

# When ESG Signals Become Uncertain: Retail Investors' Loss Aversion in China's Stock Market

Wang Ziting<sup>1</sup>, Ooi Kok Loang<sup>1\*</sup>

<sup>1</sup> City Graduate School, City University Malaysia, 46100, Petaling Jaya, Malaysia

\*Corresponding Author: [kokloangooi94@hotmail.com](mailto:kokloangooi94@hotmail.com)

Received: 19 January 2026 | Accepted: 21 February 2026 | Published: 1 April 2026

DOI: <https://doi.org/10.55057/ijaref.2026.8.1.29>

---

**Abstract:** *This research focuses on the ESG signals uncertainty role in influencing the loss aversion of Chinese retail investors in the stock market, based on the Prospect Theory as the frame of reference for the study. Since ESG signals are increasingly being integrated into the investment decision process, the lack of consensus, vagueness, and uncertainty regarding the ESG assessments can make a portion of the investors' feeling of security equate with discomfort&nbsp;sometimes. This research identifies perceived environmental risk uncertainty, perceived social responsibility ambiguity, perceived governance stability uncertainty, ESG information inconsistency, and ESG rating disagreement as the main ESG-related uncertainty signals that affect the investor's behavior. Employing a quantitative questionnaire-based method, the research looks into the effects of these uncertainty signals on loss aversion and also discusses the moderating role of risk perception. The anticipated findings are that the increase in ESG-related uncertainty will amplify the loss-averse behavior of the retail investors, especially under the condition of their high perceived risk. As an interdisciplinary approach for the behavioral impacts of ESG uncertainty in the case of an emerging market, this study of behavioral finance and sustainable investing has developed knowledge by showing that the conflict&nbsp;of inconsistently applied ESG information can be overcome by the investor's subjective changes only.*

**Keywords:** ESG Uncertainty; Loss Aversion; Risk Perception; Prospect Theory; Chinese Stock Market

---

## 1. Introduction

The boom of environmental, social, and governance (ESG) factors in financial markets is the key driver for the changing set of knowledge for investors. ESG thoughts have now become equivalent to the evaluation of the sustainability, capacity moral, as well as non-monetary risks, of businesses in the long term. The Chinese stock market saw the government, through legislation, mold the corporate information disclosure process and together with the public's enlightenment about ESG information, it resulted in a faster distribution of ESG-related information to the public (Loang, 2025). Nonetheless, this procedure is also about transparency and the accountability of investments. The latter has also involved new complexity and uncertainty in the sphere for the investors, notably where ESG signals were unclear or debatable, in different information sources.

Retail investors are a major force in China's stock market and are often depicted as individuals with limited access to professional analysis, diverse investment backgrounds, and a high degree

of market sensitivity. Unlike institutional investors, retail investors usually rely more on business that is publicly accessible, media coverage, and independent estimates to make their investment decisions (Tan et al., 2024). As ESG disclosures multiply and expand, the retail investors will be likely to get the evaluations that differ and even sometimes are opposite to the ESG realities like various ESG ratings, confused assessments of corporate social responsibility, or partly clear interpretations about governance stability (Loang, 2025). These instances may make it hard for them to decide and also increase the psychological reactions to perceived losses.

The particularity of ESG uncertainty is that it is oriented differently from the traditional financial risk because it not only lacks criteria but also can have no short-term financial impacts. The perceived environmental risk uncertainty might be because of the unclear regulatory path, climate policy issues, or the unpredictability of environmental liabilities (Kyaw, 2022). In the views of social responsibility ambiguity, this could happen when assessing the company's social performance is not easy or when the corporate acts do send dissimilar signals to the stakeholders (Lin, 2024). Likewise, the governance stability uncertainty may come from the issues of the trust, clarity, or corporate structures that are not necessarily good. The contradiction in the presence of ESG information and the disagreement between the agencies on the ESG rating may lead to the investor's self-evaluations, which will consequently make them more inclined to use subjective judgment.

The basic behavioral finance theories show that the investors do not act in a way that is completely rational when under uncertainty (Ooi & Lau, 2026). Actually, the psychological biases play a major role in the anticipatory reactions. A typical example is that of loss aversion, which is one of the most powerful and frequently seen biases according to which people have a tendency to put more emphasis on the losses than on the same quantity of gains. Under the conditions of uncertainty caused by ESG, it may occur that retail investors are overly concerned not to suffer the losses and therefore they will end up with not losing their investment but rather missing the profit. This phenomenon is mainly the case in developing markets where the market fluctuation and asymmetry of information are widely known.

