Behavioural Finance and ESG: Current Landscape Summary

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Abstract. In recent decades, against the backdrop of significant growth in the investment market, investors have increasingly sought ways to generate favourable returns. While traditional theories such as portfolio theory provide an analytical basis for investment decisions, these approaches often neglect the psychological factors that shape investor behaviour. This literature review explores the importance of behavioural finance: it focuses on how psychological biases can influence investor decisions. By analysing research published between 2000 and 2024, this paper focuses on four key biases – overconfidence, loss aversion, herd behaviour and confirmation bias – and assesses how they influence investor attitudes and investment intentions, particularly in relation to environmental, social and governance (ESG) factors. The review draws on a variety of academic articles and empirical studies to determine how these biases manifest themselves in both institutional and retail investment contexts, ultimately shaping outcomes that may either promote or hinder sustainable investment strategies. These findings contribute to a nuanced understanding of investor psychology. In addition, the article provides actionable insights for investors and a roadmap for future research on bias-mitigation tools such as AI-driven analytics.

Keywords: Literature Review, Behavioral Bias, ESG, Investors

1 Introduction

As the global investment market expands, investors are increasingly looking for opportunities to balance risk and return while aligning with broader social and environmental goals. Traditional investment theories, such as portfolio theory and the capital asset pricing model (CAPM), provide a framework for understanding how risk and return shape asset allocation decisions [1]. However, these models typically rely on the assumption that investors are rational actors, and they can only optimise an investor's portfolio through mathematical or statistical methods. This largely ignores the psychological factors that influence investor behaviour. Contemporary behavioural finance research emphasises that the influence of investor psychology, including the complex interplay of cognitive and emotional factors, on decision-making is often as important as objective financial analysis [2]. Behavioural finance differs from traditional finance in that it recognises that individuals and institutions may exhibit systematic biases,

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including overconfidence, loss aversion, herding and confirmation bias, and that these biases can all lead to suboptimal investment decisions by investors [3].

Additionally, the rapid growth of market size and the increasing complexity of financial instruments means that these biases can significantly influence outcomes, particularly in nuanced areas such as ESG investing. The main reason for this is that ESG investing incorporates environmental, social and governance considerations into financial decision-making [4]. Furthermore, ESG not only caters to investors seeking to align their portfolios with moral or ethical standards, but also represents a strategic approach to managing risks related to climate change, social expectations, and corporate governance practices [5]. Despite the potential of ESG investing, behavioural biases can complicate investment. The main reason for this is that investors may misjudge risk. For example, they may overestimate their forecasting abilities, or they may simply follow what the majority is doing without conducting rigorous due diligence [6]. Therefore, behavioural finance provides an important framework for explaining these inconsistencies, revealing how cognitive and emotional biases distort risk perception and capital allocation strategies. This paper fills the gap between theoretical financial models and real investor behaviour by examining these biases and provides a nuanced understanding of the psychological barriers to sustainable investing.

The central aim of this literature review is to synthesise current research on the psychological factors that influence investment decisions, with a particular focus on ESG investing. Specifically, it aims to: (1) summarise the key behavioural biases identified in the existing literature – overconfidence, loss aversion, herding and confirmation bias. (2) Analyse how these biases manifest themselves in different (or similar) ways between institutional and retail investors in the context of ESG investing. (3) Discuss the impact of these biases on investor attitudes (affective and cognitive orientations towards ESG investing) and intentions (likelihood or plans to invest). This paper builds a bridge between traditional financial theory (illustrated by portfolio management strategies) and behavioural finance insights, which provides a more comprehensive perspective on investor decision-making to allow them to design more effective investment strategies. The study also points out the gaps in the current research system, which provides a roadmap for future investigations to mitigate the negative impact of biases on ESG-oriented portfolios.

Two main approaches are used in this paper: systematic strategies and content-based strategies. First, the authors conducted a comprehensive search for peer-reviewed articles focusing on behavioural finance, ESG investing, and the intersection between the two. The main search sources were databases such as Google Scholar, JSTOR, and SSRN. At the same time, the authors used the keywords ‘behavioral finance’, ‘ESG investing’, ‘overconfidence’, ‘loss aversion’, ‘herding bias’, ‘confirmation bias’ and ‘institutional and retail investors’ to conduct a systematic literature analysis. However, this literature was also filtered: the main emphasis was on works published between 2000 and 2024, as this reflects the increasing prominence of ESG investing and behavioural finance in contemporary discourse.

