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COGNITIVE DRIVERS OF INVESTMENT BEHAVIOR: ANALYZING THE MEDIATION-MODERATION MODEL ON HERDING BEHAVIOR AMONG GEN-Z INVESTORS

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Abstract

This study examined the influence of herding behavior on investment behavior with risk tolerance as a mediator and financial literacy as a moderator. Since Investment participation among young generations in Indonesia has grown significantly, yet behavioral biases such as herding continue to undermine rational decision-making Previous studies reported inconsistent findings regarding the direct impact of herding on investment behavior, leaving an important research gap. A quantitative approach was employed using survey data from 386 Gen Z investors in East Java, analyzed with SEM-PLS. The results confirmed that herding significantly affected both investment behavior and risk tolerance, while risk tolerance strongly influenced investment behavior and partially mediated the herding–investment link. Moreover, financial literacy strengthened the effect of herding on investment behavior. The findings imply that improving financial literacy and strengthening risk management education are essential for fostering rational investment decisions. Future research should expand the demographic scope and additional psychological and social factors to the model.

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INTRODUCTION

Investment awareness among Indonesia's young generations, particularly Generation Z and Millennials, has experienced a significant increase, as reflected in the growth of Single Investor Identification (SID) accounts reported by PT Kustodian Sentral Efek Indonesia (KSEI) (katadata, 2020; 2021; KSEI, 2020). However, the level of financial literacy across investors remains heterogeneous. Limited financial literacy constitutes a critical barrier to making rational investment decisions (Yong et al., 2018). Moreover inadequate financial literacy often predisposes investors to behavioral biases, one of the most salient being herding behavior.

Herding behavior refers to the tendency of investors to imitate the actions of others without relying on their own informational judgments (Banerjee, 1992). The proliferation of digital media has further amplified this phenomenon and demonstrated its influence on investment decision-making, as evidenced by Rahman & Gan (2020) in Generation Y in Malaysia and Muharam et al. (2021) in Southeast Asia. Investors suspectible to such behavioral biases while neglecting risk assessment are more likely to incur financial losses (Baker & Nofsinger, 2002).

Prior research examining the direct effect of herding behavior on investment behavior has yielded inconclusive findings. Some studies report significant effects of herding behavior on investment decisions (Halim & Pamungkas, 2023; Khalingga et al., 2024), whereas others reveal nonsignificant relationships (Loppies et al., 2022; Runtuwene & Sibilang, 2024). These inconsistencies underscore the need for further investigation that incorporates mediating

variables. To address this gap, the present study proposes risk tolerance as a mediator.

Investment decisions are inherently made under conditions of risk (Takemura, 2014), where such risks embody elements of uncertainty. The level of financial literacy influences how investors perceive and evaluate risk, which in turn shapes their risk tolerance. Risk tolerance has been identified as a critical determinant of investment behavior (Ye & Kulathunga, 2019; Grable & Lytton, 1999; Díez-Esteban et al., 2017). Beyond positioning risk tolerance as a mediator between herding behavior and investment behavior, this study also integrates financial literacy as a moderating variable within the same relationship.

Given the diverse levels of financial literacy across investors, those with higher financial knowledge are better equipped to mitigate herding tendencies and make more rational investment choices. Conversely, individuals with limited financial literacy remain vulnerable to biased and irrational decisions (Yong et al., 2018). Therefore, this study aims to analyze the effect of herding behavior on investment behavior, with risk tolerance as a mediating variable and financial literacy as a moderating variable. The novelty of this research lies in examining the dual role of risk tolerance as a mediator and financial literacy as a moderator in the herding–investment behavior nexus, an area that has received limited scholarly attention.

The Prospect Theory

Prospect Theory, introduced by Kahneman and Tversky (1979), revolutionized the understanding of decision-making under risk by emphasizing that individuals are not fully rational but rather evaluate outcomes relative to a reference point and exhibit greater sensitivity to losses than to equivalent gains (loss aversion). The theory was subsequently extended through the Cumulative Prospect Theory (Tversky & Kahneman, 1992), which elucidates the four-quadrant risk attitude patterns across domains of gains and losses. Its application in finance explains phenomena such as myopic loss aversion (Benartzi & Thaler, 1995), the equity premium puzzle, as well as asset price movements and market volatility (Barberis et al., 2001; Gulko, 2009). Thus, Prospect Theory offers a robust theoretical lens to understand how investors balance risk and return.

