

BEHAVIORAL BIAS ON INVESTMENT DECISIONS: MEDIATION OF FOMO AND RISK PERCEPTION AND MODERATION OF RELIGIOSITY

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Abstract

This study investigates the role of behavioral biases in shaping investment decisions among young investors in Indonesia, with a focus on the mediating effects of fear of missing out (FOMO) and risk perception, as well as the moderating role of religiosity. Drawing upon behavioral finance and prospect theory, we collected data from 384 respondents and analyzed the structural relationships using partial least squares structural equation modeling (PLS-SEM). The research employed a quantitative, explanatory approach using survey methods. Data were collected from 384 respondents selected through proportional random sampling from a population of 12.8 million young investors in Indonesia with Single Investor Identification (SID), using a questionnaire with a 1–7 interval scale. The results show that behavioral biases significantly affect investment decisions, both directly and indirectly through FOMO and risk perception. Religiosity also moderates these relationships, guiding investors toward more ethical and rational choices. The study enriches behavioral finance by combining cognitive, emotional, and cultural perspectives and offers practical insights for improving financial literacy and reducing biased investment behavior.

Keywords

Behavioral Biases, Fear of Missing Out, Risk Perception, Religiosity, Investment Decision, Behavioral Finance.



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INTRODUCTION

In recent years, the growth of individual participation in capital markets has been remarkable worldwide, driven by digital trading platforms and easier access to financial information (Gabor & Brooks, 2020). Young investors represent a dynamic segment that is increasingly active in equity, mutual funds, and even cryptocurrencies. Indonesia reflects this global trend, with the number of investors holding a Single Investor Identification (SID) reaching 12.8 million as of 2024 (Chandra et al., 2025). This rapid growth has been fueled by technological advancements, government financial inclusion initiatives, and the popularity of online investment communities (Del Sarto & Ozili, 2025). Despite this expansion, studies show that investors often deviate from the assumptions of classical finance theory, which posits rational and utility-maximizing behavior (Mittal, 2022). Instead, they frequently rely on heuristics and are influenced by psychological factors. Such deviations, known as behavioral biases, can lead to suboptimal outcomes such as excessive trading, herding, or reluctance to adjust portfolios (Klein & Zwergel, 2023; Tversky & Kahneman, 2000). The prevalence of these biases among young investors raises questions about the quality and sustainability of their financial decisions (Rosdiana, 2020).

Behavioral finance research highlights biases such as overconfidence, herding, and status quo preference (Ahmad & Shah, 2020). Overconfident investors tend to overestimate their predictive ability, resulting in excessive risk-taking (He et al., 2023). Herding, where individuals follow the actions of others rather than independent analysis, contributes to market volatility (Bouteska & Regaieg, 2022; Scharfstein & Stein, 1990). Status quo bias, meanwhile, causes investors to persist with existing portfolios even when alternatives may be more beneficial (Godefroid et al., 2023). Collectively, these biases underscore the departure from rationality in investment decision-making. One emerging bias particularly relevant to younger investors is the fear of missing out, or FOMO (Argan et al., 2023; Martaningrat & Kurniawan, 2024). Social media platforms and online trading communities amplify this effect, creating pressure to join investment trends quickly to avoid being left behind. FOMO is associated with impulsive decisions, high trading frequency, and susceptibility to market hype, especially in volatile assets such as cryptocurrencies (Badru et al., 2023; Gerrans et al., 2023). This bias distorts rational evaluation and can magnify the effects of other behavioral tendencies as a critical mediator in investment decisions (Bo, 2023).

In addition to FOMO, risk perception plays a vital role in shaping how investors respond to market opportunities (Ivantchev & Ivantcheva, 2023). Investors differ in how they perceive and interpret risks, and these subjective assessments often diverge from objective measures of volatility or probability (Banerjee et al., 2025). Some individuals may underestimate risks due to optimism bias, while others may overestimate potential losses and act with excessive caution (Bairagi, 2021). Prior studies confirm that perceived risk influences both risk tolerance and actual investment behavior, mediating the relationship between behavioral tendencies and decision outcomes (M. Ramu et al., 2021). Beyond psychological biases, cultural and religious values also shape financial decision-making. Religiosity influences investors' perceptions of risk, ethical considerations, and portfolio preferences (Yasir et al., 2024). For Muslim investors, adherence to Shariah principles often guides decisions regarding permissible and prohibited investments, while religiosity can also serve as a psychological control that tempers impulsive behavior (Banuri et al., 2023; Primadona et al., 2025). Recent studies show that religiosity may moderate the influence of behavioral biases, social pressure, and risk perception on financial decisions (Chircop et al., 2019; Mouna & Jarboui, 2025). Thus, incorporating religiosity offers a richer perspective on the investment behavior in Indonesia.

