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Financial Behaviour and Stock Investment Decisions: Exploring the Role of Dual Process Theory Among Generation Z In East Java

[1*]Siti Aisjah, [1]Atim Djazuli, [2]Cicik Retno Wati, [3]Muhammad Fajrul Islam F
[1]Faculty of Economics and Business, Universitas Brawijaya, Indonesia
[2] Agribusiness Management, Politeknik Negeri Jember, Indonesia
[3]Faculty of Economics, Universitas Pendidikan Ganesha, Indonesia

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ABSTRACT

This study examines the influence of financial behaviour, including fear of missing out, financial literacy, herding behaviour, loss aversion, and risk perception, on stock investment decisions among Generation Z in East Java. Utilizing Dual Process Theory as a theoretical framework, this research explores the dynamic interaction between intuitive and analytical thinking processes in shaping investment behaviour. A quantitative approach was employed, with data collected through questionnaires with a Likert scale of 1-5, distributed to 402 Generation Z respondents actively investing in the stock market. Data were analysed using SEM-PLS with SmartPLS 3.3. The results reveal that financial literacy positively impacts herding behaviour and loss aversion, while herding behaviour and loss aversion significantly influence investment decisions. Moreover, fear of missing out and risk perception serve as critical intermediaries, illustrating how emotional and cognitive factors interact in decision making. The findings contribute to a deeper understanding of Generation Z's investment behaviour, highlighting the significance of balancing intuition and analysis. Practical implications include the need for targeted financial education programs to enhance financial literacy and reduce bias-driven behaviour. This study provides theoretical insights by bridging the dual process theory with financial decision-making, offering a comprehensive framework for understanding stock investment behaviour in emerging markets. Future research could expand this scope by exploring other demographic groups or incorporating additional psychological factors.

Corresponding Author
Siti Aisjah
Email: aisjah@ub.ac.id

INTRODUCTION

Investing in financial assets has become a frequently discussed topic among young generations in recent years. This trend aligns with the increasing number of public figures

and influencers actively promoting the importance of investing at a young age. Awareness of the significance of early investment is a positive development that is essential for facing future uncertainties. Several digital assets, known as cryptocurrencies, offer investment opportunities with user-friendly transaction features and guaranteed security. Data shows that investors under 30 years old, or Generation Z, dominated the capital market, with 1.46 million people, or 46.75% of the total 3.14 million Single Investor Identifications (SIDs) by the end of August 2020 (Katadata.co.id, 2021). This data is supported by a report from PT Kustodian Sentral Efek Indonesia (KSEI, 2020), which highlights a 34.78% increase in capital market investors, from 2,484,354 at the end of 2019 to 3,348,396 in 2020.

Cryptocurrencies have become a popular choice for investment transactions. Leading cryptocurrencies like Bitcoin, Ethereum, Tether, XRP/Ripple, Bitcoin Cash, Binance Coin, USD Coin, Litecoin, Bitcoin SV, and others have experienced significant growth in recent years. According to a report from Asset Management Market 360iResearch (2024), the cryptocurrency market size is projected to reach USD 1,067.26 million in 2024, with a compound annual growth rate (CAGR) of 24.61%, reaching USD 3,999.59 million by 2030. In Indonesia, cryptocurrency is legally recognised and regulated by Badan Pengawas Perdagangan Berjangka Komoditi (Bappebti). The global growth of cryptocurrency also influences Indonesia, with Bappebti recording 18.25 million registered crypto asset customers by November 2023.

The widespread use of cryptocurrencies suggests that Indonesian youth have become more aware and literate in investment. Financial knowledge is a critical factor that enables individuals to make sound investment decisions. Rationally, individuals with solid financial knowledge are more likely to make beneficial investments in their future. emphasised that financial knowledge, encompassing understanding and practical application, shapes financial decision-making. Financial literacy serves as a benchmark for evaluating how well individuals manage their financing and investment. However, financial literacy levels vary among individuals. Low financial literacy among investors can be a significant challenge in decision-making. Enhancing financial literacy can improve investors' ability to make rational investment decisions and alter their behaviour to better assess investment opportunities and risks.

Referring to Prospect Theory, which states that investment decisions are based on potential gains and losses rather than final outcomes, it is unsurprising that financial literacy directly correlates with investment decisions. Improved investment decisions indicate higher levels of financial literacy. To enhance financial literacy, it is essential to understand its components. Financial literacy consists of two dimensions: understanding and application (Yeo, 2024). These align with the Theory of Planned Behaviour, linking financial behaviour and financial knowledge. argued that financial literacy results from the convergence of knowledge and experience, where proper knowledge, combined with confidence, fosters high-quality literacy, leading to sound investment decisions. Risk, broadly defined, represents uncertain future events, which can be positive or negative. Risk acceptance is integral to entrepreneurial activities and is closely tied to decision-making. In the context of decision making under risk, it refers to known probabilities resulting from selecting alternatives with inherent risks. Investment decisions are influenced by loss aversion and herding behaviour, both of which directly affect investment decisions. Additionally, the impact of loss aversion and herding behaviour on investment decisions is inseparable from financial literacy levels.