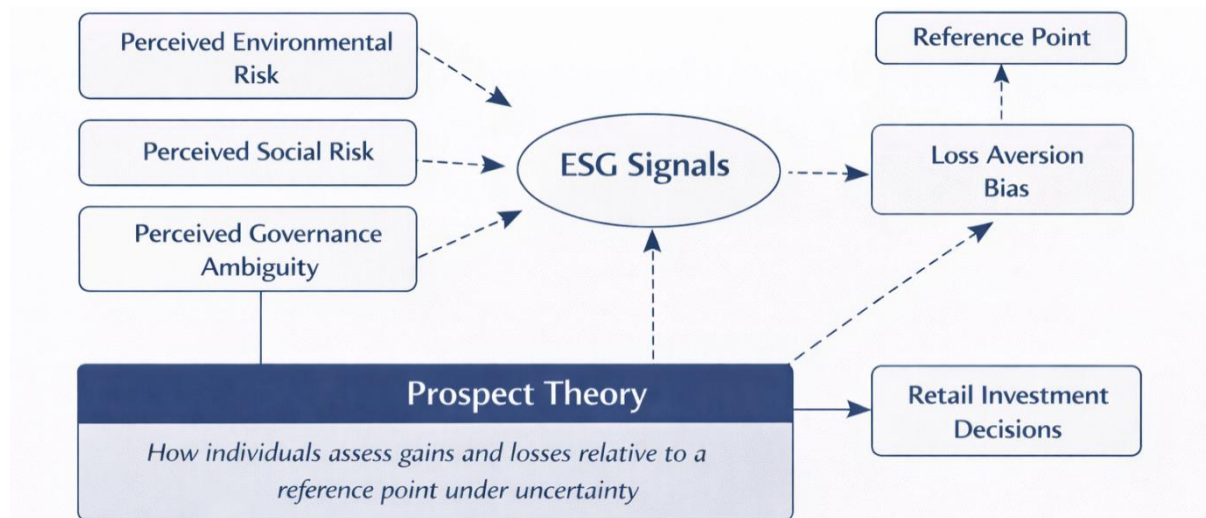
Thus, given this context, the present research aims to clarify how the very fact that ESG signals are uncertain affects the loss aversion of retail investors operating in the Chinese stock market. The study which is based on the sides of ESG uncertainty and risk perception that act as a moderating variable is the well-structured research work that intends to deliver the insightful view of how imperfect ESG information could alter investor psychology. Therefore, the research offers both the behavioral effects of ESG integration debate and the elucidation of considering the uncertainty and cognitive biases in the valuation of ESG information in emerging financial markets.

## **2. Literature Review**

### **Underpinning Theory: Prospect Theory**

Probabilistic Theory is a key area that helps one comprehend how the single subjects make decisions when they come across situations involving risk and uncertainty, and it is a good alternative to the expected utility psychology (Szollosi et al., 2023). Based on the ideas of Kahneman and Tversky, Probabilistic Theory mainly argues that first of all, people evaluate results in terms of a reference point (or initial mark), not in total or absolute numbers, and second, that the shifts in their preferences are due to psychological biases rather than pure rationality. A basic idea of the theory holds that people are loss averse and this means that

losing is much more painful than the pleasure of the same amount of winning, which is the cause of the unbalanced evaluation of risks and gains hence the action of the individuals is different from the rational economic behavior that usually is especially common in the uncertain decision made situations, like in the financial market.



**Figure 1: Theoretical Framework Based on Prospect Theory**

With regard to the actions of investors, Probabilistic Theory asserts that people's place on the risk continuum is dependent on whether the situations are framed as gains or losses relative to the reference points which are usually influenced by costs, previous performance or market conditions (Kok Loang, 2026). A new investment project is made through a decision that is taken when there is a possible loss (Shaturaev, 2022). The potential loss is something that they feel can only lead them to be risk averse therefore act in a mean that their behavior more increases the loss which is on the other hand. For the profit firms, for example, in the off chance that they might be involved in risk-increasing behavior in terms of projects, this is seen through the lens of either achieving goals or improving efficiency (Foss & Klein, 2023). The behavioral asymmetry makes a lot of the mentioned psychological biases be like people selling winning stocks and holding losers, being too conservative of the good news, and being so sensitive to fun negative news.

The main theater of enactment of the Prospect Theory is the high dramatics where individuals battle with impossible conditions and are confronted always with contradicting signals, like in the case of ESG-related ambiguity. ESG issues may be the environmental, social, and governance (ESG) statements that provide signals that are not totally settled in and also may carry different interpretations (Huang, 2022). A combination of perceived environmental risk, social-responsibility ambiguity, and governance instability uncertainty might definitely disturb investors in their judgment regarding the proper risk profiles of organizations. Consequently, the investors who are under the impact of the psychological factor rather than the objective probability evaluations may be found under those circumstances (Jain et al., 2022). To put it differently, the theory implies that if ESG is unclear or conflicting, the managers, in this case, will take on an overweight risk and the downside will be systematic loss. Thus, the theory of Prospect indicates that if the managers get the ESG information ambiguous or contradictory, they will tend to have an overweight in the assumptions about the risks related to negative outcomes thus making them act more loss-averse.

In addition, the Probate Theorem Mediterranean has been proposed wherein individuals distort subjective probabilities, and thus, actually, inflict decision-in-favor-of-distortion-on-effect-early- on-in-time. It is natural that in public discourse people tend to exaggerate catastrophic events such as environmental disasters, governance scandals, and social problems when these are presented by the media. The ESG information inconsistency and disagreement in ESG ratings would not only but also as far as marketing signals were impacted positively (Shi & Yao, 2025). In this way, it was not only that the investors perceived ESG losses which could be of critical value like those which are normally unfelt or impact the financial outcome very little that these losses could be of great importance.

Risk perception, which is the pivot of this discussion, directly connects with the major elements of Prospect theory. The way in which individuals see risk influences the remodeling of the situation and losses are taken into account against gains (Bolton et al., 2023). For example, environmental risk issues viewed as serious by investors are more likely to make them see the uncertainty about ESG as a threat to capital preservation. This, in turn, results in a more loss-averse decision process. On the other side, the risk-sensitive investors who have an ambiguous ESG signal might not be hidden in reality because the situation is not that serious, they just not get bothered by the unnecessary imprecise information. So, PPCT, the incorporation of Prospect Theory, provides a solid theoretical link for the explanation of the interplay between the ESG-related uncertainty and personal risk perception, which in turn shapes the excess loss that is among retail investors, therefore, it is necessary to elaborate the changes captured in behavioral patterns in the ESG-motivated investment decisions.