Although previous research has examined behavioral biases, FOMO, risk perception, and religiosity separately, few studies have integrated these variables into a comprehensive framework. Existing work tends to emphasize either psychological or cultural factors in isolation, leaving an important gap in understanding how they interact in shaping investment outcomes (Godefroid et al., 2023; Klein & Zwergel, 2023). Moreover, empirical research that applies this integrated model to the Indonesian context remains scarce, despite the country's rapid growth in retail investors and its unique socio-religious environment (Rehman et al., 2024).

Within the present research framework, behavioral biases are treated as the independent variable that directly influences investment decisions, as well as indirectly through FOMO and risk perception. A deeper understanding of these biases is essential, as they provide a theoretical foundation for analyzing how psychological and social factors shape investment behavior, particularly among young investors who are heavily exposed to digital information and social media (Bo, 2023; N. Ramu et al., 2021; Rehman et al., 2024). From a theoretical perspective, behavioral biases such as herding and overconfidence can intensify FOMO. For example, overconfident investors may interpret peer successes as signals of missed opportunities, while herd behavior can pressure individuals to conform to group actions. These suggest that behavioral biases not only influence

decisions directly but also operate indirectly through FOMO. Hence, FOMO can be conceptualized as a mediator that transmits the effects of biases onto actual investment decisions (Klein & Zwergel, 2023). Behavioral biases often distort how individuals interpret risk. Overconfidence may lead investors to underestimate downside possibilities, while loss aversion can exaggerate the perceived likelihood of negative outcomes. Similarly, herding behavior may reduce independent risk assessments as individuals rely on the perceived wisdom of the crowd. Consequently, risk perception functions as a mediating variable through which behavioral biases exert their influence on investment decisions (Bo, 2023; Gerrans et al., 2023; Klein & Zwergel, 2023). In particular, religiosity may moderate the impact of FOMO and distorted risk perception on investment behavior. Highly religious individuals may be less prone to impulsive investment triggered by fear of missing out, as they place a stronger weight on long-term stability and ethical considerations. Likewise, religiosity may reduce the extent to which risk perception is distorted by cognitive biases, thereby promoting more rational decision-making (Mouna & Jarbou, 2025).

The conceptual framework integrates these relationships into a single model that reflects both direct and moderated mediation pathways. Similar integrated approaches have been adopted in behavioral finance research, where multiple psychological constructs are combined to explain investor behavior more comprehensively (Klein & Zwergel, 2023; Rehman et al., 2024).

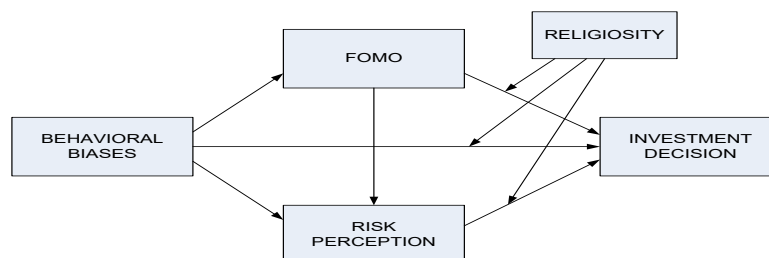


Figure 1. Conceptual Model

This model illustrates that behavioral biases affect investment decisions both directly and through mediating effects of FOMO and risk perception, while religiosity moderates the pathways leading to investment decisions. So, the objective of this study is to analyze the effect of behavioral biases on investment decisions among young investors in Indonesia. Specifically, the study investigates whether FOMO and risk perception mediate this relationship, and religiosity moderates the effects of behavioral biases, FOMO, and risk perception on investment decisions due to the novelty. We tested the model empirically using structural equation modeling to provide the complex relationship of psychological and cultural factors in financial decision-making.

METHOD

This quantitative explanatory study examines how behavioral biases influence investment decisions, mediated by fear of missing out (FOMO) and risk perception, and moderated by religiosity. Using a cross-sectional survey of Indonesian investors, it captures behavioral patterns and decision-making tendencies at a single time point. Data analysis employs Structural Equation Modeling with Partial Least Squares (SEM-PLS), suitable for complex models involving mediation and moderation. The design assesses both direct and indirect effects of behavioral biases while revealing the psychological and contextual mechanisms shaping financial behavior, consistent with the core objectives of behavioral finance research (Creswell & Creswell, 2017; Hair et al., 2019; Klein & Zwergel, 2023).

The study targets young Indonesian investors registered with a Single Investor Identification (SID). By 2024, around 12.8 million SID holders were recorded, with many being active young investors influenced by digital platforms, FOMO, and social trading (Asbaruna et al., 2023). Proportional random sampling was used to ensure balanced representation across subgroups such as age, gender, and region. Using Slovin's formula (5% margin of error, 95% confidence level), a minimum of 384 respondents was determined. This sample meets statistical and PLS-SEM requirements, ensuring representativeness, minimizing selection bias, and providing adequate power to test direct and indirect variable effects.