Beyond the direct effects of herding behaviour and loss aversion, Fear of Missing Out (FOMO) is used as a mediating variable in this study. This is due to the abundance of information on social media, which is often a mix of reliable sources and promotional content. Although cryptocurrency adoption in Indonesia is rising rapidly, a comprehensive understanding remains low. Many novice investors enter the cryptocurrency market driven by FOMO. identified FOMO as a bridge between the desire to adopt crypto and investment behaviour. As described, FOMO makes individuals believe they are missing opportunities others have. However, FOMO is also influenced by personality traits. found that neuroticism and conscientiousness were negatively correlated, albeit slightly, with FOMO. Risk perception can reinforce investor behaviour in determining investment decisions. Risk assessment encompasses how investors define risks and their ability to evaluate them accurately. Risk assessment significantly influences the investment decision-making processes. Advanced financial literacy broadens investors' perspectives on risk and enhances their decision-making capacity.

LITERATURE REVIEW

Since the maze of financial products and instruments has become more sophisticated and complicated, it is essential for individuals to select suitable investments (Lusardi, 2019). One assumption emphasised in the financial crisis context is irrationality in investors' financial behaviour because of limited financial knowledge. Investors are strongly driven by behavioural biases which result in suboptimal or irrational decision-making (Suresh G, 2021). Rasool and Ullah (2020) also indicates that financial literacy speeds up the effectiveness of cash flow management, credit risk management, and savings. People who are financially savvier about finance and the stock market invest better than those who are not. In the absence of financial literacy, people will not do right with complex investments and have a hard time to mitigate behavioural biases of investors.

It has been found that financial literacy is one of the key influencing factors and responsible for minimizing investors' behavioural biases. Baker et al. (2019b) reported that financial literacy is negatively related to the disposition effect and herding bias. Credit investors with low literacy prefer to trust in the judgement of their friends and peers, as it provides safety; high-literacy investors have the means to absorb information for rational decision-making so that they can make independent decisions. Similar findings by Rasool and Ullah (2020); Suresh (2024) found that growing financial literacy diminishes the possibility of herding because investors are able to comprehend risk and not imitate market patterns. That is, the greater extent of financial literacy is, the less likely investors are to be accompanied by herding or group bias. Furthermore, financial literacy has likewise been linked to loss aversion. Lusardi (2019) demonstrated that financial literacy enabled investors to evaluate risks and potential losses rationally. Garduno (2022) explained that financial literacy helps to chase away damaging overreactions to loss as well as inspire you look at the bigger picture. Aren and Zengin (2016); Xiao and Porto (2017) emphasised that the clients who get this most are the ones who understand diversification and portfolio risk and have been presented with historical data of how these types of products have behaved over time, so they do not freak out (react emotionally) when there is loss as part of an investment strategy. Therefore, financial literacy can be seen as contributing to loss aversion and herd behaviour reduction at the same time because of an increase in analysis ability, self-control, and rational investment decision making.

H_1: Financial Literacy have a significant effect on Herding Behaviour

H_2: Financial Literacy have a significant effect on Loss Aversion

It has been demonstrated that financial literacy is crucial in lowering behavioural biases that frequently affect investment decisions, such as loss aversion and herding behaviour. Baker et al. (2019b) discovered that the disposition effect and herding bias are substantially and negatively correlated with financial literacy. Low-literacy investors typically feel safer following their friends' or peers' decisions (Putri and Isbanah, 2020). However, financially literate investors are better equipped to evaluate risks impartially and are less susceptible to peer pressure (Rasool and Ullah, 2020). This is consistent with Baker et al. (2019b); Lusardi (2019) which demonstrates how financial literacy aids investors in rationally weighing risks and losses, stifling strong emotional responses, and developing self-control over market swings. Therefore, increasing financial literacy lowers loss aversion and herding bias, which impede making the best investment choices.

Social and emotional factors continue to have a significant impact on investor behaviour in financial markets. Investors frequently follow crowds without considering their own risk tolerance (Monicah and Shiundu, 2020). Investors with little knowledge feel more secure copying other people's investment methods (Dar and Hakeem, 2015). Security prices deviate from their fair value because of this behaviour (Dewan and Dharni, 2019) and has a greater following among individual investors than institutional ones (Goodfellow et al., 2009). Furthermore, this bias is strengthened by loss aversion since investors who are afraid of losing money often put off making (Ainia and Lutfi, 2019). The research conducted by Febianti and Simatupang (2025); Humairo and Panuntun (2022) demonstrates how investment behaviour is greatly impacted by loss aversion, particularly for young investors. Consequently, social pressure and loss aversion continue to be significant factors that cause herd mentality and impair rationality in investment decision-making, even though financial literacy can lessen biases.