### **Previous Studies of Variables**

The cloud of doubt looms over the environmental risks that investors perceive, hence gaining more and more attention in the investment issues related to Environmental, Social and Governance, since the environmental scenarios are often unintelligible, complex, and painful to measure accurately. In capital markets, investors recognize environmental risk not only because it is actually there but also because there are uncertainties connected to the level, timeframe, and financial returns that are out there (Fischer, 2023). In addition, the glitch may arise from multifaceted and sometimes weird regulations, multiform climate policies, incomplete disclosure, and the nature of environmental problems such as pollution or extreme weather phenomena. On the other hand, retail investors can get more puzzled about the valuation in the case of environmental risk uncertainty, because sometimes the scheme of cash flows is not straight (Devine & Yönder, 2023). Therefore, the feeling of being irresponsible with the environmental risk is a psychological factor that leads to the increase of the thought and the focusing of attention on the downside scenarios, which in turn leads to the careful decision making, especially in the case of a perceived volatile market with negative signals increased and multiplied through media narratives and public debates.

The perceived ambiguity of social responsibility means the uncertainty involved in making the interpretation of the social performance and stakeholder-oriented behavior of a firm. Unlike many financial indicators, the social liability is usually communicated through the story disclosures, corporate campaigns, or third-party commentary that may be selective, symbolic, or difficult to verify. Social responsibility ambiguity is likely to arise when companies produce mixed messages—for example, in situations where there are public commitments to employee welfare alongside allegations of labor disputes or in the case where philanthropy initiatives are contrasting with consumer complaints (Foss & Klein, 2023). This type of ambiguity can be seriously undermined in the sense that it creates practical complications in risk measurement of the reputation and in people's response. In the behavioral perspective, the ambiguous social

signals can create more dependence on affective judgments and heuristic processing, bringing the investor to overweigh a possible downside risk due to their lack of clarity about possible actions of stakeholders and regulators.

Perceived stability governance uncertainty captures the misgivings of the investors about the trustworthiness, persistency, and overall functionality of the corporate governance strategies in the long run. The stability of governance is pivotal in the view of the investor as it demonstrates a level of adherence to management ethics, financial reporting integrity, and the trust that shareholders are cared for (Huang, 2022). The governance stability uncertainty may be due to the non-transparent ownership structures, a limited board independent of management, weak enforcement, frequent turnover of the top managerial positions, or the possible undetected misdeeds. For the retail investors, governance-related uncertainty can be highly analytic and consequential, as they lack the resources for independent verification of governance quality which may be the reason for their interpretation of instability as the existence of downside risks that are hidden (Jain et al., 2022). In situations where the governance signals are ambiguous, investors' awareness of the potential adverse outcomes like agency problems, earnings manipulation, and regulatory penalties increases which leads to conservative behaviors being reinforced, thus, making the governance risks more pronounced.

OSG inconsistency is the extent to which ESG-related disclosures and news present fragmented, contradictory, or unstable signals across time and sources (Al Amosh, 2025). It is possible for inconsistency to appear because the firms might publish ESG statements that are contrary to the observable results, changes in the disclosure framework from one reporting cycle to another, or when various media outlets offer contrary interpretations of the same ESG event. In the information-processing framework, inconsistency increases cognitive load and decreases the perceived reliability of ESG signals, which ends up making it difficult for investors to form consistent beliefs (Shi & Yao, 2025). In the case where the investors face such inconsistent ESG issues, they might shift the focus from analytical evaluation to precautionary decision rules which could include priority to capital preservation and the decision to avoid positioning in the uncertainties (Bolton et al., 2023). The inconsistency of the ESG information can thus function as a channel through which ESG integration, rather than improving decision quality, inadvertently increase behavioral biases.

The disconnect in ESG ratings is a prominent issue in the challenges of sustainable finance and it chiefly arises from the variances in the methodologies and baseline conditions among the different ESG rating agencies. The occurrence of such disagreements is not merely a problem for companies but for the investors as well, given that retail participants tend to adjudicate the rating as a device to facilitate tough ESG evaluations (Fischer, 2023). When as per the concern the ratings do not match, investors are more likely to face confusion on which of the evaluations is more respected, so they will consider it more ambiguous and it will turn out to be harder for them to make decisions through the ESG investments. The difference in understanding of the ratings can also enhance to the foreseen threats as an investor could regard it as warning of the ESG being dubious or unresolved and having hidden defects. Thus, the ESG rating dislocations definitely can end up in the situation when the investors will have to overestimate the probability of whether the negative ESG signals will be either hidden or diminished by various evaluators.

The aspect of risk perception, a moderating variable, is of vital importance for the process of translating ESG-related uncertainty into actionable investor decisions. The behavioral finance literature repeatedly points out the fact that individuals differ in their perception and emotional

reactions to uncertainty, even when exposed to the same set of information (Walters et al., 2023). Investors with strong risk perception are more likely to see the ESG signals that are ambiguous as capital threats and to predict adverse outcomes, thereby strengthening the psychological impact of ESG uncertainty. On the other hand, those stakeholders with a low-risk perception may tolerate more the incongruous ESG feelings, they will not tend to see the inconsistency as something alarming, and they will be willing to keep their positions despite the doubts. Allocating risk perception as a moderator is in line with cognitive decision-making models as it acknowledges the exact ESG uncertainty signal causing different behavioral intensities according to the individual's subjective risk sensitivity.

The loss aversion, a dependent variable, is one of the most powerful cognitive biases stated in the Prospect Theory and is strongly connected to ESG-related decision problems which are characterized as vague and conflicting signals (Staffieri, 2025). Loss aversion is the name of the phenomenon that displays the incidence of investors suffering greater losses than receiving similar gains and as a consequence, opt for policies that protect against losses rather than searching for the best return. In cases when the ESG signals are not certain be it through environmental risk uncertainty, social responsibility ambiguity, governance stability uncertainty, information inconsistency, or rating disagreement, the investors can become overweight with possible adverse consequences which cause unintentional psychological reactions. In the emerging markets where there is high retail participation, this tendency could get worse through limited analytical capacity and greater sensitivity to market narratives which can result in conservative allocation decisions, withdrawal from perceived risky stocks, and stronger preference towards strategies that will reduce the loss possibility.