The study used a self-administered questionnaire with a seven-point Likert scale (1 = lowest, 7 = highest) to capture nuanced perceptions and attitudes (Russo et al., 2021). It included demographic items and measures of behavioral biases, FOMO, risk perception, religiosity, and investment decisions. A pilot test with 30 respondents improved clarity and validity. The survey was distributed online via social media, investor forums, and mailing lists. Participation was voluntary and anonymous, with informed consent obtained. Data were collected over four weeks, following ethical standards and yielding sufficient responses for analysis (Sekaran & Bougie, 2019).

The survey instrument was developed in the form of a self-administered questionnaire. This scale was selected to capture nuanced variations in respondents' perceptions and attitudes, providing greater measurement sensitivity compared to a five-point scale. The questionnaire was designed in several sections, beginning with demographic information (e.g., age, gender, education, income, and investment experience), followed by items measuring the study constructs: behavioral biases, FOMO, risk perception, religiosity, and investment decision. To ensure clarity and face

validity, the instrument was pretested with a small group of 30 respondents prior to the main data collection. Feedback from this pilot test was used to refine wording and improve comprehension. The survey was distributed through online channels such as social media groups, investment forums, and mailing lists associated with investor communities. Participation was voluntary, and respondents were informed of the study's academic purpose, the anonymity of their responses, and their right to withdraw at any time. This procedure ensured compliance with basic ethical research standards, including informed consent and confidentiality. Data collection was conducted over a four-week period, yielding sufficient responses for the analysis.

All constructs in this study were operationalized using measurement items adapted from established scales in prior research, with adjustments made to fit the Indonesian investment context.

- a. Behavioral Biases (BB): Measured using indicators reflecting status quo bias, herding bias, and overconfidence bias, adapted from Godefroid et al. (2023), Ahmad and Wu (2023) and Guluma (2021).
- b. Fear of Missing Out (FOMO): Assessed using items that capture the anxiety of being left behind in investment opportunities and the tendency to act based on peer influence or trending information, adapted from Badru et al. (2023) and Gerrans et al. (2023).
- c. Risk Perception (RP): Measured by respondents' subjective evaluation of investment uncertainty, including perceived likelihood of loss and volatility of returns, adapted from Bairagi (2021) and Ramu et al. (2021).
- d. Investment Decision (Inv): Assessed through items capturing rationality in investment choices, diversification practices, and consistency in trading behavior, adapted from Asbaruna (2023) and supported by prior behavioral finance studies.
- e. Religiosity (Rel): Measured by the extent to which individuals apply religious values to financial decisions, including ethical considerations, compliance with religious guidelines, and avoidance of prohibited practices, adapted from Mouna and Jarboui (2025) and Wijaya (2024).

To ensure the reliability and validity of measurements, constructs were tested using Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE). Items with factor loadings below the threshold of 0.70 were considered for removal, in line with recommendations for reflective measurement models (Hair et al., 2022). The analysis consisted of two stages: descriptive statistics and inferential modeling. Descriptive statistics summarized respondents' demographics (gender, age, education, income, investment experience) and explored

central tendencies of behavioral biases, FOMO, risk perception, religiosity, and investment decisions. Hypothesis testing used Structural Equation Modeling with Partial Least Squares (SEM-PLS) via SmartPLS. SEM-PLS was selected for its suitability in complex mediation-moderation models and its predictive orientation. The measurement model tested reliability (Cronbach's alpha, $CR \geq 0.70$) and validity (AVE, Fornell-Larcker, HTMT). The structural model assessed R^2 , f^2 , Q^2 , and path coefficients, with significance determined by bootstrapping (5,000 resamples, $p < 0.05$, $t > 1.96$). Mediation (FOMO, risk perception) and moderation (religiosity) effects were examined using the indirect effects produced by the bootstrapping method. This approach rigorously captured both direct and indirect relationships. The research focused on young Indonesian investors holding Single Investor Identification (SID) numbers, a group representing a rapidly expanding segment in Southeast Asia, offering an ideal context for studying behavioral biases, FOMO, and religiosity in investment behavior.

Based on this reasoning, the following hypotheses are proposed:

H1: Behavioral biases have a positive and significant effect on investment decisions.

H2: Behavioral biases have a significant positive effect on FOMO.

H3: FOMO has a significant positive effect on investment decisions.

H4: FOMO mediates the relationship between behavioral biases and investment decisions.

H5: Behavioral biases have a significant effect on risk perception.

H6: Risk perception has a significant effect on investment decisions.

