. This finding contributes to the ongoing debate regarding the role of financial literacy in financial behavior research.

Table 6. Hypothesis testing

Relationship	β	t-value	p-value	Result
$X_1 \rightarrow Y$	0.120	2.070	0.039	Significant
$X_2 \rightarrow Y$	0.147	3.361	0.001	Significant
$X_3 \rightarrow Y$	0.234	4.582	0.000	Significant
$M \rightarrow Y$	0.343	6.143	0.000	Significant
$M \times X_1 \rightarrow Y$	0.010	0.113	0.910	Not Moderating
$M \times X_2 \rightarrow Y$	0.020	0.391	0.696	Not Moderating
$M \times X_3 \rightarrow Y$	-0.089	1.562	0.118	Not Moderating

Table 6 shows that all direct relationships are positive and statistically significant. Financial literacy has the strongest influence on investment decisions, followed by self-control, income, and financial behavior. However, the moderating effects are not significant, indicating that financial literacy does not strengthen the relationship between independent variables and investment decisions.

4.3 Discussion

4.3.1 Financial Behavior and Investment Decisions

The findings indicate that financial behavior significantly influences investment decisions. This result suggests that practical financial management plays a crucial role in enabling individuals to participate in investment activities. Financial behavior acts as a mechanism through which individuals translate their financial resources into actionable investment decisions. Individuals who consistently engage in budgeting, saving, and expense control are more likely to accumulate surplus funds, which

can then be allocated toward investment. This indicates that financial behavior directly affects both financial readiness and decision-making capacity. This finding is consistent with previous studies ([Rahman, & Yulian, 2022](#); [Silfiani, & Dahlan, 2023](#)). From a theoretical perspective, this finding aligns with the Theory of Planned Behavior, where behavior is influenced by individuals' attitudes and perceived control. Financial behavior reflects actual implementation of financial planning, which strengthens the likelihood of investment engagement. Although the effect size of financial behavior is relatively small, this finding implies that consistent financial habits remain important in supporting investment decisions. Therefore, practical interventions should focus on gradually improving financial routines, including budgeting practices, saving consistency, and expense monitoring.

4.3.2 Income and Investment Decisions

Income has a positive and significant effect on investment decisions, indicating that financial capacity plays a fundamental role in investment activities. This finding confirms that economic capacity is a fundamental prerequisite for investment participation. Individuals with higher income levels have greater flexibility to allocate funds beyond their basic consumption needs. However, this result also implies that income alone is not sufficient to guarantee optimal investment decisions. Without proper financial behavior and self-control, higher income may not translate into effective investment activities. This finding confirms that income is a structural factor that determines investment capability ([He, & Yoo, 2024](#); [Namsa, Rinova, & Sari, 2025](#)). Therefore, income should be viewed as an enabling factor rather than a determining factor, as its impact depends on how individuals manage their financial resources.

4.3.3 Self-Control and Investment Decisions

Self-control significantly affects investment decisions. This highlights the importance of psychological discipline in financial decision-making. Self-control allows individuals to resist impulsive spending and maintain consistency in their financial goals. Individuals with strong self-control are more capable of delaying gratification, which is essential in investment activities that require long-term commitment and patience. This finding is consistent with behavioral finance theories, which emphasize that emotional and psychological factors significantly influence financial behavior ([Bai, 2023](#); [Hernandez-Perez, & Rambaud, 2025](#)). The relatively small effect size of self-control indicates that psychological discipline contributes gradually to investment decisions. Practically, this suggests the importance of self-control training through goal-setting strategies, delayed gratification practices, and awareness of impulsive financial behavior.

4.3.4 Moderating Role of Financial Literacy

The results show that financial literacy does not moderate the relationship between financial behavior, income, and self-control with investment decisions. This finding indicates the existence of a knowledge-behavior gap, where individuals possess financial knowledge but fail to apply it in real-life situations. One possible explanation is that behavioral and psychological factors, such as habits and self-control, have a stronger influence on financial decisions than cognitive understanding alone. Additionally, financial literacy may function more effectively as a direct predictor rather than as a moderating variable, suggesting that knowledge improves decision-making independently rather than enhancing other relationships. This finding contributes to the literature by highlighting that improving financial literacy alone may not be sufficient; behavioral interventions are also necessary to ensure that knowledge is translated into action ([Pham & Le, 2023](#); [Shintawati & Budidarma, 2023](#)).

