The Effect of Overconfidence on Trading Activity and Investment Returns in Simulated Stock Markets

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ABSTRACT

This study is motivated by increasing market volatility and the growing complexity of investment decision-making, where investor behavior does not always reflect rational considerations, highlighting the importance of psychological biases, particularly overconfidence. The objective of this study is to examine the effect of overconfidence levels on stock trading activity and investment returns, as well as to analyze differences in investor responses to market information in the form of good news and bad news. This study employs an experimental design involving 68 undergraduate students, who are classified into high- and low-overconfidence groups based on calibration test results. Trading activity is measured using trading frequency and volume, while investment performance is assessed through returns. Data are analyzed using independent samples t-tests and paired samples t-tests. The findings indicate that investors with high overconfidence exhibit significantly higher trading frequency and volume compared to those with low overconfidence under both good and bad news conditions. Moreover, highly overconfident investors tend to be less responsive to differences in market information, whereas low-overconfidence investors demonstrate more adaptive behavior. The results also reveal that overconfidence negatively affects investment returns. In conclusion, overconfidence significantly influences trading behavior and investment performance, contributing to market inefficiency.

Keywords: *Experimental Design, Investment Return, Overconfident, Trading Activity.*

INTRODUCTION

The development of the capital market in recent years has been marked by increased volatility, accelerated information flow, and high economic uncertainty. These conditions place investors in an increasingly complex decision-making situation, where responses to market information often do not fully reflect fundamental considerations. In this context, investor behavior has become an important factor influencing trading activity and the formation of financial asset prices, as it has been emphasized that market dynamics are greatly influenced by how market participants perceive and respond to information (Huber et al., 2019; Mahrurin et al., 2024; Setyaningrum & Rusmana, 2025).

Conventional financial approaches assume that investors act rationally and can process all relevant information optimally. However, empirical findings show that the assumption of rationality is often violated, especially when decisions are made under conditions of uncertainty and cognitive limitations. Cognitive biases can distort investors' perceptions, causing market prices to deviate from their fundamental values (Ahmad et al., 2025; Aminarty et al., 2025). This discrepancy has led to the development of behavioral finance as an alternative approach that integrates psychological aspects to

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explain investor behavior and market anomalies that cannot be explained by the efficient market hypothesis (Bansal, 2022; Rehman et al., 2025).

One of the most prominent psychological biases in behavioral finance literature is overconfidence. Overconfidence refers to the tendency of individuals to overestimate their knowledge, abilities, and the accuracy of the information they possess, while ignoring publicly available information (Singh et al., 2024; Wijoyo & Arifin, 2024). In a risky capital market environment, this behavior may encourage investment decisions that are not entirely rational and that deviate from the principle of maximizing expected utility (Fatkhurrozi et al., 2024). Overconfident investors tend to have excessive confidence in their personal judgments and underestimate the uncertainty inherent in investment decisions (Costa et al., 2025).

Previous research shows that overconfidence has significant implications for stock trading activity. Overconfident investors tend to trade more frequently and in larger volumes, which ultimately leads to excessive trading behavior (Trinugroho & Sembel, 2011; Fatkhurrozi et al., 2024; Nurmala & Situngkir, 2025). This high trading activity is not always accompanied by better investment performance; in fact, it often negatively affects returns due to increased transaction costs and mispricing (Bregu, 2020; Inghelbrecht & Tedde, 2024; Singh et al., 2024).

In addition to affecting trading intensity, overconfidence also shapes how investors process and respond to market information. Information containing positive (good news) or negative (bad news) signals can be interpreted differently by investors with different levels of overconfidence. Psychology literature shows that overconfident individuals tend to overemphasize information that supports their beliefs and downplay information that contradicts them (Irawan, 2025; Shojaei, 2025). As a result, trading decisions are influenced not only by the content of the information but also by the psychological characteristics of investors in how they process it.