H7: Risk perception mediates the relationship between behavioral biases and investment decisions.

H8: Religiosity moderates the relationship between FOMO and investment decisions, such that the effect is weaker among individuals with higher religiosity.

H9: Religiosity moderates the relationship between risk perception and investment decisions, such that the effect is weaker among individuals with higher religiosity.

H10: Religiosity moderates the relationship between behavioral biases and investment decisions, such that the effect is weaker among individuals with higher religiosity.

FINDINGS AND DISCUSSION

Findings

Descriptive Statistics

The profile of respondents provides an overview of the demographic characteristics of young investors involved in this study.

Table 1. Profile of Respondents.

Gender	Frequency	Percentage
Male	237	61.7
Female	147	38.3
Age	Frequency	Percentage (%)
Less than 26 years	16	4.2
Between 26 - 35	125	32.6
Between 36 - 45	243	63.3
Education	Frequency	Percentage (%)
High School	25	6.5
Bachelor	298	77.6
Post-graduate	61	15.9
Occupation	Frequency	Percentage (%)
Students	8	2.1
Civil Servants/State-Owned Enterprises	87	22.7
Police/Military	6	1.6
Private Employees	163	42.4
Entrepreneurs	75	19.5
Professionals/Freelancers	33	8.6
Others	12	3.1
Total	384	100.0

Source: Primary Data (2025).

Based on gender, the majority were male (61.7%) compared to female (38.3%). In terms of age, most respondents were between 36–40 years (63.3%), followed by those between 26–35 years (32.6%), and a small portion under 26 years (4.2%). Educational background was dominated by bachelor's degree holders (77.6%), with postgraduate (15.9%) and high school graduates (6.5%) making up the rest. Regarding occupation, private employees constituted the largest group (42.4%), followed by civil servants/state-owned employees (22.7%), entrepreneurs (19.5%), professionals/freelancers (8.6%), students (2.1%), police/military (1.6%), and others (3.1%). The dominant respondents in this study were male, above 35 years of age, with a bachelor's degree, and working as private employees.

Table 2. Descriptive Statistics of Variables.

Dimensions/Variables	Score	Ideal	Mean	SD	%Mean	Category
Status Quo Bias	5,475	8,064	4.75	1.38	53.6	High Bias
Herding Bias	5,115	8,064	4.44	1.56	49.1	Medium Bias
Overconfidence Bias	5,123	8,064	4.45	1.43	49.2	Medium Bias
Behavioral Biases	15,713	24,192	4.55	1.46	50.7	Medium Bias
Emotional Anxiety	4,886	8,064	4.24	1.69	46.3	Medium FOMO
Social Influence	4,936	8,064	4.28	1.57	46.9	Medium FOMO
Decision Pressure	4,626	8,064	4.02	1.69	43.1	Medium FOMO
FOMO	14,448	24,192	4.18	1.65	45.4	Medium FOMO
Risk Awareness	5,819	8,064	5.05	1.30	57.9	High
Risk Tolerance	5,721	8,064	4.97	1.32	56.7	High
Perceived Probability of Loss	5,914	8,064	5.13	1.29	59.1	High
Consequence Severity	6,024	8,064	5.23	1.29	60.4	High
Risk Perception	23,478	32,256	5.10	1.30	58.5	High
Belief & Faith	6,285	8,064	5.46	1.35	63.7	High
Practice & Ritual	6,115	8,064	5.31	1.39	61.5	High
Ethical & Moral Values	6,164	8,064	5.35	1.35	62.2	High
Religiosity	18,564	24,192	5.37	1.37	62.5	High
Return Expectation	5,963	8,064	5.18	1.37	59.7	Accurate
Risk Consideration	6,063	8,064	5.26	1.36	60.9	Accurate
Liquidity Preference	6,172	8,064	5.36	1.32	62.3	Accurate
Information Analysis	5,989	8,064	5.20	1.29	60.0	Accurate
Behavioral Considerations	5,889	8,064	5.11	1.27	58.7	Accurate
Investment Decision	30,076	40,320	5.22	1.32	60.3	Accurate

Source: Primary Data (2025).

Table 2 summarizes the descriptive statistics of the study variables. Behavioral biases recorded an overall mean of 4.55 (medium level), with status quo bias highest at 4.75 (high), while herding (4.44) and overconfidence (4.45) remained moderate. This suggests that respondents prefer maintaining existing strategies rather than following the crowd or showing overconfidence. FOMO had a mean of 4.18 (medium), mainly influenced by social factors (4.28), followed by emotional anxiety (4.24) and decision pressure (4.02), indicating that social comparison modestly drives investment anxiety.