### **3. Methodology**

Quantitative questionnaire method is the best choice for the research objectives due to this method which makes it possible to measure and analyze the psychological responses of the investors concerning the ESG uncertainties and the systematic loss-averse behavior with the help of SPI. Loss aversion, risk perception, and perceived ESG uncertainty are the latent constructs that are not directly observed, so these are structured measurements that are put through self-reported indicators (Cantoni, 2024). Because the questionnaire-based technique operates these abstract constructs into measurable variables, then the researchers can analyze their interrelationship based on the theoretical model, which is constructed according to the Prospect Theory.

In addition, the quantitative survey method aids in that it grasps the investors' views of the ESG uncertainty. That is, the alternative understanding of the behavioral responses. Among others, the relationship between environmental risk uncertainty, social responsibility ambiguity, governance stability uncertain, ESG information inconsistency, and ESG rating disagreement is very much dependent on the perception of the individual concerned, and is seldom independent of it. The user's cognitive as well as emotional information processing relies on this aspect (Shin et al., 2025). An especially up-to-date questionnaire adapted from behavioral finance literature and ESG literature mostly using Likert-scale items, is a tool that assures that the respondents will evaluate consistently and dependably, which in turn, will contribute to an enhanced performance of the constructs. The constructs with varied experiences and risk attitudes can be compared in such a meaningful way.



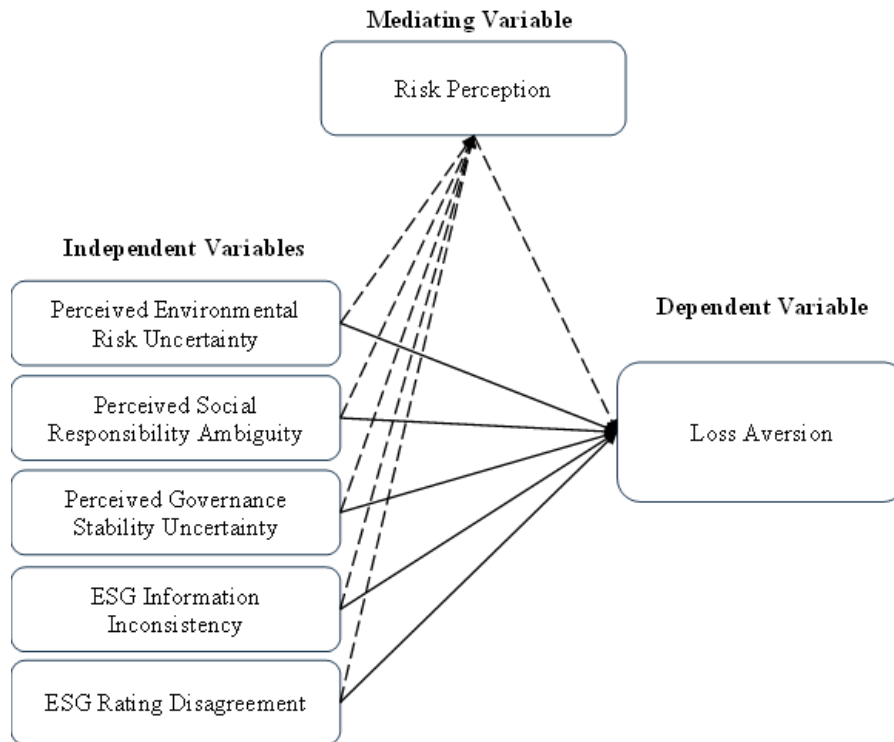
**Figure 2: Quantitative Questionnaire Method**

At the same time, the quantitative questionnaire instrument fosters the use of advanced statistical techniques for testing the proposed relationships and moderating effects on account of the input side. Indeed, the data, which are structured and available in regression type, allow for regression analysis or structural equation modeling where the direct effect of ESG-related uncertainty on loss aversion and the mediating effect of risk perception can be addressed (Wang et al., 2025). To the extent that they admit the simultaneous operation of several variables while controlling for measurement error and individual heterogeneity, these strategies are especially advantageous in theory-testing studies. Not only does this quality promotion of the research bolster the explanatory power but it also renders the results more generalizable.

Furthermore, the questionnaire mode of inquiry is highlighted as a completely new approach on the plot of retail-investor dominated stock markets in China (Tan et al., 2024). The distribution of the large-scale survey is an effective method of data collection due to the existence of retail investors in different parts of the country that are a mixture of different demographics and socio-economic characteristics. In particular, the online survey comes with the bonus of being both accessible and anonymous, which in turn can make it easier for investors to respond honestly about their risk attitudes and weight loss sensitivity (Packin et al., 2025). It is particularly valuable in addressing the issue of behavioral biases where anonymity is a tool to dissolve the need among respondents to be seen as more rational than they really are.

#### **4. Proposed Framework**

The present study is primarily based on Prospect Theory, which is the theoretical framework that is being used to illustrate how retail investors in China’s stock market exhibit loss aversion due to the ambiguity in ESG signals (Xia & Madni, 2024). The main aim of this theory is to show that investors are inclined to consider ESG-related information not solely on the basis of objective probabilities but rather through subjective psychological processes that are conditioned by uncertainty, ambiguity, and perceived risk. In the ESG contexts where the information often is uncertain, controversial, and convoluted, the psychological variables are the most active. The framework subsequently proposes ESG uncertainty as the necessary antecedent to the ensuing loss-averse behavior resulting from heightened risk emotions among the investors when presented with either unclear or conflicting signals.