H_3: Herding Behaviour have a significant effect on Investment Decision

H_4: Loss Aversion have a significant effect on Investment Decision

Investors frequently engage in herding behaviour when faced with market uncertainty, following the crowd, without conducting a logical analysis. It has been demonstrated that this pattern leads to the development of FOMO, or the emotional desire to invest out of concern for losing out on possible profits. Gupta and Shrivastava (2023) discovered that, even in the absence of any analytical support, investors are more inclined to copy when they witness others making money. This conclusion is supported by Kaur et al. (2024) which demonstrates how herding behaviour in the cryptocurrency market exacerbates the effects of FOMO and raises risky speculation. Nguyen et al. (2024) highlight the reciprocal relationship between FOMO and herding, whereby both encourage rash investing decisions. Investigate Budiman et al. (2025); Rahmawati and Raharja (2024) additionally demonstrates how herding behaviour dramatically raises FOMO among young investors, especially those in Generation Z who use social media. Ardelia et al. (2025) added that impulsive investment decisions and imitation behaviour are emotionally connected by FOMO. Accordingly, herding behaviour helps people who suffer from FOMO, particularly in digital environments where social pressure and fast information flow are prevalent. FOMO is influenced by loss aversion, which is the propensity of investors to prioritise preventing losses over pursuing gains, in addition to being triggered by group behaviour. Gupta and Shrivastava (2023) demonstrate how

investors who have a high degree of loss aversion frequently suffer from FOMO because of their fear of losing out on possible gains made by others. Kaur et al. (2024) discovered that the link between loss aversion and rash decisions is strengthened by the fear of missing opportunities, but Nguyen et al. (2025) note that the emotional strain brought on by FOMO leads to a domino effect of impulsive asset purchases. In Indonesia, (Budiman et al., 2025) claim that retail investors' FOMO is significantly impacted by loss aversion, while Jowey et al. (2024) discovered a similar pattern among young investors in Jakarta.

When people see or learn about the success of others and believe they are losing out on those opportunities, they develop FOMO (Abel et al., 2016). It has been demonstrated that FOMO affects decision-making in the context of consumer behaviour by creating an emotional need to act right away (Kang & Ma, 2020). This phenomenon also happens to investors who are motivated by a desire to increase their profits and a fear of missing out on opportunities if they delay investing (Jajoo & Kumar Baag, 2025). Young generations' investment decisions are significantly impacted by FOMO, particularly those who are active on social media and are exposed to digital financial trends. Therefore, FOMO has a positive impact on investment choices.

H_5: Herding Behaviour have a significant effect on Fear of Missing Out (FOMO)

H_6: Loss Aversion have a significant effect on Fear of Missing Out (FOMO)

H_7: Fear of Missing Out (FOMO) have a significant effect on Investment Decision

H_8: Risk Perception moderate of the relationship between Fear of Missing Out (FOMO) and Investment Decision

Numerous behavioural finance studies have demonstrated that psychological biases significantly influence investment choices. Rather than performing a logical analysis, investors frequently respond to emotional and social pressures. Study from Idris (2024); Kang and Ma (2020) demonstrated how herding behaviour can be triggered by FOMO because people turn to group activities for psychological solace. Kuchler and Stroebel (2021) discovered that social circles, such as friends and family, who are seen as more reliable, frequently have an impact on investment decisions. People are motivated to take action in order to avoid falling behind when they witness those around them making money. This reinforces the herding behaviour cycle, which irrationally raises security prices (Gherghina and Constantinescu, 2024). As a result, employing FOMO as a mediating variable can shed more light on how psychological biases in contemporary financial markets manifest as impulsive investing behaviour.

H_9: Fear of Missing Out (FOMO) mediates of the relationship between Herding Behaviour and Investment Decision

H_{10}: Fear of Missing Out (FOMO) mediates of the relationship between Loss Aversion and Investment Decision

RESEARCH METHODS

This study is quantitative research with a population comprising individuals born between 1997 and 2012, or Generation Z, in East Java, totalling 11,933,122 people (BPS East Java Province, 2022). The population falls under the category of a finite population because the total number of individuals in the demographic area can be measured. The sample size determination was conducted using the Slovin formula with a margin of error of 5%.

Based on this calculation, the sample size used in this study was 800. The sampling method employed was purposive sampling through the online distribution of questionnaires. The criteria for sample selection were as follows: individuals residing in East Java, aged between 18 and 24 years, individuals possessing a Single Investor Identification (SID) as proof of investor identity, and who have previously or are currently investing in financial market products.

The primary data for this study were collected through questionnaires using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Secondary data were sourced from the literature and data supporting the research constructs. Data analysis was conducted using SEM-PLS with SmartPLS 3.3.3 software.