Prospect Theory is particularly relevant in explaining the roles of herding behavior, risk tolerance, financial literacy, and investment behavior. Herding behavior emerges when investors conform to the majority as a strategy to minimize losses, a mechanism consistent with loss aversion (Casavecchia, 2016; Ahn et al., 2024). Risk tolerance reflects risk preferences within the Prospect Theory framework, wherein individuals with lower tolerance tend to be more risk-averse and avoid high-risk assets (Vieider et al., 2010; Berkelaar et al., 2004). Previous studies have further demonstrated that risk tolerance mediates the relationship between behavioral biases and investment decisions (Srivastava & Moid, 2024; Kasoga, 2021), while financial literacy moderates the effects of biases such as herding on investment behavior (Adil et al., 2022; Wangzhou et al., 2021; Mahmood et al., 2024). Accordingly, Prospect Theory provides a strong theoretical foundation for the present research model, positioning risk tolerance as a mediator and financial literacy as a moderator in the relationship between herding behavior and investment behavior.

Herding Behavior and Investment Behavior

Herding behavior refers to investors' tendency to imitate others' decisions without engaging in independent analysis. Bogdan et al. (2022) define it as decision-making without utilizing personal information, while Komalasari et al. (2022) highlight its emergence from correlated behavioral patterns due to individuals' inclination to follow others. Evidence across financial contexts shows its prevalence: Ferretti et al. (2021) found that both novice and experienced investors are highly susceptible in crowdfunding platforms, and Trisno & Vidayana (2023) emphasize herding as one of the most common market biases. Empirical studies confirm its significant influence on investment behavior, where herding drives replication of others' decisions and shapes investment processes directly or indirectly (Bogdan et al., 2022; Almansour et al., 2023). While herding can reduce efficiency and performance, it may also enhance confidence (Ahmad & Wu, 2022). In peer-to-peer lending, Chen et al. (2021) show that automated instruments mitigate such tendencies, whereas in South Korea, Yoon and Oh (2022) demonstrate that social media sentiment strongly drives herding among retail investors, particularly in the post-COVID-19 era. thereby underscoring the capacity of behavioral biases such as herding to influence investment decisions. Based on these insights, the following hypothesis is proposed:

H1: Herding behavior has a significant effect on investment behavior.

Herding Behavior and Risk Tolerance

Herding behavior denotes investors' tendency to follow others' decisions without independent analysis. Srivastava and Moid (2025) show that such bias significantly reduces financial risk tolerance, as emotionally driven choices replace rational judgment. Risk tolerance, defined as the capacity and willingness to endure

investment fluctuations and potential losses (Srivastava & Moid, 2025), also entails accepting discomfort when risking present wealth for future growth (Zainul & Suryani, 2021). Rational investors typically set clear risk boundaries supported by financial literacy, enabling them to balance financial capacity, personal preferences, and cognitive skills in uncertain markets (Tamara et al., 2022). Evidence from Indonesia similarly highlights that herding, together with financial literacy, shapes risk tolerance (Tamara et al., 2022), while investors prone to herding often exhibit lower confidence and greater risk aversion than those relying on analytical considerations (Zainul & Suryani, 2021). Based on these arguments, the following hypothesis is proposed:

H2: Herding behavior has a significant effect on Risk Tolerance.

Risk Tolerance and Investment Behavior

Risk tolerance is a crucial determinant of investment decisions, where individuals with high tolerance accept market volatility for higher returns, while those with low tolerance prefer conservative yet limited instruments (Rahmiyati & Somodiharjo, 2025). As a subjective construct, financial risk attitude reflects perceptions shaped by experience, beliefs, and attitudes (Saurabh & Nandan, 2018), with the Theory of Planned Behavior linking beliefs and attitudes to intentions under uncertainty (Ramayah et al., 2009). Within the Expected Utility framework, risk attitude mirrors the utility of choice (Weber et al., 2002), with Dyer and Sarin (1982, in Weber et al., 2002) stressing its cross-situational stability, and its measurement often based on attitudes toward financial behavior, savings, and management (Saurabh & Nandan, 2018; Ye & Kulathunga, 2019). Among younger generations, higher tolerance shifts preferences from safe assets to moderately risky ones like gold, though high-risk assets remain less favored (Marjerison et al., 2025). Evidence from India shows that greater financial literacy enhances tolerance, fostering bolder investments in high-return markets (Sharma, 2024). Moreover, risk tolerance not only shapes asset choices but also mediates psychological and financial literacy effects on financial behavior (Song et al., 2023). Hence, the hypothesis is proposed:

H3: Risk Tolerance has a significant effect on Investment Behavior.