Although studies on investor overconfidence have been widely conducted, empirical evidence examining the relationship between overconfidence, trading activity, and returns in the context of emerging markets, particularly using an experimental approach, is still relatively limited. Therefore, this study aims to empirically test the difference in investor overconfidence levels on the frequency and volume of stock trading and the returns generated, using an experimental design and grouping investors based on calibration tests. In addition, this study examines differences in investor responses to good and bad news in the investment decision-making process. This study offers a novel contribution by integrating overconfidence measurement based on calibration tests and market information treatment into experimental designs in the Indonesian capital market, thereby providing empirical evidence on the role of investor psychological biases in shaping trading activity and investment performance in emerging markets.

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

Behavioral Finance

The development of behavioral finance literature emerged as a response to the limitations of conventional financial theory in explaining investor behavior and persistent market anomalies. Classical models assume fully rational investors who process information efficiently and update beliefs according to Bayesian principles. However, substantial empirical evidence reveals systematic deviations from rationality, including mispricing, excess volatility, momentum effects, and speculative bubbles that cannot be adequately explained by standard frameworks. Behavioral finance, therefore, integrates psychological insights into economic decision-making to explain how cognitive limitations, emotional responses, and social influences shape investor behavior and market outcomes (Redawati & Rizani, 2023; Pei, 2024; Prasetyo et al., 2024). Prior studies further indicate that investors often overreact to market information, causing asset prices to deviate from their fundamental values, particularly in environments characterized by uncertainty and rapid information flow (Hijriahni & Sembiring, 2023; Seok et al., 2024; Setyaningrum & Rusmana, 2025).

In such contexts, investor decision-making is frequently influenced by heuristics, which are simplified cognitive strategies used to process complex information. While heuristics can enhance efficiency, they often lead to systematic biases such as representativeness, availability, and anchoring and adjustment, increasing the likelihood of suboptimal decisions (Sudirman et al., 2023; Cuandra et al., 2025; Mardiana et al., 2025). These biases encourage investors to rely on limited or irrelevant information and to underestimate associated risks (Jain et al., 2023; Oktori & Binu, 2024). Furthermore, prospect theory explains that individuals evaluate outcomes relative to a reference point, exhibiting risk aversion in gains and risk-seeking behavior in losses (Wei, 2023; Artavanis & Eksi, 2025). Investor responses to good and bad news are inherently asymmetrical, indicating that trading decisions are shaped not only by the nature of information but also by how potential gains and losses are perceived.

Excessive Trading Theory and Overconfidence

Within the behavioral finance framework, overconfidence is one of the most robust and consistently documented cognitive biases affecting investor behavior. Overconfidence reflects a systematic tendency to overestimate the precision of one's private information, the accuracy of one's beliefs, and the quality of one's forecasting ability (Ruslim, 2021; Abdin et al., 2025; Xu, 2025). This bias is closely related to miscalibration, illusion of control, and self-attribution bias, which together reinforce investors' beliefs that their successes are driven by skill rather than luck.

Overconfident investors tend to underestimate uncertainty, neglect downside risks, and place excessive weight on their own judgments relative to public information (Sharma & Prajapati, 2024; Nabilah et al., 2025). Several empirical studies by Inghelbrecht and Tedde (2024) and Renerken (2024) show that overconfidence is closely linked to stock trading activity. Overconfident investors tend to trade more frequently and in larger volumes because they believe they have superior information or abilities compared to other market participants. Sasono et al. (2024) found that excessive trading behavior driven by overconfidence negatively impacts investment performance. This finding is reinforced by other studies showing a positive relationship between overconfidence and the frequency and volume of stock trading (Asri & Santi, 2025; Nurmala & Situngkir, 2025).

H1: Investors with high overconfidence exhibit a higher trading frequency and larger trading volumes compared to investors with low overconfidence.