In addition, the authors prioritised criteria for including empirical, theoretical and review articles that explicitly address one or more behavioural biases in the context of investment decisions. The authors also paid further attention to examining studies that

link attitudes and intentions, where the psychological propensity to invest in ESG is measured alongside actual or intended behaviour [7][8]. This approach ensured a focus on actionable insights while maintaining methodological rigour.

The main contribution of this paper is to provide a comprehensive view of how four common biases shape ESG investment decisions between institutional and retail investors. Existing research has typically focused on a single bias or a single type of investor (e.g., either institutional or retail only). However, this review enriches the broader narrative on sustainable finance by collating various studies and highlighting the similarities and differences between different investor types. It also highlights the practical importance of investors, policymakers and financial advisors understanding these biases as they can significantly impact investment returns and the pursuit of sustainability goals [9]. As such, the article not only provides investors with insights into better investment strategies, but also fills a gap in the literature for researchers. Furthermore, the review helps to lay the foundations and provide direction for future research aimed at developing interventions. For example, the role of artificial intelligence in mitigating biases and cross-cultural differences in investor psychology.

2 Method

2.1 Literature Selection Process

The literature selection process followed a structured protocol to ensure relevance and credibility. First, the paper used keyword combinations such as 'behavioral biases and ESG investing,' 'loss aversion and institutional investors,' and 'herd behaviour and retail investors' to identify primary and contemporary research. The initial phase of the search strategy and databases involved searching electronic databases such as Google Scholar, JSTOR, SSRN, and ScienceDirect. Approximately 85% of the literature was selected from finance journals (e.g., Journal of Financial Economics, Sustainability), and the remaining 15% from interdisciplinary publications exploring sustainability and psychology. In addition, this paper prioritises research after 2010, as this timeframe captures the evolution of ESG investing as a recognised strategy and coincides with a surge of interest in behavioural finance. Although seminal works are included to establish the theoretical foundation, the focus remains on contemporary research.

2.2 Inclusion and Exclusion Criteria

Studies that met the following criteria were included for review: 1) peer-reviewed empirical studies or theoretical frameworks that primarily identify behavioural biases that link to ESG outcomes; 2) literature that discusses at least one behavioural bias (overconfidence, loss aversion, herding, confirmation bias); 3) data or arguments presented to clarify the differences between institutional and retail investors; 4) articles published in English. At the same time, the main excluded works in this paper include non-academic articles, opinion articles, and research that lacks a focus on behavioural finance, which ensures the analytical depth and academic rigor of the review.

2.3 Analytical Approach

This paper adopts a content analysis approach to categorise the research results according to the type of bias (e.g., overconfidence, loss aversion) and the type of investor (institutional investors vs. retail investors). Secondly, this paper critically examines conflicting results (e.g., the dual role of loss aversion in ESG avoidance and preference) to identify contextual factors (e.g., market volatility, regulatory environment). This approach facilitates a comparative analysis of how biases perform across different investor groups and market conditions.

3 Analysis

3.1 Overconfidence Bias

The overconfidence bias occurs when investors overestimate their ability to predict or control investment outcomes [10]. Institutional and retail investors who exhibit overconfidence generally believe that ESG investing will lead to favourable financial returns [11]. For institutional investors, particularly fund managers, there is a risk of overreliance on their own judgement or expertise to disregard market indicators that warn of potential risks. For example, Jian and Akbar found that overconfident managers would disproportionately allocate capital to renewable energy stocks despite the unstable regulatory environment because they believed that the stocks would generate returns [12]. This inflated confidence led them to have an overly positive view of ESG-focused portfolios. Similarly, retail investors also oversimplify the ESG concept, confusing ethical claims with financial viability. Daniel and Hirshleifer argue that non-professional investors often mistakenly interpret ESG certifications (e.g., green bonds) as a guarantee of profitability, which generates unrealistic optimism [13]. Overconfidence therefore cultivates investor optimism about ESG, as inherent complexities and uncertainties, such as regulatory shifts, emerging technologies and changing consumer preferences, are often underestimated in the decision-making process.