The Mediation Effect of Risk Tolerance

Risk tolerance has been demonstrated as a pivotal variable mediating the influence of psychological factors and behavioral biases on investment behavior. Evidence from India shows that investors' ability to tolerate risk partially mediates the relationship between heuristic biases and investment decisions (Srivastava & Moid, 2024). Similar findings in Tanzania reveal that risk tolerance serves as a positive mediator linking overconfidence, availability, anchoring, and representativeness heuristics to investment choices (Kasoga, 2021). Research in Indonesia further underscores that risk tolerance strengthens students' readiness to participate in the stock market alongside financial literacy and subjective norms (Rahmayanti et al., 2025). Thus, risk tolerance not only directly shapes asset preferences but also functions as a critical mechanism explaining how cognitive and social factors influence investment behavior. In the same vein, risk tolerance can be positioned as a mediator between herding behavior and investment behavior. Bogdan et al. (2022) mentioned that the primarily affects perceptions and attitudes toward risk before manifesting in actual investment behavior. Prior studies affirm that behavioral biases, including herding, significantly impact risk tolerance, which in turn influences investment decision-making (Ahmad & Wu, 2022; Srivastava & Moid, 2025). Accordingly, herding tendencies shape the degree to which investors accept risk, which subsequently determines their investment choices and strategies. Based on this reasoning, the following hypothesis is proposed:

H4: Risk Tolerance mediates the effect of Herding Behavior on Investment Behavior.

The Mediation Effect of Risk Tolerance

Financial literacy is crucial for effective financial resource management, as low literacy often leads to irrational or detrimental investment decisions (Adil, Singh, & Ansari, 2022). Beyond psychological factors, financial knowledge remains a vital determinant of investment decision-making (Mahmood et al., 2024), shaping investors' awareness and understanding of financial information to support safer and more effective choices (Suresh, 2024). Evidence confirms that financial literacy moderates the influence of behavioral biases on investment behavior. In Pakistan, it reduces risks stemming from limited information (Mahmood et al., 2024), while studies in China and Pakistan show it weakens the effects of regret aversion and information cascade in real estate decisions (Wangzhou et al., 2021). Similarly, in India, higher literacy enhances safer and more effective investment choices (Suresh, 2024). Thus, financial literacy acts as a buffer against psychological biases. Applied to herding, defined as investors' tendency to follow others without analysis (Adil et al., 2022; Suresh, 2024), literacy may either attenuate or amplify its impact: low literacy increases vulnerability to crowd-following, while high literacy enables balancing social pressures

with rational considerations (Mahmood et al., 2024). Accordingly, the following hypothesis is proposed:

H5: Financial Literacy moderates the effect of Herding Behavior on Investment Behavior.

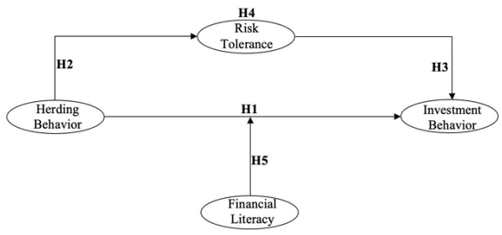

Figure 1. Research Model

METHOD

This study employs a quantitative approach aimed at examining the relationships among financial literacy, risk perception, risk tolerance, and investment decision-making. The research population comprises members of Generation Z in East Java, born between 1997 and 2012, totaling 11,933,122 individuals (BPS East Java Province, 2022). This population qualifies as finite, given that the total number of individuals within the demographic boundary is measurable (Cooper & Schindler, 2014). Based on a 5% margin of error, a minimum sample size of 400 respondents was required. The sampling technique applied was purposive sampling (Sekaran & Bougie, 2016), with criteria including domicile in East Java, age between 18–24 years, possession of a Single Investor Identification (SID), and prior or ongoing participation in capital market financial products. Primary data were collected through a Likert-scale questionnaire (1–5), while secondary data were drawn from literature and supporting sources relevant to the constructs under study. Data analysis was conducted using the SEM-PLS method with SmartPLS 3 software.