**Figure 3: Theoretical Framework**

The model suggests that variability in perceived environmental risk, ambiguity in perceived social responsibility, and uncertainty in perceived governance stability are the three fundamental elements that embody firm-level ESG-related uncertainties in their respective domains. Such notions are indicative of the investors’ suspicions about the environmental exposure, social behavior, and governance of the companies being unreliable and not fully transparent (Acharya, 2024). From a Prospect Theory standpoint, these kinds of uncertainties shift the investor's focus from reference points such as their initial investment value or their recent performance to the possible losses that may occur. In the meantime, as the investors’ perceptions of the future become blurrier, their inclination to think about the possible negative outcomes increases leading to the psychological loss weighting to rise. Thus, the loss overweighting results in conservative decision-making.

Furthermore, the framework presents companies' ESG inconsistency and ESG rating disagreement as the information environment variables that provide ambiguity (Shi & Yao, 2025). Inconsistent ESG disclosures and opposing third-party ratings, rather than clarifying the picture of ESG signals, result in the lack of confidence and transparency and consequently make it harder for investors to develop stable expectations. This information fragmentation creates more uncertainty and diminishes the investors' trust in their good ESG evaluation. Hence, it is through the theoretical framework that those circumstances are foreseen to aggravate loss aversion by compelling investors to opt for protective measures based on avoiding potential losses instead of striving for uncertain profits.

Risk perception is a variable that moderates which means that it actually changes the strength of the relation between ESG-related uncertainties and loss aversion (Jin et al., 2025). Using the book of Prospect Theory, a perception of risk is a factor that shapes the way that investors consider outcomes, losses and gains. If the risk perception is high among the investors, they are more likely to see ESG uncertainty as a risk and exaggerate the chances and effects of bad

outcomes. So, ESG-related uncertainty will have more impact on the loss aversion of these investors who think they could be losing it (Tang et al., 2025). Moreover, the investors who have a lower perception of risk might show a higher tolerance for uncertainty, and would be less likely to react to inconsistent or vague ESG statements, hence they would demonstrate a lower loss-averse response.

The theoretical framework maintains that the varying degrees of ESG-related uncertainty are directly responsible for the increase in retail investors' loss aversion. Meanwhile, the emotional complexity of risk perception differences has a significant impact on the scope of this process (Zhao et al., 2023). Basically, the real ESG uncertainty, inconsistency in information, and the psychological nodality to risk can be better expressed as the model provided under the Prospect Theory. The model, first, however, provides an explanation of investor behavior in the face of imperfect ESG signals in an emerging market context, and, second, serves as a solid reference point for further empirical testing and understanding of the impact of ESG integration on behavior in retail sectors.

## 5. Conclusion

The research establishes that the uncertainty inherent in the ESG signals makes a considerable contribution to the formation of loss-averse behavior by retail investors in China's stock market (Rooh & Hussain, 2022). Since ESG considerations become more and more part of the investment decision, the exposure of ESG information that is ambiguous, inconsistent, or conflicting is able to increase the psychological sensitivity of the investors to possible losses. The uncertain perception of environmental risks, social responsibility ambiguity, and governance stability uncertainty, together with ESG information inconsistency and ESG rating disagreement, lead to a situation where the investors find it challenging to formulate stable expectations concerning firms' performances. Accordingly, under these circumstances, retail investors are more prone to preferring loss avoidance over the potential gains, thereby reflecting a stronger loss-averse reaction.

The study results back the Power of Prospect Theory to explain the investor behavior with ESG uncertainty as a cause. Instead of judging the ESG facts by objective probability assessments, investors perceive the signals of ESG risks of being uncertain, in the reference point systems, and make room for potential negative outcomes. The asymmetric gain and loss evaluations are the factors explaining ESG risks that may make risk-averse decisions to protect capital even when sustainability motives might confirm the contrary (Cantoni, 2024). The findings, therefore, imply that ESG signals cannot always directly elicit more reasonable or long-term oriented investment behavior; in fact, their behavioral impact is burdensome on the prong of risk and consistency of the informational environment.

A main conclusion reached by the research is the moderating effect of risk perception in the interplay of ESG-related uncertainty and loss aversion. Investors who feel they have more risk are the ones that are more impacted by the ambiguous ESG signals and also more prone to interpret uncertainty as a danger to capital preservation (Wang et al., 2023). For the investors in this category, the ESG uncertainty has a deeper influence on the loss-averse behavior- that is, to avoid the perceived risky investments even more or to eject positions earlier. In comparison, those investors with lower risk perception are able to endure the uncertainty better and show weaker loss-averse responses, even in the case of inconsistent ESG information. This finding throws light on the relevance of the individual psychological parameters in the mediation of results.

The research will add to the established array of knowledge at the intersection of behavioral finance and sustainable investing showing how ESG uncertainty shifts the psychological profiles of the investors in an emerging market scene. It argues that the real success of ESG integration is dependent not only on the quantity of disclosure but also on the quality of information and the capabilities of the investors (Ellili, 2022). By theorizing the pathways that ESG uncertainty and risk perception together affect aversion, the research makes a substantial contribution to analyzing retail investor behavior besides providing a framework for improving ESG communication, investor education, and market stability especially in the context of the rising complexity of sustainability information.

