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The Influence of Environmental Social Governance (ESG) Information on Investment Decisions with Overconfidence Moderation on Investors in the Indonesian Capital Market

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ABSTRACT

This study examines the effects of environmental, social, and governance (ESG) information on investment decisions and the moderating role of overconfidence among Indonesian retail investors. A quantitative survey using purposive sampling yielded 165 eligible responses, analyzed using PLS-SEM with SmartPLS 4. ESG information and overconfidence were measured using Likert scales, while investment decisions used ordinal investment allocation categories. Environmental ($\beta = 0.269$; $p < 0.001$), social ($\beta = 0.213$; $p = 0.002$), and governance information ($\beta = 0.228$; $p = 0.001$) had positive, significant effects. Overconfidence strengthened the effects of environmental ($\beta = 0.193$; $p = 0.006$) and governance information ($\beta = 0.170$; $p = 0.017$), but did not moderate social information ($\beta = -0.024$; $p = 0.731$). The model explained 30.9% of the variance in investment decisions. These findings indicate that the moderating role of overconfidence differs across ESG dimensions.

INTRODUCTION

Environmental, social, and governance (ESG) information is increasingly relevant in investment evaluation because it provides an overview of environmental risk management, the company's relationship with stakeholders, and the quality of governance. This information complements financial information when investors assess the company's sustainability. However, the availability of ESG data has not always been followed by investors' ability to use it consistently. Hijazin et.al (2025) discusses changes in investor preferences, where environmental, social, and governance aspects are now increasingly considered in addition to financial benefits alone, while Anisah Nur (2025) assesses that sustainability aspects do not have a significant influence because they prioritize technical analysis, macroeconomic conditions, and market momentum.

International studies indicate that ESG information influences investor judgments, although investors emphasize different dimensions. Chini and Kräussl (2025) report that US institutional investors seek to avoid ESG controversies, while retail investors respond to accessible ESG metrics. Giri and Campus (2025) highlight social and governance considerations among Nepalese investors. Shu (2025) suggests that ESG information may

influence decisions indirectly through investor attitudes. These differences warrant examination in the Indonesian retail market.

Signaling theory suggests that corporate disclosures help investors evaluate management quality and future prospects. Environmental information covers waste management, climate risks, and green innovation; social information addresses employees, human rights, and communities; and governance information concerns accountability, compliance, and shareholder protection. The relevance of ESG disclosures to investor evaluation is also discussed by Thakur et al. (2025) and Paranita et al. (2025).

Investor responses also depend on information processing. Overconfidence refers to excessive belief in one's knowledge, judgment, or assessment accuracy. Kumar (2024) examines this bias in investing; Costa et al. (2025) develop a measurement scale, and Syarkani and Alghifari (2022) demonstrate the importance of cognitive biases. Consequently, investors may place different weights on the same ESG information.

Bihari et al. (2025) examine ESG information and investor behavior, while Bhojnagarwala (2025) reviews overconfidence in ESG stocks. Such work does not establish that overconfidence moderates each ESG dimension equally. This study therefore investigates whether overconfidence differently moderates the effects of environmental, social, and governance information on investment decisions among Indonesian retail investors.

This study tests the direct effects of environmental, social, and governance information on the ESG-based investment allocation of Indonesian retail investors, together with the moderating role of overconfidence. Examining these ESG dimensions separately clarifies whether the effects differ according to investor overconfidence. The outcome is self-reported fund allocation, not actual portfolio returns or investment quality.

RESEARCH METHODS

This quantitative survey targeted retail investors active in the Indonesian capital market. Purposive sampling required respondents to be retail investors, to have accessed ESG information for investing, and to have at least three months of investment experience. A Google Forms questionnaire generated 165 usable responses from 168 questionnaires distributed (98.21%).

The initial sample-size estimate used the Slovin formula with a reference population of 20,042,365 and an 8% error parameter, yielding approximately 156 respondents. The recruitment target was 160, and 165 eligible responses were analyzed. Because purposive sampling is non-probability-based, this calculation does not guarantee a population margin of error.

Environmental (IE), social (IS), and governance (IG) information were the independent variables; overconfidence (OV) was the moderator, and investment decisions (KI) the dependent variable. ESG information and overconfidence were measured on a five-point Likert

scale (1 = strongly disagree; 5 = strongly agree). Investment decisions used reported fund-allocation categories: 1 = 0%; 2 = 1–25%; 3 = 26–50%; 4 = 51–75%; and 5 = 76–100%.