Following the PLS-SEM technique outlined by Hair et al. (2022), the analysis proceeded in two primary stages. The first stage entailed evaluation of the reflective measurement model, encompassing indicator reliability (outer loadings expected ≥ 0.708), internal consistency (Cronbach's Alpha, Rho_c, and Rho_a ≥ 0.70, with ≥ 0.60 acceptable for exploratory research), convergent validity (Average Variance Extracted, AVE ≥ 0.50), and discriminant validity assessed via the HTMT ratio (threshold ≤ 0.85). The second stage involved assessment of the structural model, covering collinearity diagnostics (VIF), effect size estimation (F^2 thresholds: 0.02 small, 0.15 medium, 0.35 large), explanatory power of the model (R^2 categorized as ≥ 0.25 small, ≥ 0.50 medium, ≥ 0.75 large), and overall model fit (Hair et al., 2019; Ringle et al., 2023). Hypotheses were tested through bootstrapping procedures (Percentile, Studentized, and BCa), with evaluation of path coefficients, sample mean estimates, standard deviations, and p-values, where results with $p < 0.05$ were deemed statistically significant, thereby confirming the strength and significance of the hypothesized relationships (Hair et al., 2022).

The measurement items for investment behavior were adapted from Wang et al. (2024), comprising five indicators: readiness, effort, serious consideration, decision-making, and confidence to invest. Herding behavior was measured using Yang et al. (2021), operationalized through five indicators capturing reliance on others' opinions, confidence in personal decisions, and trust in information from friends, colleagues, and family. Risk tolerance, also adapted from Yang et al. (2021), was measured by five indicators encompassing risk-taking propensity, preference for stocks, perception of risk as opportunity, and willingness to accept potential losses. Financial literacy was adapted from Sharma (2023), measured using four indicators: understanding of inflation and interest rates, price comparison, attention to price–performance ratios, and knowledge of financial products.

RESULT

Prior to data collection, a two-stage pilot test was conducted. In the first stage, the questionnaire was distributed to 10 respondents, and feedback was used to revise unclear items. The second stage involved 30 respondents (≈9% of the minimum required 331) to confirm validity (convergent and discriminant) and reliability (indicator and internal consistency). After the instrument was deemed adequate, data were collected from 411 respondents, of whom 25 were excluded for not meeting eligibility criteria, yielding a final sample of 386. This exceeded the minimum threshold of 331, ensuring the representativeness for analysis.

In greater detail, the demographic characteristics of the respondents revealed that the majority were male (69%), aged between 18 and 22 years (70%), and possessed an educational background of senior high school (44%) or diploma/bachelor's degree (35%). With respect to occupational status, most respondents were civil servants (34%) or students (26%). In terms of investment experience, the majority had been investing for one to three years (51%), while 19% reported more than seven years of experience. These indicate that most respondents were young at the relatively early of their investment journey.

Measurement Model Analysis

The measurement model analysis assessed the reliability and validity of the constructs, with results confirming that all indicators met the requirements for indicator reliability and internal consistency in line with methodological standards.