Market Information and Overconfidence

The literature further suggests that overconfidence shapes how investors interpret, filter, and respond to market information. Overconfident investors display confirmation bias, selectively attending to signals that reinforce their prior beliefs while discounting or rationalizing away contradictory evidence (Kumar & Kumar, 2024; Nabilah et al., 2025). When confronted with good news, highly overconfident investors are more likely to interpret the information as validation of their private signals and thus increase trading intensity. Positive information strengthens their confidence in personal judgments and encourages more aggressive trading behavior, reflected in higher trading frequency and larger trading volume. Even when market conditions become uncertain, overconfident investors tend to rely heavily on their own assessments rather than objectively reevaluating available information. As a result, they are more likely to sustain high levels of trading activity because they believe their investment decisions are superior to those of other market participants.

When faced with bad news, overconfident investors tend to underreact, delay revising their beliefs, or attribute negative outcomes to temporary external factors rather than to flaws in their own judgments. This tendency causes them to maintain relatively high trading activity despite unfavorable market signals. In contrast, investors with lower levels of overconfidence are more likely to update beliefs symmetrically in response to both

positive and negative information and adjust their trading behavior accordingly (Singh et al., 2024). These investors process information more cautiously and are generally more responsive to changing market conditions. Consequently, trading frequency and trading volume among low-overconfidence investors are more likely to vary depending on whether the information received is good news or bad news. These behavioral differences imply that the effect of market information on trading activity is conditional on the investor's level of overconfidence.

H2a: Investors with high overconfidence exhibit higher trading frequency and larger trading volume compared to investors with low overconfidence when there is good news.
H2b: Investors with high overconfidence exhibit higher trading frequency and larger trading volume compared to investors with low overconfidence when faced with bad news.
H3a: Investors with high overconfidence show no difference in trading frequency and volume when there is good news or bad news.
H3b: Investors with low overconfidence exhibit differences in trading frequency and volume when there is good news and bad news.

Investment Return and Overconfidence

Investment returns represent the economic outcome of trading decisions and provide a natural benchmark for evaluating investor performance. Overconfidence, defined as excessive trust in one's own abilities and judgments, plays a critical role in shaping these outcomes (Aji & Astuti, 2023). Beyond influencing trading intensity, overconfidence has important implications for investment returns. Overconfident investors tend to trade excessively, underestimate transaction costs, and adopt suboptimal timing strategies, such as buying after price increases and selling after price declines. These behaviors reduce net returns and increase exposure to downside risk (Kumar & Kumar, 2024; Sasono et al., 2024). In many cases, excessive confidence also causes investors to ignore market signals and underestimate potential losses during volatile market conditions.

Moreover, excessive trading can amplify volatility in individual portfolios and increase the likelihood of losses due to premature selling or overexposure to risky assets. The inability to objectively evaluate new information and correct prior misjudgments leads to repeated decision errors that accumulate over time, ultimately undermining long-term investment performance. This pattern highlights how cognitive bias not only distorts decision-making processes but also generates tangible financial consequences, reinforcing the argument that psychological factors are central to understanding variations in investor returns (Bao & Li, 2020).

H4: Investment returns differ between investors with high and low levels of overconfidence.

Figure 1 presents a conceptual framework showing that investment decisions are influenced by investor overconfidence, which differentiates investors into high- and low-overconfidence groups. These psychological differences shape how investors process market information and determine their trading activity, which subsequently affects investment returns. High-overconfidence investors tend to trade more aggressively, while low-overconfidence investors act more cautiously. Market information (good or bad news) moderates this relationship by influencing investor confidence and trading intensity, with good news generally increasing trading activity and bad news eliciting different responses across investor types. Although prior research on overconfidence is extensive, most studies focus on developed markets and rely on secondary data or proxy measures. Experimental evidence using direct overconfidence measurements, information treatments, and simultaneous analysis of trading behavior and returns in emerging markets remains limited. This study addresses this gap by providing

experimental evidence from the Indonesian capital market to enhance understanding of behavioral finance in developing-market contexts.