### **Implications**

This inquiry through the results paves the way to the generation of a few critical theoretical rules on an ongoing behavioral finance and sustainable investment discourse. It is the research that explicitly links ESG-associated uncertainty and loss aversion via the transposition of Prospect theory, which can be added to traditional behavioral. These now include not only the financial dimensions but also the non-financial and the sustainability-related ones (Boros et al., 2022). That, in fact, is the new model of behavioral finance which supports the previous hypothesis. The model has now progressed to showing that ESG signals marked by vagueness, inconsistency, and disagreement assert similar impacts on the behavior of those who avoid losses as traditional financial economic uncertainty does. In so doing, the authors of the study provide new input presenting the case of ESG information as not merely informing investors about their investments' long-term value but also helping them to form a certain psychological response that will, at least in the short term, sculpt their decision-making process under uncertainty. Along these lines, the paper has a two-fold achievement: It brings in perspective the role of risk perception as a moderating factor the impact of which can be studied by looking through the diversity of the people's behavior. Individual variability and the effect of those individuals on the ESG uncertainty have thus been emphasized.

Taking the research's findings as a managerial is a key which opens up to a clear conclusion that the study serves as a source of valuable insights for corporate managers and investor relations professionals dealing with ESG communication (Penning, 2024). The findings indicate that blurred or conflicting ESG disclosures may trigger unintentional speculation among investors and particularly risk-aversion, thereby leading to the conservative or defensive investment decision due to negative/low perception of the company's value. Consequently, managers are recommended to put the clarity, consistency, and credibility of the ESG reporting first; the environmental stories should get along with visibility of actual practices and openness of data (Ulvtorp, 2024). Reducing the ambiguity of environmental strategy, social responsibility commitments, and governance frameworks might help in solving the investor issue and creating a trust base that is bigger in the long-term continuity of the companies. Thus, the efficient ESG communication might be the only solution to balancing the investors' expectations and preventing actually avoidance decisions which mainly stem from the fear of reluctance.

The study also outlines some areas for investment intermediaries such as financial advisors, brokerage firms, and digital investment platforms to address. Because loss aversion is compounded by the ESG-related uncertainty, therefore, ESG intermediaries will thrive as they will earn through the new revenue when they can introduce retail investors to the ESG topics in a non-biased and contextualized manner (Bereni, 2025). Teaching material like decision-support systems, explanatory reports, and educational tools that disclose technical findings of the ESG ratings, discuss methodological differences, and reveal the connection between

climate change and financial risks should be provided by the intermediaries in order to eliminate confusion and avert overreaction to vague signals. By dealing with uncertainty openly, the intermediaries help the investors make choices that are true to their long-term goals instead of the short-term loss aversion.

The level of policy we must talk about before establishing the benefits of these findings is the government structural ESG legs, regulating the framework that is structures and ESG ratings. Meanwhile, adherence to the ESG reporting requirements also along with other regulatory actions remain good but the study would like to make noting that inconsistencies and differences in ESG assessments are more than the loss of trust of the investors and the consequent behavioral biases. Thus the state and regulators are requested to back the ESG standardization, a clearer set of directives on the disclosure and sprightliness among the ESG rating agencies (Mallin, 2023). Also, in the discussion of the broader equity investor protection and financial education program, ESG literacy and the knowledge of behaviors should also be included so that retail investors would smoothly go through the unsettling environment of ESG-related risk.

The overarching claim of the study still in showcasing the theoretical implications, managerial implications, and policy implications has a best put forward towards the understanding of their interconnectedness. The claim refers to the idea that the significant integration of behavior in finance and investment relies heavily on information quality perception and investor psychology which remains the core (Bhanu, 2023). Through the lens of the ESG-related decision-making process loss aversion and risk perception are demonstrated anew. The breakthrough is the holistic comprehension of the market response to sustainability information that is here present and the actionable suggestions for the enhancement of both financial markets and the knowledge level of the market participants that arise from that.

From the theoretical perspective, the research adds to the knowledge of behavioral finance and ESG in new ways by the increased focus on the mental processes that influence investor decision-making which is subject to the ESG signals risk. The use of Prospect Theory in an ESG-related uncertainty context by the study not only bridges the gap but also extends the coverage of loss aversion research in the area of the non-financial and sustainability discourse (Barrera, 2024). It states that ambiguity, inconsistency, and disagreement in ESG signals can be a cause of even more potent investors' losses than they actually perceive, notwithstanding the provision of flaw in the financial area now. The insight from the study means that in some instances the ESG signals that are not clear or are conflicting can lead to biased actions which in turn are responsible for a wrong calibration in investors' profitability models (Virtanen, 2025). Furthermore, the risk perception plays a role that moderates which is the heterogeneity of the investors that come into the equation. The same ESG uncertainty is capable of making loss aversion different levels due to differences in the risk-taking of individuals.

At the corporate level, the research is a source of golden insights and information to both corporate managers and investor relations professionals who deal with ESG strategy and communication. The results that evidence clearly portray that the company's ESG disclosures that where the firm fulfilled the requirements of clarity consistency and credibility under a replication of IIS fears over stock losses because of defensive behaviour can diminish and as a result can impact positively on the company's perceived value. Thus, it is recommended that managers need to devote more time to both the quantity of ESG disclosures as well as the clarity, consistency, and credibility (Al Amosh, 2025). Transparent environmental strategies, consistent social responsibility reporting, and coherent governance structures will counteract

the perceived uncertainty so that no feelings of loss-averse come up among retail investors. Harmonizing ESG stories with fact-based actions and visible indicators of performance in the future not only equalizes the investor's boat in the form of stabilization but also provides the local companies with mitigating the market reactions that are mainly based on fear and not on substantial evidence.

The research also elaborates on the implications for financial intermediaries like brokers, financial advisors, and online investment platforms, who assume the pivotal role in the facilitation of the retail investor's understanding of the ESG information. Given the subjective nature of ESG assessments and the complexity of the decision, the intermediaries would collaborate with the investors by exposing interpretational tools that lessen the loss aversion by explaining ESG ratings which the investors find difficult to understand together with contextualizing the ESG uncertainty. The use of tools that disclose the source of ESG rating variance, or share the probable nature of environmental risks should be the tools which are targeted on the rational mind of the investor and hence possibly help reduce impulse decisions and make the process of decision making. Balancer. Allowing intermediaries to create a healthy investment flow diminishes the fear-driven aspects of the markets.