Tabel 1. Result of Indicator and Consistency Internal Reliability

Construct	Instrument	Indicator Reliability	Internal Consistency Reliability		
		Loading Factor	CA	Composite Reliability	
				Rho_A	Rho_C
Investment Behavior	(IB1) I am ready to start investing.	0.791	0.841	0.858	0.884
	(IB2) I will make every effort to begin investing.	0.765			
	(IB3) I will seriously consider investing.	0.739			
	(IB4) I have decided that I will invest in the future.	0.829			
	(IB5) I am very confident that one day in the future, I will certainly invest	0.763			
Herding Behavior	(HB1) I adjust the amount of my investment based on the opinions of others (such as brokers or consultants).	0.941	0.947	0.948	0.959
	(HB2) I believe that the investment decisions I make are correct.	0.857			
	(HB3) I believe that information from friends is reliable.	0.938			
	(HB4) I believe that information from colleagues is reliable.	0.857			
	(HB5) I believe that information from family is reliable.	0.945			
Risk Tolerance	(RT1) I consider myself a high-risk taker.	0.946	0.950	0.951	0.962
	(RT2) I would immediately invest money in stocks if I suddenly came into money easily.	0.857			
	(RT3) I prefer to invest in stocks rather than saving money in a bank account.	0.947			
	(RT4) I view risk in investment as an opportunity.	0.867			
	(RT5) I don't mind losing money in the investment process.	0.945			
Financial Literacy	(FL1) I understand the meaning of changes in inflation and interest rates.	0.938	0.902	0.909	0.932
	(FL2) I compare prices when purchasing an investment product	0.805			
	(FL3) I pay attention to the price-to-quality/performance ratio when purchasing an investment product	0.838			
	(FL4) I am knowledgeable about financial products.	0.933			

Based on the criteria of Hair et al. (2021), all indicators in this study, as presented in Table 1, satisfied the requirements of indicator reliability, with loading factor values exceeding 0.708. This indicates that each indicator adequately reflects its respective construct. The indicators with the highest loading factors for each construct were IB4 (0.829) for Investment Behavior, HB1 (0.941) for Herding Behavior, RT3 (0.947) for Risk Tolerance, and FL1 (0.938) for

Financial Literacy. These highest values demonstrate that such indicators are the most robust in explaining their respective variables, thereby serving as the most representative reflections compared to other items.

Furthermore, Table 1 also presents the results of the internal consistency reliability test, showing that all constructs met the standards established by Hair et al. (2021). Cronbach's Alpha (CA) values for all variables exceeded 0.70, confirming that the internal consistency of the instrument was satisfactory. Similarly, the Composite Reliability (Rho_C) values for all constructs were well above the minimum threshold of 0.60, ranging from 0.884 to 0.962, underscoring the very high reliability of the constructs. In addition, the rule of thumb CA < Rho_A < Rho_C was satisfied for each construct, indicating that the measurement instruments employed were of high quality and dependable for subsequent analysis. Having established the reliability, the next step is to ensure that the data also satisfy validity requirements. In this study, validity was assessed through convergent and discriminant validity, as shown in greater detail in Table 2.

Table 2. Result of Convergent and Discriminant Validity

Construct	**Convergent Validity**	**Discriminant Validity**				
		Heterotrait-Monotrait Ratio				
	AVE	FL	HB	IB	MOD FL*HB>IB	RT
Financial Literacy	0.775					
Herding Behavior	0.825	0.511				
Investment Behavior	0.605	0.457	0.436			
MOD FL*HB>IB	1.000	0.568	0.558	0.332		
Risk Tolerance	0.834	0.712	0.692	0.436	0.554	

Based on the results of the convergent validity test presented in Table 2, all constructs in this study met the criteria of Hair et al. (2021), which require the Average Variance Extracted (AVE) to exceed 0.50. The AVE values were 0.775 for Financial Literacy, 0.825 for Herding Behavior, 0.605 for Investment Behavior, 1.000 for the Moderation construct (FL*HB>IB), and 0.834 for Risk Tolerance. These results indicate that the indicators forming each construct are able to explain more than 50% of their variance, thereby confirming that convergent validity has been satisfactorily established. Meanwhile, Table 2 also presents the results of the discriminant validity test using the Heterotrait-Monotrait Ratio (HTMT), which similarly satisfied the threshold recommended by Hair et al. (2021), namely that HTMT values should be below 0.85. The HTMT values among constructs ranged from 0.332 to 0.712, indicating no issues of discriminant validity. This finding confirms that each construct is distinct and unique from one another. Hence, both convergent and discriminant validity were adequately achieved, ensuring that the research instrument is appropriate for subsequent analyses.

Measurement Model Analysis

The structural model analysis was conducted to assess the overall adequacy of the research model (Hair et al., 2021). This evaluation encompassed model fit, coefficient of determination, predictive relevance, effect size, collinearity statistics, and hypothesis testing. The first stage involved examining several model fit indices, including SRMR, d_ULS, d_G, Chi-Square, and NFI, to determine the extent to which the estimated model represents the empirical data. A more detailed summary of the model fit evaluation is presented in Table 3 below.