RESULTS AND DISCUSSION

Results

Respondent Characteristics

The characteristics of the study respondents revealed that the majority were women, accounting for 64.68% or 260 respondents. These findings highlight that being an investor is not exclusive to men; women are also capable of making investment decisions. The education level distribution, as shown in Table 1, indicates that the highest percentage is in the high school category at 46.77% (188 respondents), closely followed by the bachelor/diploma level at 42.04% (169 respondents). This indicates that many investors value education, ranging from high school to higher education levels. Most investors were young, aged between 22 and 28 years, comprising 42.79%, or 172 respondents out of a total of 402. This age group, being technologically savvy, enables young investors to gather detailed information for analysis and consideration in decision-making. Regarding monthly income, many respondents earned between Rp 2,860,000 and Rp 7,000,000 (44.78 %, 180 respondents), followed by those earning less than Rp 2,860,000 (38.81 %, 30 respondents). Based on the respondent distribution, it is evident that most investors are beginners. A significant portion has been investing for only 12 months (44.53% or 179 respondents) or between 12 and 24 months (24.88% or 100 respondents). This indicates the need for beginner investors to enhance their skills by learning from more experienced investors who have spent years in the investment field.

Evaluation Model

An outer analysis was conducted to determine the relationship between measurement items and latent variables. This analysis also serves to test the validity and reliability of the latent variable constructs. The validity test is used to determine whether a construct is valid or not through convergent validity and discriminant validity. Convergent validity is assessed based on the factor loading and Average Variance Extracted (AVE) values. According to Ghozali and Latan (2015), an indicator can still be considered valid if the factor loading coefficient is between 0.60 and 0.70. For analyses with unclear theoretical foundations, a factor loading as low as 0.50 may be acceptable. Ghozali and Latan (2015) suggest that a loading value greater than 0.6 but less than 0.7 can still be used, provided that other indicators have values of at least 0.70.

Table 1. Validity Testing

Variable	Item	Outer Loading	Cronbach Alpha	Composite Reability	AVE	Intepretation
Financial Literacy	FL.1.1	0.682	0.921	0.934	0.587	Valid
	FL.1.2	0.800				
	FL.1.3	0.835				
	FL.1.4	0.784				
	FL.2.2	0.788				
	FL.2.3	0.741				
	FL.3.1	0.811				
	FL.3.2	0.820				
	FL.3.3	0.676				
	FL.3.4	0.706				
Fear of Missing Out	FMO.1	0.882	0.926	0.947	0.818	Valid
	FMO.2	0.916				
	FMO.3	0.931				
	FMO.4	0.888				
Herding Berhavior	HB.1.1	0.721	0.833	0.875	0.502	Valid
	HB.1.2	0.654				
	HB.2.1	0.619				
	HB.2.2	0.639				
	HB.4.1	0.771				
	HB.4.2	0.761				
	HB.4.3	0.774				
Investment Decision	ID.1.2	0.717	0.950	0.955	0.558	Valid
	ID.1.3	0.685				
	ID.1.4	0.711				
	ID.2.1	0.761				
	ID.2.2	0.796				
	ID.2.3	0.777				
	ID.3.1	0.759				
	ID.3.10	0.775				
	ID.3.2	0.779				
	ID.3.3	0.791				
	ID.3.4	0.766				
	ID.3.5	0.757				
	ID.3.6	0.794				
	ID.3.7	0.604				
	ID.3.8	0.800				
	ID.3.9	0.644				
	ID1.1	0.747				
Loss Aversion	LA.1	0.838	0.803	0.884	0.717	Valid
	LA.2	0.853				
	LA.3	0.849				
Risk Perception	RP.10	0.749	0.875	0.898	0.526	Valid
	RP.3	0.706				
	RP.4	0.616				
	RP.5	0.744				
	RP.6	0.736				
	RP.7	0.735				
	RP.8	0.794				
	RP.9	0.710				

Based on the results of data processing, validity was assessed using the parameter of outer loading with a cut-off value of 0.6. It can be concluded that the indicators of most of the latent variables met the validity criteria. For the Fear of Missing Out (FMO) variable, the indicators FMO.2, FMO.3, and FMO.4 demonstrated high outer loading values (0.882, 0.916, and 0.931, respectively), making them highly valid in representing the variable.

However, in the Financial Literacy (FL) variable, while most indicators had outer loading values > 0.6, there were some exceptions. In the Herding Behavior (HB) variable, indicators HB.2.2 and HB.2.3 showed outer loading values < 0.6, indicating weak contributions to the construct, and these may need further evaluation or elimination. Conversely, the Investment Decision (ID) variable showed strong performance, with almost all indicators having outer loading values > 0.6, thus being valid in representing investment decisions.

For the Loss Aversion (LA) variable, all indicators exhibited strong outer loading values (>0.6), with the highest value reaching 0.853, allowing all indicators to be retained in the model. Similarly, in the Risk Perception (RP) variable, all indicators had outer loading values > 0.6, with the highest at 0.749, indicating strong contributions of the indicators to the variable. Based on these results, indicators with outer loading values < 0.6, such as FL2.1; HB3.1, HB3.2, HB3.3; FMO5; RP1, and RP2, were removed from the model to improve the validity and reliability of the constructs. Overall, the model demonstrated that most indicators were valid for measuring latent variables, making it suitable for further analysis. Further evaluation can be conducted for indicators with low values to ensure alignment with the theory or concept being measured. In the Average Variance Extracted (AVE) test, the AVE values of all constructs exceeded the minimum threshold of 0.5. This indicates that more than 50% of the variance in the indicators can be explained by their respective constructs, demonstrating adequate convergent validity. The next test was conducted to determine reliability. Based on the data processing results related to Cronbach's Alpha, Composite Reliability, and AVE, all constructs in the model met the criteria for reliability and convergent validity.