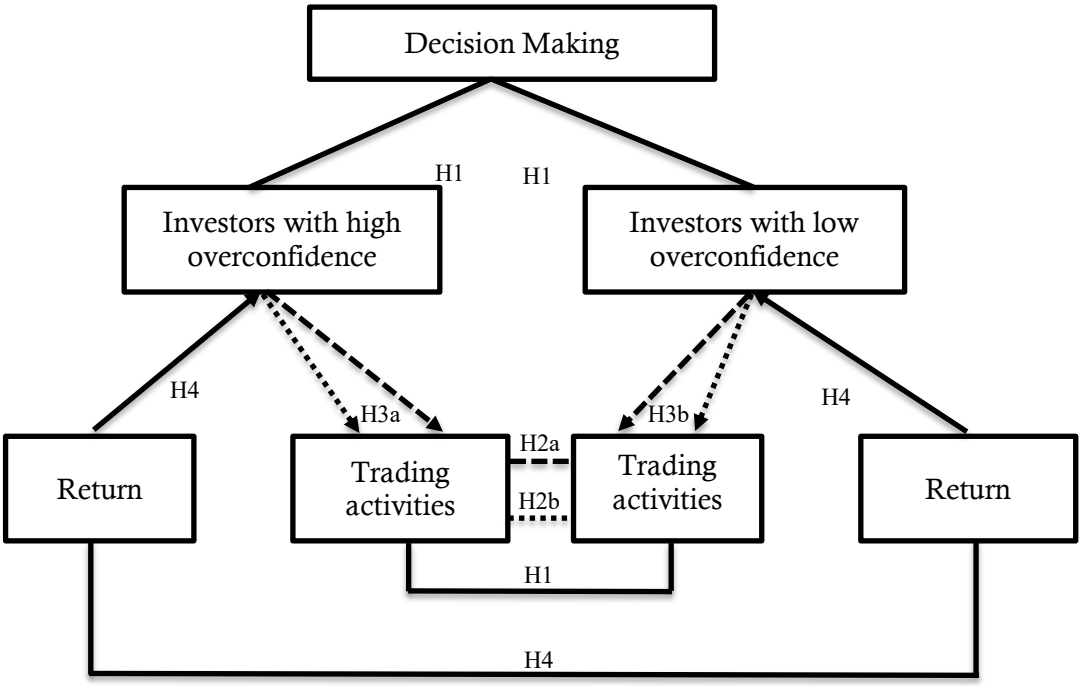

Figure 1. Conceptual Framework

RESEARCH METHODS

This study uses an experimental design to examine the effect of investor overconfidence on stock trading activity and returns. The experimental approach was chosen because it allows for control of decision-making conditions and direct observation of investor behavior in response to market information. The subjects in this study were undergraduate students from the Faculty of Economics and Business at Trunojoyo University, Madura, who had knowledge of stock trading or experience in stock trading, having at least participated in a stock trading simulation. There were 68 subjects. The main focus of this study was to identify differences in investor behavior across levels of overconfidence when faced with positive (good news) and negative (bad news) information, and to examine the implications for trading activity and investment performance.

The main variables in this study include investor overconfidence, stock trading activity, and investment returns. The level of investor overconfidence is measured using a calibration test that compares respondents' subjective confidence levels with the accuracy of their objective responses. Based on the calibration test results, respondents were grouped into two categories: investors with high and low levels of overconfidence. This grouping was used to analyze differences in investment behavior between groups in a more structured manner.

Stock trading activity is measured by two main indicators, namely trading frequency and trading volume. These two indicators reflect the intensity of investors' trading decisions during the experimental period. Investment returns are used as an indicator of investment performance to assess the economic consequences of trading behavior among investors with different levels of overconfidence. In experimenting, respondents received treatment in the form of market information classified as good or bad news. This treatment aimed to test whether investors' responses to trading activities differed when the information received was encouraging or discouraging. Thus, this study not only examined differences in trading activities between overconfident groups but also tested differences in investor trading activities under different information conditions.