Risk perception was high (mean = 5.10), with all sub-dimensions—risk awareness, tolerance, perceived probability of loss, and consequence severity—consistently elevated. Respondents demonstrate a strong ability to recognize and evaluate potential risks in investment. Religiosity was also high (mean = 5.37), particularly in belief and faith (5.46), ethical values (5.35), and practice (5.31), reflecting that faith-based values influence ethical investment decisions.

Investment decision achieved a mean of 5.22 (accurate), suggesting careful and informed decision-making. All dimensions, including return expectation, risk consideration, liquidity

preference, information analysis, and behavioral considerations, were categorized as accurate. Overall, respondents show moderate behavioral biases and FOMO but high-risk perception, religiosity, and rational decision-making. This pattern suggests that young investors are increasingly informed and cautious, aided by access to financial education and digital information. High religiosity may further reinforce ethical and balanced decision behavior, providing contextual insight into how cognitive, emotional, and spiritual factors interact in investment practices.

Measurement Model Assessment

In the measurement model assessment, reliability and convergent validity were evaluated using Cronbach's Alpha (CA), Composite Reliability (CR), and Average Variance Extracted (AVE).

Table 3. Reliability and Convergent Validity.

Construct	CA	CR	AVE
Behavioral Biases	0.793	0.878	0.706
FOMO	0.926	0.953	0.871
Risk Perception	0.931	0.951	0.829
Religiosity	0.916	0.947	0.857
Investment Decision	0.938	0.953	0.801

Source: SmartPLS Output (2025).

Table 3 shows that all constructs met the reliability and validity criteria ($CA > 0.70$, $CR > 0.70$, $AVE > 0.50$) (Hair et al., 2019). Behavioral Biases achieved $CA = 0.793$, $CR = 0.878$, and $AVE = 0.706$, confirming measurement consistency. FOMO, Risk Perception, Religiosity, and Investment Decision demonstrated very high reliability ($CA = 0.916$ – 0.938) and strong convergent validity ($AVE = 0.801$ – 0.871). Thus, the model has solid internal consistency. Discriminant validity, assessed using the HTMT ratio, showed values between 0.685 and 0.842, all below 0.90 (Sarstedt et al., 2022), confirming that constructs are empirically distinct and free from conceptual overlap, ensuring robust measurement quality.

Table 4. Discriminant Validity (HTMT).

Construct	1	2	3	4	5
Behavioral Biases (1)					
FOMO (2)	0.842				
Risk Perception (3)	0.811	0.714			
Religiosity (4)	0.702	0.685	0.778		
Investment Decision (5)	0.713	0.715	0.816	0.812	

Source: SmartPLS Output (2025).

Overall, the loading values of each construct (both at the dimension and variable levels) are above the recommended threshold of 0.70, indicating that the indicators strongly represent their underlying latent constructs (Hair et al., 2019). This further reinforces the adequacy of the

measurement model and supports the conclusion that the constructs are reliable, valid, and distinct, as illustrated in Figure 2. Having established the soundness of the measurement model, the next step is to assess the structural model, which focuses on examining the relationships among constructs and testing the proposed hypotheses.

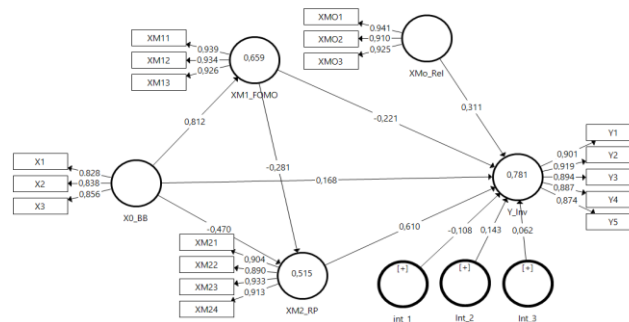


Figure 2. Overall PLS Model

Figure 2 illustrates the structural model generated in SmartPLS. Circles represent latent constructs, rectangles indicate observed indicators, and single-headed arrows show the relationships between them. Outer loadings display how well each item measures its construct, while path coefficients reflect the strength and direction of hypothesized effects. R^2 values indicate the variance explained in each endogenous variable. Overall, the model shows that Behavioral Biases strongly influence FOMO and negatively affect Risk Perception, both significantly shaping Investment Intention. Religiosity moderates these relationships, highlighting its ethical and value-based influence on investment behavior.

Structural Model Assessment

First, in the structural model assessment, the focus is on evaluating the relationships among the latent constructs and the model's predictive accuracy. This involves examining goodness-of-fit indicators such as the coefficient of determination (R^2), predictive relevance (Q^2), and effect size (f^2), about how well the model explains and predicts the endogenous variables (Hair et al., 2019). After that, the analysis proceeds by presenting the direct effects between variables to test the proposed hypotheses.

Table 5. Coefficient of Determination.