In addition, overconfidence can lead to aggressive investment behaviour such as over-capitalisation and overtrading. For example, overconfident investors not only allocate a larger proportion of their portfolio to ESG assets, but also trade more frequently. First, institutional leaders (including CEOs) may invest significant resources in ESG projects without rigorous due diligence, often conflating ethical branding with strategic foresight [14]. Meanwhile, retail investors allocate a disproportionately large amount of their portfolios (up to 50% of savings) to ESG funds based on a misplaced trust in their ability to 'time the market' [15]. This bias is also reflected in frequent trading. For example, Phan et al. observe that overconfident investors misinterpret past successes as skills, which leads to speculative trading in volatile ESG areas such as clean energy [16]. While these actions can channel valuable capital towards sustainability-oriented companies, the tendency to ignore or underestimate potential pitfalls highlights the need for strong risk management practices to avoid jeopardising long-term financial goals. Overall, these behaviours exacerbate the risk of market downturns and regulatory changes, thereby undermining long-term financial stability.

3.2 Loss Aversion

Loss aversion is significantly associated with institutional and retail investors' attitudes towards ESG investing. It is defined as the bias that causes individuals to prioritise avoiding losses overachieving equivalent gains [17]. Loss aversion often leads institutional and retail investors to be cautious about ESG opportunities. For institutional investors whose primary objective is to maintain predictable returns, the higher volatility often associated with ESG products can generate a negative perception. Empirical results suggest that decision-makers with a strong loss aversion tend to favour the lowest risk strategies [7], and therefore avoid ESG funds due to the lack of standardised performance measures [5]. This effect is further illustrated by regulatory uncertainty surrounding renewable energy technologies, which may prompt institutional investors to scale back ESG portfolios [9]. Meanwhile, retail investors also tend to be wary of ESG alternatives, preferring to continue investing in profitable stocks rather than branches [18]. At the individual level, investors may be prepared to tolerate increased risk after suffering losses to restore their original level of investment, but once profits are achieved, they usually stick to familiar types of stocks [19].

Based on these observations and under the influence of loss aversion, institutional and retail investors have different intentions towards ESG investments. In general, institutional, and retail investors with a strong loss aversion only invest a limited amount of capital in ESG, as they reduce the frequency of trading to avoid potential declines [20]. However, studies on loss aversion attitudes show that they are more willing to invest in traditional industries such as fossil fuels. As a result, this leads investors to reduce their capital allocation to ESG investments. For example, individual investors reduce their holdings of green bond stocks due to loss aversion [21]. In contrast, some studies find that investors still invest in ESG-related companies because they enjoy a good reputation and believe that they are less likely to trigger financial setbacks [22]. Thus, loss aversion can generate both a conservative stance (reducing ESG allocation) and a more receptive attitude (increasing ESG allocation), reflecting the dual impact of this bias on institutional and retail investors.

3.3 Herding Bias

This paragraph mainly studies the effect of the herding bias on the attitudes of investors (institutional and retail) towards ESG investing. Herding bias is the tendency to copy the behaviour of a large group or market, including investment strategies [23]. There is a positive correlation between institutional and retail investor attitudes towards ESG investing. The reason is that institutional investors' social pressures cause them to align with general investment decisions, especially competitive peer pressure [6]. This is because they fear losing competitiveness when influential institutions incorporate ESG factors into their portfolios. For example, during the outbreak of the new crown pneumonia epidemic, investment managers in Portugal, Italy and Greece all engaged in herding behavior towards ESG investing [24]. For retail investors, the reasons are that they may lack the resources, experience, or confidence to make investment decisions [25], and do not want to bear the risks of investment [8]. However, the risk analysis of

ESG investments is difficult and complex. Individual investors may therefore follow others' investments in stocks with ESG factors to ensure the safety of their investments. Thus, herding bias plays a positive role in the attitudes of investors towards ESG investing.

Institutional and retail investors may rapidly embrace ESG investing under the influence of herding bias. Rather than conducting rigorous and independent assessments, these investors might adopt ESG practices simply because others are doing so, which can lead them to ignore key ESG elements [26]. In particular, retail investors have been found to display herd-driven behavior; for instance, research on the Pakistani stock market reveals a notable herding tendency among individual investors engaging in ESG investments [22]. Moreover, herding bias may encourage both institutional and retail investors to increase their exposure to ESG investments, for example by reallocating funds from traditional stocks to ESG-focused portfolios. Studies suggest that collective behavioral patterns can significantly shape investment choices, especially in socially responsible investing. Given the rising popularity of ESG, it is likely that more investors will adopt ESG strategies. However, when ESG investing becomes a widespread trend, some may overly prioritize ESG considerations and overlook other important factors, potentially affecting the overall caliber of their investment decisions.