From a policy perspective, the findings from the investigations drive home the urgency of ESG regulations that usher in clarity, consistency, and comparability in ESG disclosures. These findings show that while increasing transparency through new ESG requirements is good, variations and dissemination of ESG information may lead to an investor's state of mind that is counter-intuitive (Bereni, 2025). Therefore, policymakers should push along the ESG standardization and also greater transparency on the methodologies for ESG rating agencies. Additionally, incorporating ESG education which is a behavioral finance program can also be a means of empowering retail investors to understand uncertainty and distancing them from the psychological distortions that come from inconsistent ESG information (Mallin, 2023). The move is especially important in the emerging markets that are exposed with high retail investor participation and concentrated regulation footprint.

As a whole the study legislative, managerial, and imagined implications stress the core point which is that ESG effectiveness in integration is not only tied to information practices but also profoundly depends on the psychology of investor interpretation of uncertainty (Bhanu, 2023). By explaining how the ESG uncertainty in addition to the perception of risk works the study creates a basis for theoretical development, corporate practice, and regulations that would result in a more flexible, transparent, and be from of mental financial markets.

### **Limitations and Recommendations**

The strengths aside, this research is still confronted with some limitations that should be acknowledged when discussing the findings. As a first mark, the investigation solely relies on the utilization of a quantitative questionnaire and self-reporting for collecting ESG data involved in uncertainty, risk perception and loss aversion factors (Barrera, 2024). This approach may be appropriate due to the psychological constructs that it evaluates, but the disadvantages of self-reported data are that it may be influenced by response bias, recall bias, or social desirability bias. Retail investors might have a hard time in identifying their own loss aversion tendencies that are correct or the perceptions on ESG of this being uncertain mistakenly, which then can lead to measurement errors (Penning, 2023). Although the application of validated scales and statistical methods is instrumental in reducing the abovementioned concerns, self-reported perceptions may still not correspond to the actual investment behavior recorded in real trading situations.

Secondly, the utilization of a cross-sectional research design prevents the determination of the relationships among ESG uncertainty, risk perception, and loss aversion not being identified in this study as causal. The lenses through which investors interpret facts and subsequently respond to them are not fixed but rather dynamic and therefore compromises through market swings, legislative transformations, or large ESG-relevant occurrences such as environment disasters or governance misdeeds (Berrera, 2024). The presence of one cogent investor's mentality snapshot, however, is not a sufficient ground to presume that these temporary traits are completely time variable. Moreover, the manuscript has a narrow approach by concentrating only on retail investors in the Chinese equity market, thus limiting the scope of outcomes. Changes in institutional structures, ESG revelation policies, cultural tilts against risk, and the national investor mixture are selling the hand of a different path.

Thirdly, the analysis is more fixated on the perceived ESG uncertainty than on the actual ESG performance indicators. While perceptions are of utmost importance in the process of ambition stretching, they do not give realistic measures on the state of environment, society or governance of firms (Boros et al., 2022). The inconsistency of ESG rating and the mixture of information are resolved from an investor's point of view whereas from a direct comparison of rating systems' techniques or quality of disclosures, it would be a totally different view. This attitude towards perception is rationally supported but it nevertheless inhibits the separation of whether loss-averse behavior is mainly traced to informational deficiencies or to personal cognitive and emotional bias.

In the light of the mentioned limitations, it is worthy to put out some recommendations for the future researches. Such research might as well employ longitudinal designs to scrutinize the loss of aversion in the course of time through the alteration of transparency of ESG data, regulatory policies or substantial ESG incidents. The use of these methods would give a more precise cause and effect and a better understanding of the way that the psychology of the investor reacts to changing ESG factors. Besides these, experimental designs, scenario-based experiments, or control information can supplement survey data through a demonstration of the isolation of the specific types of ESG uncertainty in the making of loss-averse decisions.

### **Acknowledgement**

The authors would like to express sincere gratitude to everyone who contributed, both directly and indirectly, to the completion of this study.

### **Conflict of Interest Statement**

The authors declare that there is no conflict of interest regarding the publication of this study.

### **Reference**

- Acharya, S. (2024). *SUSTAINABLE INVESTMENT PERCEPTION AND ITS INFLUENCE ON INVESTMENT DECISIONS* (Doctoral dissertation, Shanker Dev Campus).
- Al Amosh, H. (2025). Exploring the Influence of Accounting Reporting Complexity on ESG Disclosure. *Corporate Social Responsibility and Environmental Management*.
- Barrera, L. C. A. (2024). *The Law of ESG Derivatives: Risk, Uncertainty and Sustainable Finance*. Routledge.
- Bereni, L. (2025). *Managing Corporate Virtue: The Politics of Workplace Diversity in New York and Paris*. Oxford University Press.
- Bhanu, B. K. (2023). Behavioral finance and stock market anomalies: Exploring psychological factors influencing investment decisions. *Commer. Econ. Manag*, 23.