Data analysis was performed using a mean difference test to test the research hypothesis. Differences in trading activity and returns between investors with high and low overconfidence were tested using an independent samples t-test. Meanwhile, differences in investor trading activity in response to good and bad news were tested using a paired-samples t-test. This analytical approach was used to ensure that the observed differences were statistically significant and reflected the influence of overconfidence levels on investment behavior and outcomes. The experimental design, variable measurements, and analysis techniques used in this study were intended to provide empirical evidence on the role of overconfidence bias in shaping stock trading and investment returns, particularly in the context of investor decision-making influenced by market information.

RESULTS

The experiment's validity was first confirmed through a manipulation check. The average response values of participants above the midpoint of the measurement scale indicate that the trading mechanism, the experimental flow, and the information provided during the session were well understood. Thus, the observed trading behavior can be considered a reflection of investor responses to market information, rather than the result of misunderstanding the instructions. Respondents in this study were divided into three groups based on their level of overconfidence. The level of overconfidence was measured using a confidence level calibration test (Costa et al., 2025).

Table 1. Grouping of Respondents Based on Calibration Test Results

Group	First Experiment			Second Experiment			Third Experiment		
	No	Code Respondent	Value Overconfident	No	Code Respondent	Value Overconfident	No	Code Respondent	Value Overconfident
Highly overconfident investors	1	4001	32.00	1	5001	71.00	1	1001	35.67
	2	4002	27.30	2	5002	37.05	2	1002	32.00
	3	4003	27.00	3	5003	26.89	3	1003	29.03
	4	4004	25.10	4	5004	26.55	4	1004	29.00
	5	4005	23.65	5	5005	24.90	5	1005	24.00
	6	4006	23.00	6	5006	23.44	6	1006	23.80
	7	4007	22.50	7	5007	23.08	7	1007	23.50
							8	1008	23.00
Moderately overconfident investors	1	4008	22.00	1	5008	22.50	1	1009	22.50
	2	4009	21.45	2	5009	22.15	2	1010	21.07
	3	4010	20.90	3	5010	20.00	3	1011	20.25
	4	4011	20.25	4	5011	17.00	4	1012	18.60
	5	4012	19.90	5	5012	15.86	5	1013	16.50
	6	4013	19.00	6	5013	14.35	6	1014	14.30
	7	4014	18.00	7	5014	14.05	7	1015	13.10
	8	4015	17.60	8	5015	10.08	8	1016	12.70
Low overconfident investors	1	4016	17.50	1	5016	8.45	1	1017	11.60
	2	4017	16.56	2	5017	8.25	2	1018	10.00
	3	4018	15.45	3	5018	7.00	3	1019	9.30
	4	4019	14.60	4	5019	6.54	4	1020	8.00
	5	4020	12.50	5	5020	4.30	5	1021	6.30
	6	4021	10.70	6	5021	4.00	6	1022	4.60
	7	4022	7.80	7	5022	3.50	7	1023	3.05
							8	1024	2.00
Description	Mean= High overconfidence score =25.79 Low overconfidence score =13.59 Mean difference = 12.206 t = 6.743 (significant value 0.000)			Mean= High overconfidence score = 33.27 Low overconfidence score = 6.00 Mean difference = 27.267 t = 4.142 (significant value 0.001)			Mean: High overconfidence score = 27.50 Low overconfidence score = 6.8 Mean difference = 20.644 t = 10.037 (significant value 0.000)		

The results of the confidence level calibration test are presented in Table 1. The test results show that the high overconfidence group differs significantly in overconfidence level from the low overconfidence group. In the first experiment, the difference test between the high- and low-overconfidence groups yielded a p-value of 0.000 (12.206). In the second experiment, the high overconfident group and the low overconfident group showed a mean difference of 27.267, with a significance level of 0.001. In the third experiment, the high overconfident group and the low overconfident group showed a mean difference of 20.644, with a significance level of 0.000.