3.4 Confirmation Bias

Confirmation bias can shape how both institutional and retail investors perceive ESG investing. Defined as the propensity to concentrate on information that supports one's prior assumptions while overlooking or downplaying contradictory evidence, confirmation bias can polarize investors' viewpoints on investment-related events or issues [27]. Consequently, the attitudes of these investors regarding ESG may be skewed—either positively or negatively—due to confirmation bias, preventing a fully accurate assessment. Under the influence of confirmation bias, investors (whether institutional or retail) begin with a specific preconceived notion. For example, if an investor starts out convinced that ESG investments are profitable, they may deliberately seek out only favorable news that confirms this belief, leading to an overly optimistic stance. Moreover, social media platforms can exacerbate polarization by bringing together like-minded investors [28]. For instance, online discussions among individuals who strongly prioritize social responsibility can further amplify arguments highlighting the advantages of ESG investments. Hence, confirmation bias can ultimately create a polarizing impact on how institutional and retail investor's view ESG investing.

Confirmation bias can push both institutional and retail investors to either increase their involvement in ESG investments or steer clear of them altogether. Specifically, when investors (institutional or individual) already hold a positive outlook on ESG, confirmation bias may prompt them to amplify their investments in these products, largely because they tend to highlight ESG's advantages while overlooking any unfavorable news [29]. Conversely, those harboring negative sentiments about ESG may end up avoiding such investments under the same bias. Scholars suggest that confirmation bias prompts investors to focus on new information that supports their existing viewpoints [30], which can mean emphasizing the drawbacks of ESG investments and

ultimately decreasing participation. Hence, confirmation bias can result in institutional and retail investors becoming either overly optimistic or overly pessimistic about ESG investing [31].

4 Conclusion

Behavioural finance psychological factors such as overconfidence, loss aversion, herding bias and confirmation bias have a significant impact on investment decisions that goes beyond what rational models such as portfolio theory can predict. These biases have a significant impact in the evolving field of ESG investing: the interplay of ethical considerations, market dynamics and regulatory shifts adds complexity. Overconfidence and herd behaviour have driven the rapid uptake of ESG, often resulting in overexposure and speculative trading. Loss aversion encourages caution, but preferences change with context, highlighting its ambivalent role. Confirmation bias polarises attitudes, distorting capital allocation and market efficiency. For institutional investors, peer pressure and reputational risk dominate, while retail investors contend with limited resources and social impact.

Moreover, the review is important because it shows that these biases are not isolated, but often intertwined to shape attitudes and actual investment intentions. The review also provides insights that can enhance investor education, inform financial advisory services, and refine regulatory policies aimed at promoting responsible investment behaviour. For example, educational programmes and communication strategies can be designed to counter common biases and help investors maintain a balanced perspective when evaluating ESG claims. In addition, regulators and financial institutions can incorporate behavioural insights into policy frameworks, which ensures that disclosure and reporting standards adequately address the subjective elements of investing.

Future research could build on these findings by examining technology-driven interventions, such as automated portfolio management tools, robo-advisors, and AI-based data analytics, to mitigate investor biases. Another promising avenue is assessing the impact of targeted training programmes designed to reduce biases, particularly in emerging markets where ESG investing is still in its infancy. Ultimately, fostering a more informed and less biased investment practice can contribute to a stronger and socially responsible financial market, aligning investor objectives with the broader social and environmental imperatives that ESG investing represents.

References

1. Statman, M.: What is Behavioral Finance? pp. 79–84 (2008).
2. Rooh, S., Hussain, A.: Behavioural factors and individual investor's trading performance in Khyber Pakhtunkhwa: The mediating role of environmental, social, and governance (ESG) performance. http://cusitjournals.com/index.php/CURJ/article/view/746/412, last accessed 2024/10/05.
3. Chira, I., Adams, M., Thornton, B.: Behavioral bias within the decision-making process. Journal of Business & Economics Research 6 (2008).