1. Cronbach's Alpha values for all variables were above the minimum threshold of 0.7, indicating internal consistency among the indicators within each construct. This suggests high reliability of the items within the constructs.
2. Composite Reliability (CR) values for all variables exceeded the cut-off of 0.7, with most being above 0.8. This indicates that the constructs have a very high level of reliability, showing that the indicators within each construct consistently measure the same concept.

These results indicate that all constructs in the research model meet the criteria for reliability and convergent validity.

Tabel 2 Heterotrait-Monotrait Ratio (HTMT)

	Fear of missing out	**Financial literacy**	**Herding behaviour**	**Investment decision**	**Loss aversion**	**Risk perseption**
Fear Of Missing Out						
Financial Literacy	0.103					
Herding Behaviour	0.400	0.608				
Investment Decision	0.205	0.726	0.788			
Loss Aversion	0.131	0.720	0.714	0.762		
Risk Perseption	0.460	0.312	0.531	0.520	0.422	

The next validity test conducted was the discriminant validity test, which was assessed using the Heterotrait-Monotrait Ratio (HTMT) shown in Table 2. The HTMT is a method used to ensure that the measured construct is distinctly different from other constructs. The interpretation of this test compares the HTMT values against a commonly used threshold of 0.85. The results of the HTMT analysis, as presented in Table 3, reveal that FOMO has relatively low HTMT values with most constructs, such as Financial Literacy (0.103), Loss Aversion (0.131), and Moderating of FMO-RP-ID (0.199). These values indicate good discriminant validity between FOMO and its constructs. However, the HTMT value with Risk Perception (0.460) is higher than the others, though still below the threshold. This suggests a stronger relationship between FOMO and Risk Perception compared to other variables. For the Financial Literacy variable, its HTMT values with Herding Behaviour (0.608), Investment Decision (0.726), and Loss Aversion (0.720) are relatively high but remain below the threshold, indicating maintained discriminant validity among these variables. The correlation of Financial Literacy with Risk Perception (0.312) and Moderating of FMO-RP-ID (0.133) was lower, reflecting weaker relationships compared to the other variables.

The high HTMT values for herding behaviour indicate a significant correlation with investment decisions (0.788) and Loss Aversion (0.714), though still within acceptable limits. This suggests that Herding Behavior significantly influences investment decisions and tendencies toward loss aversion. Similarly, Investment Decision exhibits high HTMT values with Loss Aversion (0.762) and Herding Behaviour (0.788), confirming that investment decisions are strongly affected by herding behaviour and loss-aversion tendencies. Loss Aversion demonstrates a relatively strong relationship with Herding Behaviour (0.714) and Investment Decision (0.762), highlighting the central role of loss aversion in investment decision making. Overall, the HTMT results confirmed that discriminant validity among the constructs was adequately achieved. The relatively low HTMT values for most variable relationships support the clarity of differentiation among constructs, while the higher values in certain relationships (e.g., Herding Behavior with Investment Decision) indicate a strong interconnection among constructs in the research context. These results satisfy the requirements for reliability and validity, supporting their use for further analysis

Tabel 3 Coefficient of Determination

	R Square Adjusted
Fear Of Missing Out	0.126
Herding Behaviour	0.294
Investment Decision	0.629
Loss Aversion	0.385

The results of the coefficient of determination analysis, indicated by the adjusted R Square value, provide an overview of how much variation in the dependent variable can be explained by the independent variables in the research model. Based on Table 3, it was found that FOMO has an Adjusted R Square value of 0.126, indicating that the independent variables in the model can explain approximately 12.6% of the variation in FOMO. This suggests that there are still other factors outside the research model that significantly influence FOMO. Herding Behavior has an Adjusted R Square value of 0.294, meaning that about 29.4% of the variation in Herding Behavior can be explained by the independent variables in the model. This value indicates a moderate influence, although there is still room to consider other factors contributing to herding behaviour.

Investment Decision has an Adjusted R Square value of 0.629, indicating that the variables in the model can explain approximately 62.9% of the variation in investment decision-making. This high value reflects the model's strong capability to explain the factors that influence investment decisions. The adjusted R Square value for Loss Aversion is 0.385, meaning that approximately 38.5% of the variation in Loss Aversion can be explained by the independent variables in the model. This value indicates a moderate influence of the model on loss aversion tendencies. Overall, the varying adjusted R Square values reflect the model's differing levels of ability to explain each dependent variable.