Model	R Square	R Square Adjusted
FOMO	0.659	0.658
Risk Perception	0.515	0.512
Investment Decision	0.781	0.777

Source: SmartPLS Output (2025).

The coefficient of determination (R^2) provides an indication of the explanatory power of the model for each endogenous construct. As presented in Table X, the R^2 value for FOMO is 0.659, suggesting that behavioral biases account for approximately 65.9% of the variance in FOMO. This leaves 34.1% ($1 - R^2$) unexplained, which may be attributed to other psychological or contextual factors not included in the model. For Risk Perception, the R^2 value is 0.515, indicating that behavioral biases and FOMO together explain 51.5% of the variance in risk perception, while 48.5% remains unexplained. This reflects a moderate level of explanatory power, consistent with prior studies where risk perception is shaped by both internal cognitive biases and external information cues.

The highest explanatory power is observed for Investment Decision, with an R^2 value of 0.781, meaning that behavioral biases, FOMO, risk perception, and religiosity collectively explain 78.1% of the variance in investment decisions. The residual variance of 21.9% indicates that while the model captures the majority of influencing factors, additional elements such as market conditions or financial literacy may still play a role. Taken together, these results demonstrate that the model has substantial predictive accuracy, particularly in explaining investment decision-making, while still leaving space for further exploration of complementary factors in future research.

Table 6. Predictive Relevance.

	SSO	SSE	$Q^2 (=1-SSE/SSO)$
Behavioural Biases	1152	1152	
FOMO	1152	495.193	0.57
Risk Perception	1536	886.169	0.423
Religiosity	1152	1152	
Investment Decision	1920	731.373	0.619

Source: SmartPLS Output (2025).

The predictive relevance of the model was assessed using the Stone–Geisser’s Q^2 statistic, where values greater than zero indicate that the model has predictive relevance for a given endogenous construct (Hair et al., 2019). As shown in Table 6, the Q^2 value for FOMO is 0.570, which suggests a strong predictive relevance, indicating that behavioral biases explain a substantial portion of the variance in FOMO. Similarly, Risk Perception yields a Q^2 value of 0.423, reflecting moderate predictive relevance. The highest Q^2 value is observed for Investment Decision at 0.619, demonstrating the strong predictive power of the model in explaining investment behavior. In contrast, Behavioral Biases and Religiosity, as exogenous constructs, show no Q^2 values, which is consistent with expectations since Q^2 is only calculated for endogenous variables. Overall, these

results confirm that the model possesses satisfactory predictive relevance, particularly with respect to FOMO and Investment Decision.

Table 7. Effect Size.

Path	f ² Value	Effect Size
BB → FOMO	1.935	Substantial
BB → RP	0.155	Medium
BB → Inv	0.037	Small
FOMO → RP	0.056	Small
FOMO → Inv	0.066	Small
RP → Inv	0.615	Large
Religiosity → Inv	0.164	Medium
Int_1 → Inv	0.016	Small
Int_2 → Inv	0.032	Small
Int_3 → Inv	0.007	None/Negligible

Source: SmartPLS Output (2025).

The effect size (f^2) analysis provides additional insight into the relative contribution of each predictor variable to the structural model. As shown in Table X, the path from Behavioral Biases to FOMO ($f^2 = 1.935$) demonstrates a substantial effect, indicating that behavioral biases play a dominant role in shaping investors' fear of missing out. Similarly, the path from Risk Perception to Investment Decision ($f^2 = 0.615$) shows a large effect, suggesting that how investors perceive risk strongly determines their investment choices. Moderate effects are observed in the paths Behavioral Biases to Risk Perception ($f^2 = 0.155$) and Religiosity to Investment Decision ($f^2 = 0.164$), highlighting that both psychological and spiritual factors contribute meaningfully to decision-making processes. Meanwhile, several paths present small but notable effects, including Behavioral Biases to Investment Decision ($f^2 = 0.037$), FOMO to Risk Perception ($f^2 = 0.056$), FOMO to Investment Decision ($f^2 = 0.066$), and interaction term Int_2 to Investment Decision ($f^2 = 0.032$). These suggest secondary but supportive influences within the model. On the other hand, the interaction terms Int_1 ($f^2 = 0.016$) and Int_3 ($f^2 = 0.007$) show negligible contributions, implying that these moderating effects do not meaningfully enhance the explanatory power of the model. Overall, the f^2 results confirm that behavioral biases and risk perception are the most influential drivers in this framework, while religiosity and FOMO serve as complementary but less dominant factors.