Table 1. Operationalization of research variables

Variable	**Key indicators**	**Items and resources**
IE	Climate change, waste management, energy and resource use, and the company's efforts to preserve the environment	5; Karmacharya (2023)
IS	Employee well-being, public relations, human rights, and responsibility to customers	5; Karmacharya (2023)
IG	Board of directors responsibilities, financial reporting, bribery prevention, shareholder fairness, and anti-corruption policies	5; Karmacharya (2023)
OV	Overplacement, overestimation, and overprecision	6; Costa et al. (2025)
KI	Proportion of investment fund allocation	3; Begum and Siddiqui (2024); Janz et al. (2023)

Source: Research data, processed (2026)

The analysis was carried out using PLS-SEM with SmartPLS 4. The evaluation of the measurement model included *outer loading*, average variance extracted (AVE), *cross loading*, Fornell–Larcker criteria, heterotrait–monotrait ratio (HTMT), Cronbach's alpha, and *composite reliability*. The structural model was evaluated through R^2, *adjusted* R^2, f^2, and $Q^2predict$. Direct influence and interaction testing was carried out through *bootstrapping* at a significance level of 5%, using $p < 0.05$ and $t > 1.96$ as the criteria in the study manuscript (Hair et al., 2022). The number of bootstrapping subsamples and interaction formation procedures were not detailed in the source manuscript.

RESULTS AND DISCUSSION

Respondent characteristics and variable description

Respondents consisted of 86 males (52.1%) and 79 females (47.9%). The largest age group was 25–31 years, namely 53 people (32.1%), followed by 51 people aged 18–24 years (30.9%). A total of 70 respondents (42.4%) had a S1 education. The most investment experience was in the range of one to two years, namely 59 respondents (35.8%), while 57 respondents (34.5%) had more than two years of experience and 49 respondents (29.7%) less than one year.

A total of 54 respondents (32.7%) stated that they understood ESG very well, 81 respondents (49.1%) understood enough, and 30 respondents (18.2%) did not understand much. Social media was the most chosen source of information, with 106 answers. The source question

allowed more than one choice and resulted in a total of 373 answers; therefore, the percentage of social media of 28.4% used the total answer as a denominator, not the number of respondents. The sustainability report was selected 21 times or 5.6% of the total answers.

Table 2. Summary of descriptive statistics of constructs

Construct	Number of indicators	Average
IE	5	3,69
IS	5	3,70
IG	5	3,75
OV	6	3,70

Source: Research data, processed (2026)

The average *governance* information was the highest among the constructs presented in Table 2. At the indicator level, attention to efforts to prevent corruption and bribery averaged 3.88, while confidence in knowing the best time to buy and sell investments averaged 3.84. The *overconfidence* value describes the level of approval for the belief-biased statement, so it is not interpreted as a better quality of decision. The average construct of investment decisions is not reported in the descriptive summary of the source text.

The descriptive results should also be read in light of how respondents encountered ESG information. Although 135 of the 165 respondents rated their understanding as sufficient or very good, these categories represent self-assessment rather than an independent test of ESG literacy. Moreover, social media received the highest number of source selections, whereas sustainability reports were selected relatively infrequently. This pattern suggests that accessible communication channels may influence which ESG issues attract attention. Nevertheless, frequency of use does not establish the completeness or reliability of the information obtained. For investment purposes, brief summaries encountered through social media should ideally be checked against issuer disclosures and other relevant sources, especially where the distinction between a company's stated policy and its implementation is important.

Evaluation of measurement models

All indicators had *an outer loading* above 0.70. The AVE value of each construct also exceeded 0.50. A summary of convergent validity and reliability is shown in Table 3. Cronbach's reported alpha and *composite reliability* values were above 0.70, thus meeting the internal consistency criteria used in the study.

Table 3. Convergent validity and construct reliability

Construct	Loading range	AVE	Alpha	CR
IE	0,766–0,876	0,665	0,875	0,889

Construct	Loading range	AVE	Alpha	CR
IS	0,759–0,906	0,658	0,870	0,915
IG	0,779–0,866	0,671	0,878	0,885
KI	0,803–0,876	0,718	0,804	0,819
OV	0,734–0,832	0,630	0,883	0,894

Source: Research data, processed (2026)

The validity of the discriminant was examined through three approaches. At *cross loading*, each indicator had the highest load on the construct it measured. The square root of AVE was 0.815 for IE, 0.811 for IS, 0.819 for IG, 0.847 for KI, and 0.794 for OV, greater than the correlation between the related constructs. HTMT values ranged between 0.082 and 0.403, all of which were below the 0.90 threshold. Thus, the reported results support the construct differences in the measurement model.