5. CONCLUSIONS

5.1 Conclusion

This study aims to examine the effects of financial behavior, income, and self-control on investment decisions, with financial literacy as a moderating variable among the workforce in Kupang City. The findings indicate that all independent variables financial behavior, income, and self-control have a positive and significant influence on investment decisions. These results demonstrate that investment decision-making is shaped not only by economic capacity but also by behavioral and psychological factors.

Financial literacy is found to have a strong direct effect on investment decisions, indicating its important role in enhancing individuals' ability to make informed financial choices. However, financial literacy does not function as a moderating variable in the relationships between financial behavior, income, self-control, and investment decisions. This suggests that financial knowledge alone is not sufficient to strengthen the influence of these factors, highlighting the existence of a gap between financial knowledge and actual financial behavior. Overall, this study contributes to a broader understanding of investment behavior by integrating economic, behavioral, and psychological perspectives. It emphasizes that improving investment decisions requires not only increasing financial literacy but also fostering disciplined financial behavior and strengthening self-control among individuals

5.2 Research Limitations

This study has several limitations that should be considered when interpreting the findings. First, the research is limited to the workforce in Kupang City, which may restrict the generalizability of the results to other regions with different socio-economic characteristics. Second, the study relies on self-reported data collected through questionnaires, which may be subject to response bias and individual subjectivity. Additionally, the variables included in this study explain a moderate proportion of variance in investment decisions, indicating that there are other factors not captured in this model that may also influence investment behavior. These limitations suggest that the findings should be interpreted with caution and provide opportunities for further investigation.

5.3 Suggestions and Directions for Future Research

Based on the findings and limitations of this study, several recommendations can be proposed for future research. First, future studies are encouraged to expand the scope of research by including respondents from different regions or demographic groups to enhance the generalizability of the results. Second, future research may consider incorporating additional variables, such as financial technology usage, risk perception, behavioral biases, or social influence, to provide a more comprehensive understanding of investment decision-making. From a practical perspective, policymakers and financial institutions are encouraged to develop financial education programs that integrate financial literacy improvement with behavioral and psychological training. These programs can be implemented through personal budgeting workshops, investment planning simulations, spending control strategies, and self-control training to help individuals develop consistent financial habits and make more rational long-term investment decisions. Third, alternative research methods, such as longitudinal studies or mixed-method approaches, could be employed to capture dynamic changes in financial behavior and investment decisions over time. Finally, future studies may further explore the role of financial literacy, particularly by examining its interaction with behavioral and psychological factors, to better understand how financial knowledge can be effectively translated into practical financial actions.

ACKNOWLEDGEMENT

The authors would like to express their sincere gratitude to all respondents who participated in this study. The authors also extend appreciation to all parties who provided guidance, support, and assistance throughout the research process and manuscript preparation.

AUTHOR CONTRIBUTIONS

STHS contributed to the conceptualization, research design, data collection, data analysis, and manuscript preparation. PYA contributed to research supervision, methodology review, and interpretation of findings. IKA contributed to manuscript review, validation, and improvement of the final version. All authors have read and approved the final manuscript.

REFERENCES

- Abidin, G. R., Tubastuvi, N., Haryanto, E., & Rachmawati, E. (2024). The role of financial knowledge, income level, financial behavior, and regret experience in shaping investment decisions: A study of sme business owners with locus of control as a mediator. *Sentralisasi*, 13(2), 220-236. <https://doi.org/10.33506/sl.v13i2.3074>