Table 8. Direct Effect

Path	Coefficient (B)	Bootstrap	SD	T-Value	P-Value	Result
Behavioral Biases → FOMO	0.812	0.812	0.017	48.628	0.000	Supported
Behavioral Biases → Risk Perception	-0.470	-0.474	0.058	8.056	0.000	Supported
Behavioral Biases → Investment Decision	0.168	0.168	0.043	3.879	0.000	Supported
FOMO → Risk Perception	-0.281	-0.280	0.063	4.478	0.000	Supported
FOMO → Investment Decision	-0.221	-0.219	0.050	4.463	0.000	Supported
Risk Perception → Investment Decision	0.610	0.607	0.064	9.463	0.000	Supported
Religiosity → Investment Decision	0.311	0.312	0.054	5.764	0.000	Supported

Note: int = interaction.

The results of the direct effects analysis are presented in Table 8. The path from Behavioral Biases to FOMO shows a very strong positive and significant effect ($\beta = 0.812$, $t = 48.628$, $p < 0.001$), supporting the hypothesis that behavioral biases directly increase FOMO. Similarly, Behavioral Biases negatively influence Risk Perception ($\beta = -0.470$, $t = 8.056$, $p < 0.001$) and positively affect Investment Decision ($\beta = 0.168$, $t = 3.879$, $p < 0.001$). Regarding the moderating role, Religiosity has a significant positive direct effect on Investment Decision ($\beta = 0.311$, $t = 5.764$, $p < 0.001$). These findings confirm that behavioral biases play a central role in shaping both mediators and the final investment outcome.

Mediation Analysis

The mediation analysis in Table 9 demonstrates that the indirect pathways are all statistically significant.

Table 9. Indirect (Mediation) Effect.

Path	Coefficient (β)	Bootstrap	SD	t-value	p-value	Result
Behavioral Biases → FOMO → Investment Decision	-0.180	-0.178	0.040	4.488	0.000	Supported
Behavioral Biases → Risk Perception → Investment Decision	-0.287	-0.288	0.044	6.467	0.000	Supported
Behavioral Biases → FOMO → Risk Perception → Investment Decision	-0.139	-0.138	0.037	3.783	0.000	Supported

Source: SmartPLS Output (2025)

First, Behavioral Biases influence Investment decisions through FOMO with a negative indirect effect ($\beta = -0.180$, $t = 4.488$, $p < 0.001$), indicating that heightened behavioral biases indirectly reduce investment quality by increasing FOMO. Second, the path through Risk Perception also mediates the relationship ($\beta = -0.287$, $t = 6.467$, $p < 0.001$), suggesting that behavioral biases decrease risk perception, which in turn weakens investment decision-making. Furthermore, a sequential mediation occurs where Behavioral Biases affect FOMO, which then influences Risk Perception, and subsequently Investment Decision ($\beta = -0.139$, $t = 3.783$, $p < 0.001$). These results confirm that both single and sequential mediations are significant, emphasizing the critical role of psychological and cognitive mechanisms in translating behavioral biases into investment decisions.

Moderation Analysis

Table 10 shows the moderating role of religiosity on the relationship between behavioral biases, FOMO, risk perception, and investment decision.

Table 10. Moderation Effect.

Path (Interaction)	Coefficient (β)	Bootstrap	SD	t-value	p-value	Result
Behavioral Biases $\times$ Religiosity $\rightarrow$ Investment Decision	-0.108	-0.103	0.045	2.386	0.017	Supported
FOMO $\times$ Religiosity $\rightarrow$ Investment Decision	0.143	0.139	0.043	3.313	0.001	Supported
Risk Perception $\times$ Religiosity $\rightarrow$ Investment Decision	0.062	0.056	0.054	1.140	0.255	Not Supported

Source: SmartPLS Output (2025).

The first interaction (Behavioral Biases $\times$ Religiosity $\rightarrow$ Investment Decision) is significant ($\beta = -0.108$, $t = 2.386$, $p = 0.017$), indicating that religiosity weakens the direct influence of behavioral biases on investment decisions. The second interaction (FOMO $\times$ Religiosity $\rightarrow$ Investment Decision) is also significant and positive ($\beta = 0.143$, $t = 3.313$, $p = 0.001$), suggesting that higher religiosity strengthens the negative effect of FOMO, thereby helping investors make more rational decisions. However, the third interaction (Risk Perception $\times$ Religiosity $\rightarrow$ Investment Decision) is not significant ($\beta = 0.062$, $t = 1.140$, $p = 0.255$), meaning religiosity does not moderate the influence of risk perception on investment decisions. Overall, these results demonstrate that religiosity can play a corrective role against behavioral biases and FOMO, but not necessarily in shaping the impact of risk perception.