Structural model evaluation and hypothesis testing

The R^2 value of the investment decision is 0.309 with *the adjusted* R^2 of 0.279. The model explains 30.9% of the variation in investment decisions, while the rest is not explained by the variables in the model. *The* Q^2*predict* of the KI indicator is 0.234; 0.114; and 0.158, respectively. The positive value indicates the relevance of the prediction to the comparator used in *the* Q^2*predict* output, but it is not sufficient to conclude the overall prediction advantage without further comparison of prediction errors.

Table 4 shows that the three direct influences are significant and positively directional. Environmental information has the largest direct coefficient numerically, followed by *governance* and *social*. This sequence does not mean that the differences between coefficients have been statistically tested. The effect *of overconfidence* interaction was significant on *the environmental* and *governance* dimensions, while on the *social* dimension was not significant. Thus, five of the six hypotheses received empirical support.

Taken together, these results suggest that ESG-based investment judgments were formed from multiple dimensions rather than from a single cue alone.

The explanatory power of the structural model should be considered alongside the characteristics of the dependent variable. Investment decisions in this study reflect respondents' stated allocation categories rather than independently verified portfolio transactions. Consequently, the R^2 value describes the proportion of variation accounted for within this survey-based measure; it does not indicate that ESG disclosures explain the same proportion of actual investment performance. The remaining unexplained variance also points to the potential relevance of financial information, individual investment objectives, risk preferences, and market conditions, which were not included in the present model.

The positive Q^2predict values indicate relevance within the reported analysis, but they do not independently establish that the model predicts better than alternative specifications. Given

the limited reporting of prediction errors, these results should be interpreted cautiously. In particular, increased reliance on ESG information due to overconfidence is not evidence of more accurate investor decisions.

Table 4. Direct influence and moderation effect

Hypotheses and relationships	b	t	p	f^2	Results
H1 IE → KI	0,269	4,222	<0.001	0,094	Supported
H2 IS → KI	0,213	3,029	0,002	0,057	Supported
H3 IG → KI	0,228	3,384	0,001	0,065	Supported
H4 OV × IE → KI	0,193	2,744	0,006	0,035	Supported
H5 OV × IS → KI	−0,024	0,343	0,731	0,001	Not supported
H6 OV × IG → KI	0,170	2,393	0,017	0,032	Supported

Source: Research data, processed (2026)

The f^2 value of direct influence was in the range of 0.057–0.094 and the significant moderation effect was in the range of 0.032–0.035, which was small according to the study criteria. The interaction of OV × IS had an f^2 of 0.001. The findings show that statistical significance needs to be read together with the magnitude of the effect; the contribution of each relationship to the model's explainability is still limited.

The influence of environmental information on investment decisions

Environmental information had a positive and significant effect on investment decisions ($\beta = 0.269$; $p < 0.001$). Information on waste management, environmentally friendly products, and innovation may signal a company's capacity to manage sustainability risks. Investors who considered these disclosures reported greater ESG-based fund allocation. This finding aligns with Park and Jang (2021) and Begum and Siddiqui (2024), although differences in investor characteristics and measures limit direct comparisons of effect sizes.

The influence of social information on investment decisions

Social information positively influenced investment decisions ($\beta = 0.213$; $p = 0.002$). Employee welfare, human rights, and community relations may indicate the stability of corporate operations. Respondents who paid greater attention to these issues reported higher ESG-based investment allocations. This result is consistent with the stakeholder considerations discussed by Jaiswal (2025), showing that investors consider social relationships as well as environmental performance.

The influence of governance information on investment decisions

Governance information positively influenced investment decisions ($\beta = 0.228$; $p = 0.001$). Transparency, board accountability, anti-corruption policies, and shareholder protection may reduce uncertainty about corporate management, consistent with signaling theory. Paranita et al. (2025) also examined governance and sustainability reporting in investment decisions. The present result concerns respondents' reported fund allocation rather than independently verified governance quality.

When considered together, these direct relationships demonstrate the value of examining ESG as three distinct dimensions instead of treating it as a single overall score. Environmental information concerns the management of ecological exposure, social information addresses relationships with employees and other stakeholders, and governance information reflects decision-making structures and accountability. The coefficients indicate positive associations for all three dimensions in this sample; however, the numerical differences between their estimates were not tested as differences between coefficients. It would therefore be inappropriate to conclude that one dimension is statistically more influential than another. The findings instead suggest that investors may integrate several types of sustainability-related signals when reporting their allocation choices, with the relative importance of each signal potentially depending on information availability, personal objectives, and interpretation.