Table 3. Model Fit

	Saturated Model	**Estimated Model**
SRMR	0.051	0.048
d_ULS	2.691	2.668
d_G	9.493	9.518
Chi-Square	10916.693	10888.573
NFI	0.977	0.980

The model fit evaluation presented in Table 3 indicates that the SRMR values for both the saturated model (0.051) and the estimated model (0.048) fall below the 0.08 threshold, thereby confirming that the model achieves a good fit. The d_ULS and d_G values are relatively small and consistent across the two models. Furthermore, the NFI value (approximately 0.97) meets the

recommended standard (≥0.90), suggesting that the overall model fit is satisfactory, notwithstanding the relatively large Chi-Square value. Accordingly, the model can be considered sufficiently well-fitting to support subsequent analyses

Table 4. Coefficient Determination & Predictive Relevance

	R Square	R Square Adjusted	Q Square
Investment Behavior	0.781	0.772	0.691
Risk Tolerance	0.689	0.689	0.520

The evaluation of the Adjusted R Square and Q Square values presented in Table 4 demonstrates that the research model possesses strong predictive power. The construct of Investment Behavior yielded an Adjusted R Square of 0.772, indicating that the predictor variables account for approximately 77–78% of the variance in investment behavior—an outcome categorized as high according to Hair et al. (2021). Moreover, Table 4 reveals that the Q Square values for Investment Behavior (0.691) and Risk Tolerance (0.520) are above zero, thereby affirming the adequate predictive relevance of both constructs. Consequently, the model not only exhibits substantial explanatory strength but also demonstrates robust predictive capability, rendering it appropriate for hypothesis testing in subsequent analyses, as presented in Table 5.

Table 5. Effect Size, Collinearity Statistics, & Hypothesis Testing

Hypothesis	Effect Size	Colinearity Statistics	Hypothesis Testing				
	F^2	VIF	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
H1: HB → IB	0.379	2.193	0.607	0.610	0.075	2.167	0.000
H2: HB → RT	0.461	1.571	0.994	0.994	0.003	3.265	0.000
H3: RT → IB	0.594	2.619	0.843	0.850	0.069	2.125	0.011
H4: HB → RT → IB	-	-	0.683	0.688	0.066	3.125	0.002
H5: MOD FL*HB → IB	0.488	1.427	0.759	0.755	0.059	3.007	0.015

Based on the effect size (f^2) analysis reported in Table 5, all paths in the model exhibit strong influences, as each falls within the large category according to Hair et al. (2021), namely above 0.35. The path from Risk Tolerance to Investment Behavior displayed the highest f^2 (0.594), indicating that Risk Tolerance contributes most dominantly to Investment Behavior, followed by the moderating path of Financial Literacy on the relationship between Herding Behavior and Investment Behavior (0.488), the direct effect of Herding Behavior on Risk Tolerance (0.461), and finally the direct effect of Herding Behavior on Investment Behavior (0.379). This sequence underscores that the strongest determinant of investment behavior is Risk Tolerance, subsequently reinforced by Financial Literacy, and lastly influenced directly by Herding Behavior.

The robustness of these effects is further validated through the collinearity statistics presented in Table 5. All Variance Inflation Factor (VIF) values range from 1.427 to 2.619, well below the threshold of 5 recommended by Hair et al. (2021). This confirms that the model is free from multicollinearity issues, ensuring that each independent variable contributes uniquely in explaining the dependent construct. Accordingly, the interpretation of the results can be considered more reliable, as they are not distorted by redundancy among predictor variables.

Moreover, Table 5 presents the results of the hypothesis testing, which indicate that all hypotheses are supported. H1 (Herding Behavior → Investment Behavior) is accepted, confirming that herding behavior exerts a direct influence on investment behavior. H2 (Herding Behavior → Risk Tolerance) is also significant, indicating that herding behavior shapes investors' tolerance for risk. H3 (Risk Tolerance → Investment Behavior) is significant, highlighting the pivotal role of risk tolerance in shaping investment behavior. The

mediation test for H4 (Herding Behavior → Risk Tolerance → Investment Behavior) is supported, demonstrating that risk tolerance mediates the effect of herding behavior on investment behavior. Finally, H5 (Financial Literacy moderating the relationship between Herding Behavior and Investment Behavior) is significant, showing that financial literacy strengthens the influence of herding behavior on investment behavior. Referring to Hair et al. (2021), these findings collectively affirm that direct, mediating, and moderating effects within the research model are empirically substantiated.