The difference in respondents' levels of overconfidence is expected to influence each group's behavior when trading stocks electronically consistently. Both groups of investors, namely those with high and low overconfidence, have the same variance, as indicated by Levene's test: the first experiment produced an F value of 0.064 with a significance level of 0.804. The second experiment had an F value of 5.249 with a significance level of 0.051. Levene's test in the third experiment produced an F value of 1.306 with a p-value of 0.272. Based on these findings, investment decision-making behavior is strongly influenced by investor overconfidence, as evidenced by trading activity and investment performance. Before discussing the main findings, grouping investors by their level of overconfidence based on calibration tests provides an important foundation for further analysis. This approach allows the identification of behavioral differences that are not only quantitative but also reflect investors' psychological characteristics. The grouping results show that investors exhibit high and low levels of overconfidence, which are then analyzed to examine how these differences in characteristics affect stock trading decisions. These findings confirm that overconfidence is not merely a sporadic individual phenomenon but rather a relatively stable behavioral characteristic that can be systematically observed in investment decision-making.

Table 2 shows that in the third experiment, there were significant differences between the Investors with High Overconfidence (IOT) and Investors with Low Overconfidence (IOR) groups in both trading frequency and volume. In the first experiment, the average trading frequency and volume of IOT were higher than those of IOR, with differences of 5.86 and 503.86, respectively, with a p-value <0.05 indicating significance. Similar results were also seen in the second experiment, with a much larger difference, where the difference in frequency reached 63.71 and volume 2088.86, with a highly significant p-value (0.000). In the third experiment, although the difference was smaller, IOT still showed a higher average value than IOR, with significant differences in frequency (13.76; $p = 0.017$) and volume (286; $p = 0.038$). These results indicate that the IOT group consistently had higher trading activity than IOR across all experiments.

Table 2. Results of the Test of Difference in Average Frequency and Trading Volume

Experiment	Variable	Mean IOT	Mean IOR	Mean Difference	t-value	p-value
First experiment	Frequency of trading	24.57	18.71	5.86	3.537	0.004
	Volume of trading	800.29	296.43	503.86	4.097	0.006
Second experiment	Frequency of trading	93.14	29.43	63.71	5.184	0.000
	Volume of trading	2514.43	425.57	2088.86	12.731	0.000
Third experiment	Frequency of trading	52.88	39.12	13.76	2.704	0.017
	Volume of trading	682.38	396.38	286	2.453	0.038

Table 3 indicates that, following the release of good news, there are statistically significant differences between Investors with High Overconfidence (IOT) and those Investors with Low Overconfidence (IOR) in both trading frequency and trading volume across all experiments. In the first experiment, IOT exhibits higher mean trading

frequency and volume than IOR, with mean differences of 2.00 and 232.43, respectively, both significant at $p < 0.05$. In the second experiment, the differences are substantially larger, with mean differences of 34.29 in trading frequency and 1078.86 in trading volume, both highly significant ($p = 0.001$ and $p = 0.000$). In the third experiment, although the differences are smaller, IOT still demonstrates higher trading activity than IOR, with significant differences in trading frequency (6.75; $p = 0.016$) and trading volume (152.11; $p = 0.031$). These findings suggest that investors with higher levels of overconfidence tend to engage in more active trading behavior in response to favorable information.

Table 3. Test of Difference in Average Frequency and Trading Volume When Good News is Released

Experiment	Variable	Mean IOT	Mean IOR	Mean Difference	t-value	p-value
First experiment	Frequency of trading	12.29	10.29	2.00	2.413	0.033
	Volume of trading	393.57	161.14	232.43	3.728	0.009
Second experiment	Frequency of trading	45.43	11.14	34.29	5.357	0.001
	Volume of trading	1238.00	159.14	1078.86	12.807	0.000
Third experiment	Frequency of trading	25.75	19.00	6.75	2.725	0.016
	Volume of trading	337.88	185.77	152.11	2.599	0.031

Table 4 presents the results of testing for differences in average trading frequency and volume when bad news is released. The results show that investors with high overconfidence have higher average trading frequency and greater trading volume than those with low overconfidence when bad news is released. In the context of the capital market, confirmation bias can lead highly overconfident investors to maintain aggressive trading decisions even as market conditions signal increasing risk. These findings confirm that overconfidence not only affects the level of trading activity but also how investors process and respond to market information.