The moderating role of overconfidence in the environmental dimension

Overconfidence significantly strengthened the relationship between environmental information and investment decisions ($\beta = 0.193$; $t = 2.744$; $p = 0.006$), supporting H4. Investors with greater confidence in their judgments were more likely to use environmental disclosures when determining their reported ESG-based allocations.

Environmental information may appear concrete because it addresses observable practices such as waste management, resource use, and environmentally friendly innovation. Overconfident investors may therefore place greater weight on their own interpretation of these signals. This interpretation is consistent with discussion of overconfidence in ESG investing by Bhojnagarwala (2025). Nevertheless, stronger reliance on environmental information does not establish that investors' assessments are more accurate.

The moderation result describes how information is used, not whether the resulting decisions are accurate. A highly confident investor may treat environmental initiatives as a clear basis for allocating funds, although perceived clarity does not establish that a disclosure is complete or reliable. Accordingly, the positive interaction reflects a stronger association between environmental information and reported allocation at higher levels of overconfidence, not evidence of superior environmental analysis or higher investment returns.

The moderating role of overconfidence in the social dimension

Overconfidence did not significantly moderate the relationship between social information and investment decisions ($\beta = -0.024$; $t = 0.343$; $p = 0.731$), so H5 was not supported. Although the interaction coefficient was negative, the evidence is insufficient to conclude that overconfidence weakened this relationship.

Social information encompasses employee welfare, human rights, and community relations, which may be interpreted differently across investors. Confidence in one's judgment therefore does not necessarily translate into a consistent change in the weight assigned to social disclosures. Goswami (2024) discusses behavioral factors in socially responsible investing,

including the relevance of other influences on decisions. Further research is needed to determine whether these factors help explain the nonsignificant moderation found here.

Social disclosures address diverse stakeholders and outcomes, from employee protection to community relationships and customer responsibilities. Such measures may be interpreted differently across issuers and investors. This heterogeneity offers a possible explanation for the nonsignificant interaction, but it was not tested directly. In particular, the negative coefficient with $p = 0.731$ cannot justify a claim that overconfidence weakens the social-information effect. Future studies could investigate social-information literacy, peer advice, and other behavioral influences.

The moderating role of overconfidence in the governance dimension

Overconfidence significantly strengthened the relationship between governance information and investment decisions ($\beta = 0.170$; $t = 2.393$; $p = 0.017$), supporting H6. This positive interaction suggests that more overconfident respondents assigned greater weight to governance information when reporting their investment allocations.

Governance disclosures often provide structured signals, including board responsibilities, transparency, oversight, and shareholder protection. Investors confident in their own analytical ability may rely more heavily on these signals when evaluating companies. Gao and Zhao (2026) emphasize governance-related signals in investor confidence, providing a relevant comparison. However, the observed interaction does not show that overconfident investors make objectively better decisions; it shows a stronger association between governance information and reported allocations.

The finding also distinguishes a decision cue from decision quality. Governance disclosures may seem verifiable because they cover formal policies, board roles, and oversight, but both information use and investment allocation were obtained from respondents' questionnaires. Thus, positive moderation documents an association in perceived information use rather than proof that overconfidence improves the assessment of corporate governance. This distinction is relevant to investor education and the interpretation of company disclosures.

CONCLUSIONS AND SUGGESTIONS

Research on 165 retail investors in the Indonesian capital market showed that *environmental*, *social*, and *governance* information had a positive and significant effect on investment decisions, respectively. *Overconfidence* strengthened the influence of *environmental* and *governance* information, but was not proven to moderate the influence of *social information*. The model explains 30.9% variation in investment decisions, with relatively small individual effects. These results support the importance of considering the dimensions of ESG information and the characteristics of investor behavior simultaneously.

In practical terms, companies need to convey clear, consistent, and traceable ESG information so that investors can evaluate their policies and implementation. Investors need to compare sustainability information with other sources and reassess their beliefs before

determining the allocation of funds. Information providers and capital market education providers can combine ESG literacy with the recognition of behavioral biases, especially since high self-confidence is not synonymous with analytical accuracy.

These implications can be translated into more specific practices. For companies, ESG communication should identify the policies adopted, the actions taken, and the evidence available to substantiate reported progress, rather than relying only on broad sustainability claims. For investors, the findings highlight the value of comparing environmental, social, and governance indicators with financial information and assessing the credibility of their sources before deciding how much capital to allocate. Investor-education programs can also use examples of overconfidence to illustrate why certainty about an interpretation does not necessarily imply that the interpretation is accurate. Since the study measures self-reported fund-allocation categories, these recommendations concern information evaluation and decision discipline, not a demonstrated improvement in portfolio returns.