DISCUSSION

The hypothesis testing results confirm that H1, which posits the effect of herding behavior on investment behavior, is supported, thereby affirming that the tendency of young investors to follow others' decisions significantly shapes their investment behavior. This finding is consistent with prior studies that identified a significant relationship between herding behavior and investment behavior, as demonstrated by Halim and Pamungkas (2023) and Khalingga et al. (2024). Indicator analysis further reveals that the most representative item of herding behavior is HB1, which reflects the tendency to adjust the scale of investment based on the opinions of perceived more experienced others. This underscores that reliance on external advice constitutes the most dominant factor driving individuals to engage in investment activities. Nevertheless, the relative strength of the herding path to investment behavior is weaker compared to that of risk tolerance and the moderating role of financial literacy. This implies that although herding exerts a significant effect, its influence is less pronounced than psychological resilience to risk or financial knowledge in shaping investment decisions. Such dynamics are particularly salient when considered alongside the demographic profile of the respondents, the majority of whom are aged 18–22, are students, and have only one to three years of investment experience. These characteristics highlight the vulnerability of young investors to depend on external opinions due to limited experience and financial literacy, positioning herding as an adaptive mechanism that reinforces their confidence to enter the market, even though its ultimate influence remains less dominant than that of psychological constructs such as risk tolerance.

In addition to influencing investment behavior, the findings also confirm that H2, which examines the effect of herding behavior on risk tolerance, is supported, indicating that imitative behavior significantly shapes the extent to which young investors are able to tolerate risk. This result aligns with the studies of Srivastava and Moid (2025) and Tamara et al. (2022), both of which demonstrate that herding bias has a substantial impact on risk tolerance, as investment decisions tend to be driven more by emotional impulses than by rational analysis. The second most representative indicator of herding behavior is HB3, reflecting the belief that information from friends can be relied upon, underscoring that social references from one's immediate environment play an important role in shaping how young generations assess risk. The path from herding behavior to risk tolerance shows relatively strong explanatory power compared to other paths, suggesting that reliance on others' opinions exerts a greater influence on the formation of risk tolerance than the direct effect of herding on investment behavior. This relationship resonates with the demographic profile of respondents, many of whom are entering early stages of professional life such as civil servants or entrepreneurs, where financial decisions are often shaped by social interactions and recommendations from close contacts, making perceptions of risk more readily formed through social validation than through individual analysis.

Reinforcing the sequence of prior findings, H3, which posits the effect of risk tolerance on investment behavior, is supported, consistent with empirical evidence demonstrating that risk tolerance plays a pivotal role in shaping investment decisions (Grable, 1999; Díez-Esteban et al., 2017; Ye & Kulathunga, 2019; Song et al., 2023). The most representative indicator of risk tolerance is RT3, reflecting a preference for equity instruments over bank deposits, which signifies a willingness to endure volatility in pursuit of higher returns; this disposition most strongly drives members of Generation Z to move from intention toward actual investment action. The path from risk tolerance to investment behavior also emerges as the strongest contributor to investment behavior compared to both the direct influence of herding and the pathway reinforced by financial literacy, underscoring that measured risk-taking constitutes the principal engine of decision-making. This tendency is consistent with the demographic profile of respondents, who are predominantly characterized by secondary to higher education and several years of investment experience, whereby exposure to market information and practical engagement cultivates a more mature risk preference framework that translates into more proactive and growth-oriented investment behavior.

In line with this pattern, H4, which posits that risk tolerance mediates the relationship between herding behavior and investment behavior, is supported, consistent with the findings of Srivastava and Moid (2024), Kasoga (2021), and Rahmayanti et al. (2025), who emphasize that risk tolerance serves as a critical psychological mechanism channeling the influence of herding bias into investment

decisions. The mediation observed is partial, as the direct effect of herding on investment behavior is also confirmed, thereby indicating the coexistence of two parallel pathways of influence. The direct effect tends to emerge when social cues are particularly strong and immediately accessible, such as through recommendations from reference figures, community conversations, or digital platform trends that trigger rapid action without extensive risk deliberation. Conversely, when decisions demand a commitment to volatility and longer return horizons, herding first shapes risk perceptions, which subsequently increase or decrease risk tolerance before materializing as investment behavior. This pattern aligns with the demographic profile of respondents, who are predominantly male and include entrepreneurial groups, where social validation from peer networks and intensive exposure to market information channels heighten the likelihood of adopting collective signals, while simultaneously fostering the internalization of risk that ultimately guides more deliberate investment decisions.