4. Assaf, C., et al.: ESG investing: Does one score fit all investors' preferences? Journal of Cleaner Production 443, 141094 (2024).
5. Avramov, D., et al.: Sustainable investing with ESG rating uncertainty. Journal of Financial Economics 145(2), 642–664 (2022).
6. Robin, R., Angelina, V.: Analysis of the impact of anchoring, herding bias, overconfidence and ethical consideration towards investment decision. JIMFE (Jurnal Ilmiah Manajemen Fakultas Ekonomi) 6(2) (2020).
7. Mallik, K.A., Munir, M.A., Sarwar, S.: Impact of overconfidence and loss aversion biases on investor decision-making behavior: Mediating role of risk perception. International Journal of Public Finance, Law & Taxation 1(1) (2017).
8. Deka, J., et al.: Linking ESG-investing consciousness, behavioral biases, and risk-perception: Scale validation with specifics of Indian retail investors. European Journal of Business Science and Technology 9(1) (2023).
9. Dutt, N., Joseph, J.: Regulatory uncertainty, corporate structure, and strategic agendas: Evidence from the U.S. renewable electricity industry. Academy of Management Journal 62(3), 800–827 (2019).
10. Skala, D.: Overconfidence in psychology and finance - an interdisciplinary literature review. https://ssrn.com/abstract=1261907, last accessed 2024/10/06.
11. Rooh, S., Hussain, A., Zahid, M.: The impact of behavioral factors on environmental issues regarding individual investor's decision making: Empirical evidence from Pakistan's stock market. Sarhad Journal of Management Sciences (SJMS) 7(1) (2021).
12. Jiang, X., Akbar, A.: Does increased representation of female executives improve corporate environmental investment? Evidence from China. Sustainability 10(12), 4750 (2018).
13. Daniel, K., Hirshleifer, D.: Overconfident investors, predictable returns, and excessive trading. Journal of Economic Perspectives 29(4), 61–88 (2015).
14. Lee, J., Kim, E.: Would overconfident CEOs engage more in environment, social, and governance investments? With a focus on female representation on boards. Sustainability 13(6), 3373 (2021).
15. Wang, Y., et al.: Executive overconfidence and corporate environmental, social, and governance performance. Sustainability 15(21), 15570 (2023).
16. Phan, T.C., Rieger, M.O., Wang, M.: What leads to overtrading and under-diversification? Survey evidence from retail investors in an emerging market. Journal of Behavioral and Experimental Finance 19, 39–55 (2018).
17. Sultana, S.T., Pardhasaradhi, S.: Loss aversion bias effect on investment decisions of individual equity investors – An empirical analysis. SUMEDHA Journal of Management 3(4), 150–160 (2015).
18. Kumar, A.A., Babu, M.: Effect of loss aversion bias on investment decision: A study. JETIR 5(11) (2018).
19. Gomes, F.J.: Portfolio choice and trading volume with loss-averse investors. The Journal of Business 78(2), 675–706 (2005).
20. Aljughaiman, A.A., Chebbi, K.E.: Do investor overconfidence and loss aversion drive Saudi firm market performance? The moderating effect of corporate governance. Sustainability 14(16), 10072 (2022).
21. Chen, A., et al.: Investing in green bonds with goal-oriented preferences. SSRN Electronic Journal [Preprint]. doi:10.2139/ssrn.4842059.
22. Rooh, S., et al.: An attempt to understand stock market investors' behaviour: The case of environmental, social, and governance (ESG) forces in the Pakistani Stock Market. Journal of Risk and Financial Management 16(12), 500 (2023).

23. Barber, B.M., Odean, T.: Trading is hazardous to your wealth: The common stock investment performance of individual investors. The Journal of Finance 55(2), 773–806 (2000).
24. Gavrilakis, N., Floros, C.: ESG performance, herding behavior and stock market returns: Evidence from Europe. Operational Research 23(1) (2023).
25. Zhang, Y., Zheng, X.: A study of the investment behavior based on behavioral finance. European Journal of Business and Economics 10(1) (2015).
26. Imade, O.: Impact of cognitive biases on ESG investment decisions
27. Modgil, S., et al.: A confirmation bias view on social media induced polarisation during COVID-19. Information Systems Frontiers 26(2), 417–441 (2021).
28. Westerwick, A., Johnson, B.K., Knobloch-Westerwick, S.: Confirmation biases in selective exposure to political online information: Source bias vs. content bias. Communication Monographs 84(3), 343–364 (2017).
29. Upadhyaya, C., et al.: Scholarly research dissemination. https://cibgp.com/au/index.php/1323-6903/article/view/2526, last accessed 2024/10/15.
30. Leite, B.J., Uysal, V.B.: Does ESG matter to investors? ESG scores and the stock price response to new information. Global Finance Journal 57, 100851 (2023).
31. Trichilli, Y., et al.: Impact of the confirmation bias on returns, expectations and hedging of optimistic and pessimistic traders before and during COVID-19 pandemic. EuroMed Journal of Business 19(2), 338–365 (2022).

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