The research was limited to a purposive sample of retail investors and measurements based on questionnaire responses. The results cannot be directly generalized to all investors or interpreted as evidence of changes in actual transaction behavior. The collection of variables through the same source also allows for shared method bias. Subsequent research can use transaction data or longitudinal design, compare ESG experience and literacy groups, and add variables such as *herding*, *loss aversion*, and risk perception. Reporting of interaction procedures, the number of bootstrapping subsamples, and examination of collelinearity and method bias will help strengthen the replication of the study.

BIBLIOGRAPHY

Anisah Nur, W. Y. (2025). Investasi, Keputusan Pendekatan, Melalui Finance, Behavioral. 16(3), 588–601.

Begum, R., & Siddiqui, D. A. (2024). Influence of Environmental, Governance and Reputational Factors on the Performance of Delegated Investments: Exploring the Mediating Role of Overconfidence Bias and Investment Decisions in. 16(2), 1–58.

Bhojnagarwala, V. (2025). When Sustainability Meets Speculation: A Critical Review of Investor Overconfidence in ESG Stocks and the Market Outcomes. 06, 2484–2497. https://doi.org/10.46609/IJSSER.2025.v10i06.036

Bihari, A., Dash, M., Muduli, K., & Kumar, A. (2025). Sustainable Development Investment Decision: Do Environmental, Social and Governance (ESG) and Behavioral Biases Factors Matter ? 33, 1161–1181. https://doi.org/10.1002/sd.70056

Costa, D. F., Soares, C. C., César, B., Moreira, D. M., & Tonelli, A. O. (2025). Construction and validation of an overconfidence scale in investment decisions. Future Business Journal. https://doi.org/10.1186/s43093-024-00419-0

Gao, M., & Zhao, L. (2026). The essence of governance : decoding the impact of ESG on investor confidence in China. 0326. https://doi.org/10.1080/15140326.2026.2665989

Goswami, G. and. (2024). Behavioral perspective on sustainable finance : Nudging investors toward SRI Behavioral perspective on sustainable finance : nudging investors toward SRI Amisha Gupta and Shumalini Goswami. https://doi.org/10.1108/AJEB-05-2023-0043

Husnah. (2023). Informativeness of environmental, social, governance (ESG) data on investment decisions: The mediating role purpose of investment. International Journal of Data and Network Science. www.GrowingScience.com

Hijazin, A. F., Alshdaifat, S. M., & Atieh, A. A. (2025). From Responsibility to Returns : How ESG and CSR Drive Investor Decision Making in the Age of Sustainability. 1–22.

Jaiswal, R. (2025). Environmental, social and governance-type investing: a multi-stakeholder machine learning analysis. https://doi.org/10.1108/MD-04-2024-0930

Janz, C., Rilke, R. M., & Janz, C. (2023). Does ESG information impact individual investors' portfolio choices? Evidence from an experiment. 1–34.

Jonsdottir, B., Sigurjonsson, T. O., & Johannsdottir, L. (2022). Barriers to Using ESG Data for Investment Decisions. 1–14.

Karmacharya, B. (2023). Impact of Environmental, Social and Governance Factors on Investment Decision of Investors in Nepal. XVI(1).

Kumar, A. (2024). Impact of Overconfidence Bias on Investment Decision Making. 4(3), 573–581.

Paranita, E. S., Ramadian, A., Wijaya, E., Nursanti, T. D., & Judijanto, L. (2025). The Impact of ESG Factors on Investment Decisions: Exploring the Interplay between Sustainability Reporting, Corporate Governance, and Financial Performance. 6798, 4522–4533.

Park, S. R. (2022). Integration of ESG Information Into Individual Investors ' Corporate Investment Decisions: Utilizing the UTAUT Framework. 13(April). https://doi.org/10.3389/fpsyg.2022.899480

Park, S. R., & Jang, J. Y. (2021). The Impact of ESG Management on Investment Decision: Institutional Investors ' Perceptions of Country-Specific ESG Criteria. 2020(Unpri).

Syarkani, Y., & Alghifari, E. S. (2022). The influence of cognitive biases on investor decision-making: the moderating role of demographic factors. 26(2), 183–196. https://doi.org/10.20885/jsb.vol26.iss2.art5

Thakur, M., Bedi, S. S., & Saraf, M. A. (2025). The Effect Of ESG Disclosure And Sustainable Practices On Investor Decision Making In Indian Textile Industry. 11(21), 1445–1455.