- Altundal, V., Tokay Argan, M., & Argan, M. (2024). The effect of fomo, uncertainty avoidance and impulsiveness on financial investment decisions of individual investors. *Selçuk Üniversitesi Sosyal Bilimler Meslek Yüksekokulu Dergisi*, 27(2), 673-695. <https://doi.org/10.29249/selcuksbmyd.1526087>
- Angraini, A., Hariyanto, D., & Safitri, H. (2026). The Influence of overconfidence, herding behavior, and self-control on investment decisions: Moderation of financial literacy among stock investors in Pontianak City. *Journal Dimensie Management and Public Sector*, 7(1), 12-28. <https://doi.org/10.48173/jdmeps.v7i1.370>
- Anjani, C., & Darto, D. (2023). Financial literacy, income and self-control on financial management behavior of generation Z. *Baskara : Journal of Business and Entrepreneurship*, 5(2), 152-164. <https://doi.org/10.54268/baskara.v5i2.16363>
- Apriadi, D., Adelin, D., Mutumanikam, P. R., & Lanjarsih, L. (2025). Personal finance transformation in the digital era: The impact of financial technology on people's economic behavior. *Oikonomia : Journal of Management Economics and Accounting*, 2(3), 89-100. <https://doi.org/10.61942/oikonomia.v2i3.356>
- Ariestiani, N. W., & Putri, I. G. A. M. A. D. (2025). Financial literacy level, financial behavior, and income on investment decisions. *E-Jurnal Akuntansi*, 35(5). <https://doi.org/10.24843/EJA.2025.v35.i05.p10>
- Bai, R. (2023). Impact of financial literacy, mental budgeting and self control on financial wellbeing: Mediating impact of investment decision making. *PLOS ONE*, 18(11). <https://doi.org/10.1371/journal.pone.0294466>
- Budiman, J., & Vivien, V. (2026). Financial Literacy as a Mediator of Gen Z's Financial Management Behavior. *Jurnal Akuntansi, Keuangan, Dan Manajemen*, 7(2), 45-62. <https://doi.org/10.35912/jakman.v7i2.5491>
- Cheung, G. W., Cooper-Thomas, H. D., Lau, R. S., & Wang, L. C. (2024). Reporting reliability, convergent and discriminant validity with structural equation modeling: A review and best-practice recommendations. *Asia Pacific Journal of Management*, 41(2), 745-783. <https://doi.org/10.1007/s10490-023-09871-y>
- Fitriaty, F. (2023). Exploring the factors shaping investment decisions. *Dinasti International Journal of Economics, Finance & Accounting*, 4(3), 465-474. <https://doi.org/10.38035/dijefa.v4i3.1958>
- Girsang, F. J., & Purnama, E. D. (2025). The effect of financial literacy, financial experience, financial self-efficacy on consumption behavior with financial technology as a mediating variable in the millennial generation. *Journal of Multidisciplinary Academic Business Studies*, 2(2), 79-96. <https://doi.org/10.35912/jomabs.v2i2.2695>
- Haidari, M. N. (2023). Impact of decision-making on investment performance: A comprehensive analysis. *Journal of Asian Development Studies*, 12(4), 980-990. <https://doi.org/10.62345/jads.2023.12.4.78>
- Haji-Othman, Y., Sheh Yusuff, M. S., & Md Hussain, M. N. (2024). Data analysis using Partial Least Squares Structural Equation Modeling (PLS-SEM) in conducting quantitative research. *International Journal of Academic Research in Business and Social Sciences*, 14(10). <https://doi.org/10.6007/IJARBS/v14-i10/23364>
- Haji-Othman, Y., & Yusuff, M. S. S. (2022). Assessing reliability and validity of attitude construct using Partial Least Squares Structural Equation Modeling (PLS-SEM). *International Journal of Academic Research in Business and Social Sciences*, 12(5). <https://doi.org/10.6007/IJARBS/v12-i5/13289>
- He, Y., & Yoo, T. H. (2024). Financial development impact on domestic investment: Does income level matter? *Cogent Economics & Finance*, 12(1), 2321811. <https://doi.org/10.1080/23322039.2024.2321811>
- Hernandez-Perez, J., & Rambaud, S. C. (2025). Uncovering the factors of financial well-being: The role of self-control, self-efficacy, and financial hardship. *Future Business Journal*, 11(1), 70. <https://doi.org/10.1186/s43093-025-00498-7>