- Bolton, E., Bookbinder, R., Middlemiss, L., Hall, S., Davis, M., & Owen, A. (2023). The relational dimensions of renovation: Implications for retrofit policy. *Energy Research & Social Science*, 96, 102916.
- Boros, A., Lentner, C., & Nagy, V. (2022). New aspects of sustainability: analysis of the European practice of non-financial reports. *Public Finance Quarterly= Pénzügyi Szemle*, 67(2), 181-195.
- Cantoni, N. E. (2024). *Loss Aversion in the Context of Sustainability* (Master's thesis, University of Zurich).
- Devine, A., & Yönder, E. (2023). Impact of environmental investments on corporate financial performance: Decomposing valuation and cash flow effects. *The Journal of Real Estate Finance and Economics*, 66(4), 778-805.
- Ellili, N. O. D. (2022). Impact of ESG disclosure and financial reporting quality on investment efficiency. *Corporate Governance: The International Journal of Business in Society*, 22(5), 1094-1111.
- Fischer, M. (2023). *Disruptive Change and the Capital Markets: On Information, Risk and Uncertainty* (Vol. 65). Walter de Gruyter GmbH & Co KG.
- Foss, N. J., & Klein, P. G. (2023). Why do companies go woke?. *Academy of Management Perspectives*, 37(4), 351-367.
- Huang, D. Z. X. (2022). Environmental, social and governance factors and assessing firm value: Valuation, signalling and stakeholder perspectives. *Accounting & Finance*, 62, 1983-2010.
- Jain, J., Walia, N., Kaur, M., & Singh, S. (2022). Behavioural biases affecting investors' decision-making process: a scale development approach. *Management Research Review*, 45(8), 1079-1098.
- Jin, T., Wu, Y., Lu, M., & Wang, J. (2025). Green vision, steady minds: the impact of corporate ESG performance on managerial perception of uncertainty. *Chinese Management Studies*.
- Kok Loang, O. (2026). Framing the Market: How Brand Visibility and Sentiment Shape Stock Reactions in the US, China, and India?. *Sage Open*, 16(1), 21582440251409444.
- Kyaw, K. (2022). Effect of policy uncertainty on environmental innovation. *Journal of Cleaner Production*, 363, 132645.
- Lin, W. L. (2024). The role of corporate social responsibility and corporate social irresponsibility in shaping corporate reputation: An analysis of competitive action and innovation strategies. *Corporate Social Responsibility and Environmental Management*, 31(2), 1451-1468.
- Loang, O. K. (2025). Can Herding Be Adaptive? Evidence from Markets Sentiment, News Sentiment and Happiness in Global Energy Markets. *Millennial Asia*, 09763996241313001.
- Loang, O. K. (2025). Can machine learning surpass human investors? Evidence from adaptive herding behaviour in US, China and India. *Journal of Applied Economics*, 28(1), 2435796.
- Mallin, K. (2023). Government-Mandated ESG Disclosure: It's Not Easy Being Green. *Hous. L. Rev.*, 61, 855.
- Ooi, K. L., & Lau, W. Y. (2026). *Behavioural Finance and Ethical Investing*. Taylor & Francis.
- Packin, N. G., Kliger, D., Reichman, A., & Rabinovitz, S. (2025). Hooked and hustled: The predatory allure of gamblified finance. *Columbia Business Law Review*.
- Penning, T. (2024). PR capacity on corporate boards: claiming the CSR and ESG responsibility?. *Journal of Communication Management*, 28(3), 482-497.
- Rooh, S., & Hussain, A. (2022). The behavioral factors and individual investor's trading performance in Khyber Pakhtunkhwa: The mediating role of environmental, social,

- and governance (ESG) performance: Herding, loss aversion, mental accounting, overconfidence, and ESG performance. *City University Research Journal*, 12(2).
- Shaturayev, J. (2022). Efficiency of investment project evaluation in the development of innovative industrial activities. *ASEAN Journal of Science and Engineering*, 3(2), 147-162.
- Shi, Y., & Yao, T. (2025). ESG Rating Divergence: Existence, Driving Factors, and Impact Effects. *Sustainability*, 17(10), 4717.
- Shin, D., Koerber, A., & Lim, J. S. (2025). Impact of misinformation from generative AI on user information processing: How people understand misinformation from generative AI. *New Media & Society*, 27(7), 4017-4047.
- Staffieri, E. (2025). Green finance for the bioeconomy: bridging the gap between ESG rating divergences, behavioural biases and communication.
- Szollosi, A., Donkin, C., & Newell, B. R. (2023). Toward nonprobabilistic explanations of learning and decision-making. *Psychological Review*, 130(2), 546.
- Tan, L., Zhang, X., & Zhang, X. (2024). Retail and institutional investor trading behaviors: Evidence from China. *Annual Review of Financial Economics*, 16, 459-483.
- Tang, C. H., Liu, H. C., Lee, Y. H., & Hsu, Y. T. (2025). ESG risk, economic policy uncertainty, and the downside risk: Evidence from US firms. *The North American Journal of Economics and Finance*, 75, 102293.
- Ulvtorp, H. (2024). Management practices and digital strategies for enhanced ESG reporting quality.
- Virtanen, J. (2025). ESG Investing and Investor Behavior: A Literature Review on Financial Performance and Behavioral Decision-Making.
- Walters, D. J., Ülkümen, G., Tannenbaum, D., Erner, C., & Fox, C. R. (2023). Investor behavior under epistemic vs. aleatory uncertainty. *Management Science*, 69(5), 2761-2777.
- Wang, S., Hu, C., & Chen, S. C. (2025). Exploring the mediating role of attitude in ESG investment intentions: insights from the Fogg behavior model. *Industrial Management & Data Systems*, 125(10), 2777-2800.
- Wang, W., Sun, Z., Wang, W., Hua, Q., & Wu, F. (2023). The impact of environmental uncertainty on ESG performance: Emotional vs. rational. *Journal of Cleaner Production*, 397, 136528.
- Xia, Y., & Madni, G. R. (2024). Unleashing the behavioral factors affecting the decision making of Chinese investors in stock markets. *Plos one*, 19(2), e0298797.
- Zhao, Y., Jiang, Y., Zhang, W., & Zhu, Y. (2023). Relationship between risk perception, emotion, and coping behavior during public health emergencies: a systematic review and meta-analysis. *Systems*, 11(4), 181.