Building upon the preceding findings, H5, which posits that financial literacy moderates the relationship between herding behavior and investment behavior, is supported, consistent with the studies of Adil et al. (2022), Wangzhou et al. (2021), and Mahmood et al. (2024), which underscore the role of financial literacy as both a protective and reinforcing factor in investment decision-making. Financial literacy is most strongly reflected in the indicator of understanding inflation and interest rates, enabling young investors to evaluate market information more rationally and thereby transform their propensity to follow the crowd into more deliberate and measured investment decisions. Conversely, the lowest indicator, the habit of comparing prices, reveals that some investors remain less meticulous in performing basic evaluations, rendering them more vulnerable to uncritical conformity. This moderating pattern is consistent with the demographic profile of respondents, the majority of whom are pursuing higher education, where access to academic resources and formal financial literature provides opportunities to refine conceptual economic understanding, yet practical habits in managing daily consumption and investment decisions are not yet fully developed. Such conditions affirm that sound financial literacy not only mitigates the adverse effects of herding but also channels imitative tendencies into a more rational and advantageous investment strategy.

CONCLUSION AND RECOMMENDATION

This study originates from the increasing investment participation of young generations in Indonesia, which has not been matched by adequate levels of financial literacy, thereby giving rise to behavioral biases such as herding that potentially influence investment decisions. The study positions risk tolerance as a mediating variable and financial literacy as a moderating factor. Employing a quantitative method based on SEM-PLS with a sample of Generation Z in East Java, the results of hypothesis testing confirm that herding directly influences investment behavior, herding shapes risk tolerance, risk tolerance affects investment behavior, risk tolerance mediates the relationship between herding and investment behavior, and financial literacy moderates the effect of herding on investment behavior. Thus, the research gap regarding inconsistent findings in prior studies is addressed, as this study demonstrates the mediating role of risk tolerance and the moderating effect of financial literacy in clarifying how herding shapes the investment behavior of young investors.

Theoretically, this study enriches the behavioral finance literature by affirming that risk tolerance as a mediator and financial literacy as a moderator help explain the inconsistencies of prior findings on the herding–investment behavior link. The model strengthens the framework of Prospect Theory by showing that herding behavior not only exerts a direct effect but also operates through psychological mechanisms of risk tolerance and cognitive capacity in the form of financial literacy. From a managerial perspective, the findings provide valuable insights for regulators, financial institutions, and investment product developers to design educational strategies and interventions that emphasize financial literacy enhancement alongside risk tolerance management among young investors. More practical literacy programs, investment simulation training, and transparent market information can help young investors mitigate the adverse effects of herding and guide them toward more rational and sustainable investment decisions.

Nevertheless, several limitations warrant critical attention. First, methodologically, the use of a population limited to Generation Z in East Java with purposive sampling and specific criteria such as SID ownership may constrain the generalizability of findings to broader populations, including different age groups or investors in other regions. Future research is encouraged to expand population coverage and adopt more representative sampling approaches to obtain a more comprehensive picture. Second, in terms of analytical results, although the R Square values indicate strong explanatory power, other factors beyond herding, risk tolerance, and financial literacy may significantly influence investment behavior, such as overconfidence, market overreaction, or social norms. The variation in loading factors and effect sizes also

suggests that not all indicators hold equal explanatory strength, indicating opportunities for future research to incorporate additional psychological and social variables to enrich the theoretical model. Third, this study remains centered on a questionnaire-based quantitative approach that is vulnerable to perceptual bias, while young investors' decision-making dynamics are strongly shaped by external factors such as fintech development, capital market regulation, and social media sentiment. Future studies are therefore recommended to combine quantitative methods with qualitative or behavioral experimental approaches to capture deeper dimensions of the investment behavior phenomenon among Indonesia's younger generations.

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