- Hidayat, F. S., & Hartono, U. (2022). Factors affecting financial investment decisions: Undergraduate student context. *BISMA (Bisnis Dan Manajemen)*, 15(1), 40-59. <https://doi.org/10.26740/bisma.v15n1.p40-59>
- Hidayati, N. Y., & Destiana, R. (2023). The influence of attitude, subjective norms, perceived behavioral control, and financial literacy on investment intention. *return. Study of Management, Economic and Bussines*, 2(7), 718-728. <https://doi.org/10.57096/return.v2i7.137>
- Jollineau, S. J., & Bowen, R. M. (2023). A practical guide to using path analysis: Mediation and moderation in accounting research. *Journal of Financial Reporting*, 8(1), 11-40. <https://doi.org/10.2308/JFR-2021-004>
- Kasoga, P. S., & Tegambwage, A. (2022). Psychological traits and investment decisions: The mediation mechanism of financial management behavior evidence from the Tanzanian stock market. *Journal of Money and Business*, 2, 212. <https://doi.org/10.1108/JMB-05-2022-0028>
- Mishra, B. R., & Malik, S. K. (2025). Financial literacy: A global perspective. *International Journal of Management and Development Studies*, 14(4), 18-24. <https://doi.org/10.53983/ijmds.v14n4.003>
- Mufassiro, A., Zaki, A., Mustaqim, M., & Putrihadiningrum, D. C. (2025). The effect of financial technology and self-control on impulsive buying: The moderating role of income. *SIMAK*, 23(01), 121-137. <https://doi.org/10.35129/simak.v23i01.623>
- Namsa, A., Rinova, R., & Sari, P. P. (2025). Financial literacy and income as economic factors shaping MSME investment choices in Yogyakarta. *International Journal of Economics Development Research (IJEDR)*, 6(2), 635-646. <https://doi.org/10.37385/ijedr.v6i2.7296>
- Pham, K. D., & Le, V. L. T. (2023). Nexus between financial education, literacy, and financial behavior: Insights from Vietnamese young generations. *Sustainability*, 15(20), 14854. <https://doi.org/10.3390/su152014854>
- Prakoso, T., & Apriliani, R. (2024). Budgeting and saving effectiveness as the main pillar of sustainable personal financial management. *Indonesian Journal of Islamic Economics and Finance*, 4(2), 257-272. <https://doi.org/10.37680/ijief.v4i2.6187>
- Putri, D. M., Trisnawati, N., Putri, S. F., & Kurniawati, S. (2025). Applying the theory of planned behavior: Determinants of stock investment intentions among individual investors in East Java. *Electronic Journal of Education, Social Economics and Technology*, 6(1), 1201-1210. <https://doi.org/10.33122/ejeset.v6i1.1001>
- Qian, R. (2023). Management of personal finances and investment decisions. *Advances in Economics, Management and Political Sciences*, 64(1), 202-212. <https://doi.org/10.54254/2754-1169/64/20231532>
- Rahman, K., & Yulian, T. N. (2022). The effect of financial behavior and income on investment decisions during the covid 19 pandemic with financial literacy as an intervening variable. *INOVASI*, 18(1), 139-144. <https://doi.org/10.30872/jinv.v18i1.10418>
- Salim, W. Y., Reniati, & Sumiyati. (2025). Financial Stability, Financial Target, and External Pressure on Financial Statement Fraud: An Empirical Study of Mining Companies Listed on the Indonesia Stock Exchange (2019–2023). *Jurnal Relevansi: Ekonomi, Manajemen Dan Bisnis*, 9(1), 198-209. <https://doi.org/10.61401/relevansi.v9i2.163>
- Sayyida, S. (2023). Structural Equation Modeling (SEM) dengan smartpls dalam menyelesaikan permasalahan di bidang ekonomi. *Journal MISSY (Management and Business Strategy)*, 4(1), 6-13. <https://doi.org/10.24929/missy.v4i1.2610>
- Shintawati, M. P. D., & Budidarma, I. G. A. M. (2023). The effect of income and financial literacy on investment decisions with financial behavior as an intervening variable. *International Journal of Science and Society*, 5(5), 1-24. <https://doi.org/10.54783/ijss.v5i5.864>
- Silfiani, Y., & Dahlan, K. S. S. (2023). Financial factors to investment decisions: The mediating role of financial behavior. *Jurnal Indonesia Sosial Sains*, 4(10), 1083-1098. <https://doi.org/10.59141/ji ss.v4i10.914>

- Sindhu, & Dharmendra. (2022). A moderating role of risk perception on the relationship between financial literacy and financial knowledge on investment decision. *Shanlax International Journal of Management*, 9(S1-Mar), 20–29. <https://doi.org/10.34293/management.v9iS1-Mar.4887>
- Wahyuni, S. F., Radiman, R., & Kinanti, D. (2023). Pengaruh literasi keuangan, lifestyle hedonis dan sikap keuangan pribadi terhadap perilaku keuangan mahasiswa. *Owner*, 7(1), 656-671. <https://doi.org/10.33395/owner.v7i1.1304>
- Yeni, F., Sarah, S., Ramadhan, M. F., & Sari, P. I. P. (2024). The influence of income and financial literacy on investment decision through financial behavior as a moderating variable. *Jurnal Apresiasi Ekonomi*, 12(1), 140-150. <https://doi.org/10.31846/jae.v12i1.694>
- Zima, Z., Dharma, F., & Susilowati, R. Y. N. (2025). The Effect of Financial Literacy, Overconfidence, and Herding Behavior on Application-Based Investment Decisions. *Goodwood Akuntansi Dan Auditing Reviu*, 4(1), 121-147. <https://doi.org/10.35912/gaar.v4i1.5587>