Table 4. Test of Difference in Average Frequency and Trading Volume When Bad News is Released

Experiment	Variable	Mean IOT	Mean IOR	Mean Difference	t-value	p-value
First experiment	Frequency of trading	12.29	8.43	3.86	4.102	0.001
	Volume of trading	406.71	135.29	271.42	4.446	0.004
Second experiment	Frequency of trading	47.71	18.29	29.42	4.758	0.000
	Volume of trading	1276.43	266.43	1010.00	11.867	0.000
Third experiment	Frequency of trading	27.12	20.12	7.00	2.633	0.020
	Volume of trading	344.50	210.50	134.00	2.287	0.049

Investors with low levels of overconfidence exhibit more adaptive behavior patterns in response to changes in market information. The analysis shows significant differences in the trading activities of investors with low overconfidence between good- and bad-news conditions. When receiving negative information, investors in this group tend to increase their trading activity, particularly through portfolio adjustments. This response reflects a higher level of caution and greater risk awareness than that of overconfident investors. Investors with low overconfidence are more responsive to risk signals and more willing to adjust their investment strategies when faced with market uncertainty. This finding is consistent with the view in behavioral finance literature that investors with more

moderate levels of self-confidence tend to evaluate risk more objectively and are less bound by their own subjective beliefs. Thus, differences in levels of overconfidence result in noticeable differences in investment decision-making patterns.

The difference in trading activity between these two groups of investors ultimately affected investment performance, as measured by returns. The results of the study show that, in aggregate, both groups of investors experienced negative average returns during the experiment period. The difference in average returns between highly overconfident and low overconfident investors is shown in Table 5.

Table 5. Difference in Average Returns Between Investors with IOT and IOR

Experiment	Variable	Mean IOT	Mean IOR	Mean Difference	t-value	p-value
First experiment	Return	-10.95	-0.15	-10.80	-3.124*	0.020
Second experiment	Return	-18.91	-3.83	-15.08	-2.584*	0.031
Third experiment	Return	-5.83	-1.08	-4.75	-1.280	0.237

Table 5 presents the differences in average returns between Investors with High Overconfidence (IOT) and those with Low Overconfidence (IOR) across three experiments. In the first and second experiments, IOT investors experience lower (more negative) returns than IOR investors, with mean differences of -10.80 and -15.08, respectively, and these differences are statistically significant ($p < 0.05$). This finding indicates that higher levels of overconfidence may adversely affect investment performance. In contrast, in the third experiment, although IOT investors still exhibit lower returns than IOR investors with a mean difference of -4.75, the difference is not statistically significant ($p = 0.237$). These results suggest that highly overconfident investors tend to achieve poorer investment outcomes compared to less overconfident investors, particularly under the conditions reflected in the first and second experiments.

DISCUSSION

The findings provide strong empirical evidence that investor overconfidence significantly shapes trading behavior and investment outcomes. Based on the calibration test, investors are classified into high- and low-overconfidence groups, confirming overconfidence as a stable behavioral characteristic. Consistent with the excessive trading theory, investors with high overconfidence exhibit significantly higher trading frequency and transaction volume than low-overconfidence investors. These findings support H1, indicating that overconfident investors tend to overestimate their analytical abilities and the accuracy of their private information, leading to more aggressive trading behavior. This result is consistent with prior studies by Trinugroho and Sembel (2011), Bao and Li (2020), and Inghelbrecht and Tedde (2024), which found that overconfidence encourages excessive trading through inflated self-beliefs and miscalibration.