Discussion

This study examined how behavioral biases shape investment decisions, with fear of missing out (FOMO), risk perception, and religiosity as mediating and moderating mechanisms. The findings strongly support the proposed framework, confirming nearly all hypotheses. Behavioral biases exert both direct and indirect effects on investment decisions, aligning with behavioral finance literature (Klein & Zwergel, 2023; Asbaruna et al., 2023). Behavioral biases significantly influence FOMO and risk perception, which in turn mediate investment behavior (Kumar et al., 2024). This supports prior studies showing that FOMO drives impulsive investment among youth (Badru et al., 2023; Bo, 2023), while risk perception shapes willingness to invest (Bairagi, 2021; Ramu et al., 2021). Religiosity also moderates decision-making, supporting the view that faith-based considerations affect financial behavior (Banuri et al., 2023; Mouna & Jarboui, 2025). Together, these results confirm that psychological, social, and cultural dimensions jointly explain investment decisions.

Behavioral biases directly influence investment behavior, confirming that investors act under heuristics rather than full rationality. This aligns with prospect theory (Asbaruna et al., 2023; Regenwetter et al., 2022), which states that people evaluate gains and losses asymmetrically. Biases such as overconfidence and loss aversion systematically affect financial decisions (Sharma, 2024; Tahir & Danarsari, 2023). Hence, traditional finance theories must incorporate psychological elements (Almansour et al., 2023; Che Hassan et al., 2023). Asbaruna et al. (2023) found that behavioral factors strongly affect young Indonesian investors in uncertain conditions, consistent with this study's results.

Certain behavioral biases stood out, particularly herding behavior and overconfidence. Many investors follow market trends or trust their judgment despite incomplete information (Badola et al., 2023). Similar studies found that herding increases market volatility (Bouteska & Regaieg, 2022) and overconfidence distorts trading (He et al., 2023). These patterns show young investors' vulnerability to peer influence and optimism. Thus, financial education and awareness programs are essential to help them recognize biases and improve decision-making (Inghelbrecht & Tedde, 2024).

FOMO significantly mediates the link between behavioral biases and investment decisions, showing that emotional pressure drives decisions (Kumar et al., 2024). Digital platforms amplify this effect by exposing investors to trends and peer comparisons (Rai et al., 2024). Gerrans et al. (2023) found that FOMO correlates with herding and status quo bias in stock and crypto markets. FOMO

thus becomes a bridge between biases and behavior, explaining risky, emotionally driven choices. This expands behavioral finance theory by showing that emotional rather than cognitive factors can dominate. Rehman et al. (2024) found similar results in digital asset trading, confirming that FOMO translates bias into action.

Risk perception also mediates the relationship between behavioral biases and investment decisions. Stronger biases lower perceived risk, encouraging aggressive investments. Risk perception acts as a cognitive filter for uncertainty (Klein & Zwergel, 2023; Ramu et al., 2021). When biases distort this perception, investors misjudge risk, as noted by Bairagi (2021). Compared to FOMO's emotional role, risk perception represents a cognitive mechanism, together explaining how emotions and reasoning interact in finance (Mittal, 2022).

Religiosity moderates the link between behavioral biases and investment decisions. It reinforces ethical considerations, reducing impulsive actions. Religious values influence sustainable and moral investing (Klein & Zwergel, 2023). Among young Indonesian Muslims, religiosity often guides investment choices (Mouna & Jarboui, 2025). It promotes rationality and discourages speculative behavior (Bo, 2023; Banuri et al., 2023). Thus, religiosity can shape preferences and buffer against FOMO and emotional trading.

Overall, behavioral biases affect investments both directly and indirectly through FOMO and risk perception (Klein & Zwergel, 2023). Religiosity refines these effects, promoting rationality (Mouna & Jarboui, 2025). Integrating cognitive, emotional, and ethical dimensions offers a holistic view of investment behavior (Banuri et al., 2023). For policymakers, financial literacy combined with value-based education can foster responsible investing (Gabor & Brooks, 2020). For educators, curricula should integrate behavioral awareness (Mittal, 2022). For financial platforms, ethical nudges can limit impulsive trading (Bo, 2023). In the digital era, understanding behavioral biases with religiosity as a moderator is vital for guiding young investors (Asbaruna et al., 2023).

CONCLUSION

This study explored how behavioral biases affect investment decisions, with FOMO and risk perception as mediators and religiosity as a moderator. The results show that biases influence decisions both directly and indirectly, while religiosity offers moral grounding that reduces impulsive behavior. Theoretically, the study extends behavioral finance by integrating cognitive, emotional, and value-based dimensions. Practically, it urges investors to recognize their biases,

policymakers to link financial literacy with ethics, and service providers to design platforms that encourage rational investing. However, the study's self-reported data and focus on young Indonesian investors limit generalization. Future research should include broader, cross-cultural samples and apply experimental or longitudinal methods to strengthen causal inference. Further exploration of fintech nudges, sustainable investing, and peer influence on digital platforms is also recommended to deepen understanding of how psychological, social, and spiritual factors collectively shape investment behavior in modern financial contexts.

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