Tabel 4 Predictive Relevance

	SSO	SSE	Q^2 (=1-SSE/SSO)
Fear Of Missing Out	1608.000	1442.044	0.103
Financial Literacy	4020.000	4020.000	
Herding Behaviour	2814.000	2423.046	0.139
Investment Decision	6834.000	4474.425	0.345
Loss Aversion	1206.000	877.095	0.273
Risk Perseption	3216.000	3216.000	

The Q^2 (Predictive Relevance) is shown in table 4, and a test using the blindfolding method is utilised to evaluate the model's predictive capability for endogenous constructs. As a general rule, a Q^2 value above 0 indicates that the model has predictive relevance, with higher values reflecting better predictive capability. Based on the test results, the Q^2 value for FOMO was 0.103, indicating low but significant predictive relevance. Herding Behavior had a Q^2 value of 0.139, suggesting better predictive capability compared to FMO. The Investment Decision variable has the highest Q^2 value of 0.345, reflecting excellent predictive capability within the model. The Q^2 value for Loss Aversion is 0.273, also indicating a fairly strong predictive capability. These results demonstrate that the model had adequate predictive relevance. Overall, the model exhibited good predictive capability for the key constructs, making it suitable for further analysis.

Hyphotesis Testing

The results of the model evaluation indicate that, overall, the research model meets the criteria for both the inner and outer models, allowing for hypothesis testing. The results of the direct hypothesis testing (Table 6) show that the effect of financial literacy on herding behaviour has a positive coefficient (0.544), with a p-value of 0.000 (p-value < 0.05). This indicates that financial literacy significantly influences herding behaviour; thus, H1 is accepted. The relationship between financial literacy and loss aversion has a coefficient of 0.621 with a p-value of 0.000 (p-value < 0.05), indicating that financial literacy significantly influences loss aversion; thus, H_2 is accepted. Similar results are shown in the testing of the effects of herding behaviour and loss aversion on investment decisions (H3: β: 0.455, p-value = 0.000 < 0.05; H4: β: 0.332, p-value = 0.000 < 0.05). This means that both herding behaviour and loss aversion significantly influence investment decisions; thus, H_3 and H_4 are accepted. In addition, testing the effects of herding behavior and loss aversion on fear of missing out (FOMO) (H_5: β: 0.428, p-value = 0.000 < 0.05; H_6: β: -0.146, p-value = 0.012 < 0.05) also gives similar results. This shows that both herding behaviour and loss aversion significantly influence FOMO; thus, H5 and H6 are accepted. However, the relationship between fear of missing out and investment decisions shows a different result. The test results indicate that the relationship

between Fear of Missing Out and Investment Decision has a negative coefficient (-0.071), with a p-value of 0.076 (P-values = 0.076 > 0.05). This means that Fear of Missing Out does not significantly influence investment decisions, and therefore H7 is rejected. The moderation test also shows that risk perception does not moderate the relationship between fear of missing out and investment decisions (β: -0.038, p-value: 0.215 > 0.05); thus, H_8 is rejected.

Tabel 5 Hypothesis Testing

	Hyphotesis	Path Coefficient	Standard Deviation	P-Values	Intepretation
H_7	FOMO → Investment Decision	-0.071	0.040	0.076	Rejected
H_1	Financial Literacy → Herding Behaviour	0.544	0.061	0.000	Accepted
H_2	Financial Literacy → Loss Aversion	0.621	0.055	0.000	Accepted
H_5	Herding Behaviour → FOMO	0.428	0.071	0.000	Accepted
H_3	Herding Behaviour → Investment Decision	0.455	0.045	0.000	Accepted
H_6	Loss Aversion → FOMO	-0.146	0.058	0.012	Accepted
H_4	Loss Aversion → Investment Decision	0.332	0.043	0.000	Accepted
H_8	Moderating of FOMO – RP – ID	-0.038	0.030	0.215	Rejected

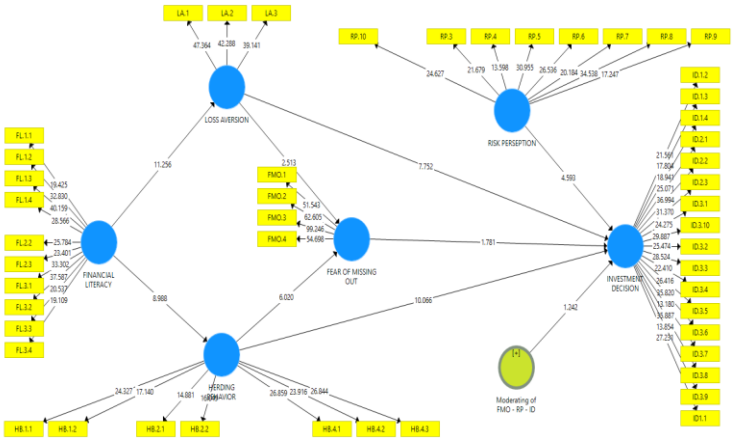

Figure 1. Diagram Path

The results of the indirect testing shown in Table 6 indicate that fear of missing out does not mediate the relationship between herding behaviour and investment decisions (H9: β: -0.030, p-value: 0.093 > 0.05); thus, H9 is rejected. The mediation test of fear of missing out on the relationship between loss aversion and investment decisions also shows the same result. The test results indicate that fear of missing out does not mediate the relationship between loss aversion and investment decisions (H10: β: 0.010, p-value: 0.168 > 0.05); thus, H10 is rejected. The path analysis results are illustrated in Figure 1.