Furthermore, the analysis incorporating market information treatments reveals that overconfidence moderates investor responses to both good news and bad news. The between-subject results indicate that highly overconfident investors consistently exhibit higher trading frequency and trading volume compared to low-overconfidence investors under both information conditions. These findings support H2a and H2b, confirming that overconfident investors maintain elevated trading intensity regardless of whether the information is favorable or unfavorable. This behavior reflects their tendency to rely heavily on subjective beliefs while underweighting external information signals. This finding is consistent with studies by Bao and Li (2020) and Inghelbrecht and Tedde (2024), which showed that overconfident investors tend to maintain aggressive trading behavior despite changing market information.

The within-subject analysis provides insights into behavioral asymmetry across information conditions. The results show that investors with high overconfidence do not exhibit significant differences in trading activity between good news and bad news conditions, supporting H3a. This suggests that highly overconfident investors are

relatively insensitive to market information changes and tend to maintain consistent trading intensity. In contrast, investors with low overconfidence demonstrate significant differences in trading behavior across information conditions, supporting H3b. They tend to adjust trading activity in response to negative information, reflecting greater risk awareness and adaptive decision-making. This contrast highlights the role of confirmation bias among overconfident investors, who selectively interpret information to reinforce prior beliefs while disregarding contradictory signals. This finding is consistent with prior studies by Chalissery et al. (2023) and Mardiana et al. (2025).

In terms of investment performance, the results indicate that investors with high overconfidence tend to experience lower returns than those with low overconfidence, particularly in the first and second experiments. These findings provide partial support for H4, as statistical significance appears only in certain experimental conditions. The results suggest that excessive trading driven by overconfidence reduces portfolio performance through higher transaction costs and suboptimal timing decisions. This finding is consistent with prior studies by Trinugroho and Sembel (2011), Bao and Li (2020), and Gorzon et al. (2024), which showed that overconfident investors tend to overestimate their ability to predict market movements, leading to investment errors and lower returns.

From a theoretical perspective, these findings challenge the assumption of investor rationality in conventional financial theory. While traditional models assume that investors process information objectively and maximize expected utility, this study demonstrates that psychological biases, particularly overconfidence, play a crucial role in shaping trading decisions and outcomes. The persistence of excessive trading and weak responsiveness to negative information suggests that overconfidence contributes to market inefficiency at the individual level. Moreover, such behavior may have broader implications for market dynamics, including increased volatility and potential asset mispricing. This study reinforces the relevance of behavioral finance in explaining investor behavior in emerging markets. By providing experimental evidence on how overconfidence influences trading activity, information processing, and investment performance, this study extends the existing literature and highlights the importance of incorporating psychological factors into financial decision-making frameworks.

CONCLUSION

Based on the analysis, this study concludes that investor overconfidence significantly influences trading activity and investment performance in the capital market. Investors with high levels of overconfidence exhibit higher trading frequency and volume compared to those with low overconfidence, under both good news and bad news conditions. Moreover, highly overconfident investors do not demonstrate significant differences in trading behavior across information conditions, indicating limited sensitivity to market signals. In contrast, investors with low overconfidence display more adaptive behavior by adjusting their trading activity in response to the type of information received. The study also finds that highly overconfident investors tend to generate lower returns, confirming that behavioral bias not only affects trading intensity but also undermines investment outcomes. Practically, these findings highlight the importance of enhancing awareness of overconfidence bias through training and financial education programs for investors, analysts, and financial institutions to promote more rational and information-based decision-making.

Despite these contributions, this study has several limitations. First, the experimental design using controlled scenarios may not fully capture the complexity of real market conditions. Second, the measurement of overconfidence based on calibration tests may not comprehensively represent all psychological dimensions of investor behavior. Therefore, future research is encouraged to adopt more diverse approaches, such as combining experimental methods with real market data, and to incorporate additional behavioral variables, including risk tolerance, herding behavior, and emotional biases. Furthermore, subsequent studies could extend the research context to different market settings and investor groups to improve the generalizability of the findings. Such efforts

are expected to provide a more comprehensive understanding of the role of behavioral factors in shaping financial market dynamics.

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