Table 6. Mediation Effect

		Path Coefficient	Standard Deviation	P Values	Intepretation
H_9	Herding Behaviour → FOMO → Investment Decision	-0.030	0.018	0.093	Rejected
H_{10}	Loss Aversion → FOMO → Investment Decision	0.010	0.008	0.168	Rejected

Discussion

Financial Literacy and Herding Behaviour

This study provides deep insights into how financial literacy influences herding behaviour and its relevance to Dual Process Theory. Further discussion reveals that individuals with good financial literacy tend to understand investment risks and benefits rationally. Financial literacy plays a role in shaping investment behaviour through herding behaviour. This aligns with the findings of Baker et al. (2019), who reported that financial literacy is negatively correlated with the disposition effect and herding bias. Investors with low literacy tend to rely on friends' and peers' judgments because they provide a sense of security, while investors with high literacy have the means to absorb various information for rational decision-making so they can make independent decisions. Rasool and Ullah (2020) and Suresh (2024) also found that increasing financial literacy reduces the possibility of herding because investors can understand risk and not imitate market patterns. From the perspective of Dual Process Theory, financial literacy acts as a reinforcement of System 2 (analytical, rational, and slow), enabling individuals to rely more on rational cognitive processing in investment decisions, thereby reducing the negative influence of emotional biases that tend to emerge from System 1 (intuitive, emotional, and fast). Herding behaviour is a manifestation of System 1, where individuals tend to follow group decisions without in-depth evaluation. When financial literacy increases, System 2 is activated and allows investors to conduct independent analyses, evaluate information critically, and not be easily influenced by group behaviour. Investors with high financial literacy have the means to absorb various types of information for rational decision-making so that they can make independent decisions, which reflects the dominance of System 2 in the decision-making process.

Financial Literacy and Loss Aversion

This finding indicates that financial literacy plays a significant role in shaping investment behaviour through loss aversion. Lusardi (2019) demonstrated that financial literacy enables investors to evaluate risks and potential losses rationally. Garduno (2022) explained that financial literacy helps eliminate damaging overreactions to loss and encourages a broader perspective. Aren and Zengin (2016) and Xiao and Porto (2017) emphasised that individuals who understand diversification and portfolio risk, and have been presented with historical data of how investment products behave over time, do not panic (react emotionally) when loss occurs as part of an investment strategy. Within the framework of Dual Process Theory, loss aversion is an emotional response originating from System 1, where individuals tend to feel excessive fear of potential losses. Better understanding of risk through financial literacy helps individuals overcome the fear of losses (loss aversion) and make more balanced decisions by strengthening System 2 and controlling intuitive responses from System 1 that are often driven by emotions. When investors have adequate financial literacy, they can activate System 2 to evaluate losses as a normal part of a long-term investment strategy, not as a threat to be avoided at all costs. Financial literacy can be seen as contributing to the reduction of loss aversion due to increased analytical ability, self-control, and rational investment decision-making, all of which are functions of System 2.

Herding Behaviour, FOMO, and Investment Decision

This finding confirms that investors often follow crowds without considering their own risk tolerance (Monicah and Shiundu, 2020). Investors with limited knowledge feel more secure in copying other people's investment strategies (Dar & Hakeem, 2015). This

behaviour causes security prices to deviate from their fair value (Dewan & Dharni, 2019) and has a greater following effect among individual investors than institutional investors (Goodfellow et al., 2009). In the context of Generation Z, herding behaviour is a significant factor influencing stock investment decisions.

Investors frequently engage in herding behaviour when faced with market uncertainty, following the crowd without logical analysis. This pattern has been demonstrated to lead to the development of FOMO, or the emotional desire to invest out of concern for missing out on potential profits. Gupta and Shrivastava (2023) discovered that investors are more inclined to copy when they witness others making money, even without analytical support. Kaur et al. (2024) demonstrates how herding behavior in the cryptocurrency market exacerbates the effects of FOMO and increases risky speculation. Nguyen et al. (2024) highlight the reciprocal relationship between FOMO and herding, whereby both encourage rash investing decisions.

This finding is interesting because it contradicts several previous studies stating that FOMO has a positive impact on investment decisions. It has been demonstrated that FOMO affects decision-making in the context of consumer behaviour by creating an emotional need to act immediately (Kang & Ma, 2020). This phenomenon also happens to investors who are motivated by a desire to increase their profits and a fear of missing out on opportunities if they delay investing (Jajoo & Kumar Baag, 2025). Young generations' investment decisions are significantly impacted by FOMO, particularly those who are active on social media and exposed to digital financial trends. This finding indicates that although herding behaviour has a direct effect on investment decisions, this effect is not channelled through FOMO. Numerous behavioral finance studies demonstrate that psychological biases significantly influence investment choices. Rather than performing logical analysis, investors frequently respond to emotional and social pressure. Studies from Idris (2024) and Kang and Ma (2020) demonstrate how herding behaviour can be triggered by FOMO because people turn to group activities for psychological comfort.

From the perspective of Dual Process Theory, although FOMO is related to System 1 (fast responses triggered by emotions such as fear of missing out) and herding behaviour is also a manifestation of System 1, this study finds that both operate independently in influencing investment decisions. The path from herding behaviour through FOMO to investment decisions does not have a meaningful impact. This indicates that herding behaviour affects investment decisions directly and not through the emotional mechanism of FOMO. In other words, herding behaviour as a product of System 1 can directly drive investment decisions without having to go through FOMO as an intervening variable. This suggests that, in the context of Generation Z, social pressure to follow the group (herding) has direct power in shaping decisions, regardless of the presence or absence of fear of missing out.

Loss Aversion, FOMO, and Investment Decision

Research conducted by Febianti and Simatupang (2025) and Humairo and Panuntun (2022) demonstrates how investment behaviour is greatly influenced by loss aversion, particularly for young investors. This bias is strengthened by loss aversion, since investors who are afraid of losing money often delay making decisions (Ainia & Lutfi, 2019). These results confirm that loss aversion remains a significant factor that influences investment decisions. This finding indicates that loss aversion influences FOMO in addition to being

triggered by group behaviour. FOMO is influenced by loss aversion, which is the tendency of investors to prioritise preventing losses over pursuing gains, in addition to being triggered by group behaviour. Gupta and Shrivastava (2023) demonstrate how investors with a high degree of loss aversion frequently suffer from FOMO because of their fear of missing out on potential gains made by others. Kaur et al. (2024) discovered that the link between loss aversion and rash decisions is strengthened by the fear of missing opportunities, while Nguyen et al. (2025) noted that the emotional strain brought on by FOMO leads to a domino effect of impulsive asset purchases.

This finding indicates that loss aversion has a direct effect on investment decisions without going through FOMO as a mediator. Kuchler and Stroebel (2021) discovered that social circles like friends and family, who are seen as more reliable, frequently influence investment decisions. People are motivated to take action in order to avoid falling behind when they witness those around them making money. This reinforces the herding behaviour cycle, which irrationally raises security prices (Gherghina and Constantinescu, 2024). Nevertheless, the results of this study strengthen the argument that rational factors, through the strengthening of System 2, are more dominant in influencing investment decisions than emotional factors, such as FOMO. Loss aversion influences investment decisions directly, and the presence of FOMO as a mediator does not change this significant relationship. Within the Dual Process Theory framework, loss aversion and FOMO are both products of System 1, but they influence investment decisions through different and independent pathways. Loss aversion, as an aversion to loss, directly shapes investment preferences and choices, while FOMO, as anxiety about missing opportunities, has its own pathway of influence. This study shows that, in the context of Generation Z, loss aversion has a strong direct influence on investment decisions, without needing to be mediated by feelings of fear of missing out.

The Role of Risk Perception as Moderation

This finding indicates that risk perception does not strengthen or weaken the influence of FOMO on investment decisions. Risk assessment encompasses how investors define risks and their ability to evaluate them accurately. Risk assessment significantly influences the investment decision-making processes. Advanced financial literacy broadens investors' perspectives on risk and enhances their decision-making capacity. Within the Dual Process Theory framework, risk perception can be processed either by System 1 (intuitively, based on experience or emotion) or System 2 (analytically, based on data and calculation). However, in the context of FOMO's influence on Generation Z's investment decisions, the interaction between these two variables is not statistically significant. A possible explanation is that when FOMO (System 1) has already emerged, risk perception—whether processed intuitively or analytically—is not strong enough to moderate its influence on investment decisions.

CONCLUSION

The conclusion of this study indicates that financial behaviours such as FOMO, financial literacy, herding behaviour, loss aversion, and risk perception have a significant impact on stock investment decisions among Generation Z in East Java. The findings emphasise that financial literacy plays a crucial role in reducing behavioural biases, such as herding behaviour and loss aversion, which ultimately influence investment decisions. Furthermore, risk perception and FOMO were proven to act as mediators, revealing the dynamics of the interaction between intuitive and analytical processes in decision-

making, in line with the Dual Process Theory framework. Based on these findings, it is recommended that financial education programs focus more on enhancing financial literacy and managing psychological biases to support more rational investment decision-making among Generation Z. Additionally, investment service providers are encouraged to offer platforms that provide clear, accurate, and easily accessible information to reduce the risk of emotion-based decision-making. This research is expected to serve as a foundation for further studies exploring the role of psychological and behavioural factors in investment decision-making across various demographics and market contexts.

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