

Emotional Regulation and Gendered Behavioral Biases in a Stock Market Simulation: Evidence from Fifteen Semi-Structured Interviews with Novice Investors

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Abstract. This article examines how novice investors regulate emotions during a four-hour stock market simulation and how these emotional regulation patterns differ according to gender. Based on fifteen semi-structured interviews conducted after the simulation, the study uses a qualitative comparative approach combining inductive coding of emotional narratives with deductive interpretation through behavioral finance concepts. The findings suggest that gender differences do not primarily concern the emotions experienced, since stress, frustration, confidence, disappointment and satisfaction appear across both groups. Differences emerge in the way emotions are regulated and converted into financial decisions. Four comparative axes are identified: reaction to losses, effect of gains, decision-related stress and response to ranking. Several male participants tend to transform loss and frustration into reparative action, such as trying to recover losses, increasing exposure or changing strategy. Several female participants regulate negative emotions through protection, prudence, analysis, reduced exposure or withdrawal. These patterns are not universal, and several counterexamples are observed, but they suggest that emotional regulation may constitute an important intermediate mechanism between emotions and behavioral biases in novice financial decision-making.

Keywords: *Behavioral finance, Emotional regulation, Gender differences, Novice investors, Stock market simulation, Loss aversion, Overconfidence, Semi-structured interviews*

1. Introduction

Behavioral finance has challenged the assumption that financial decisions can be fully explained by rational calculation. Prospect theory has shown that individuals evaluate gains and losses asymmetrically, with losses generally producing a stronger psychological impact than equivalent gains (Kahneman & Tversky, 1979). In financial markets, this asymmetry is reflected in well-documented behaviors such as the tendency to hold losing positions too long and sell winning positions too early, commonly referred to as the disposition effect (Shefrin & Statman, 1985). These findings suggest that financial choices are emotionally embedded responses to gains, losses, uncertainty, and feedback.

Emotions are therefore central to the analysis of financial decision-making. Market situations expose investors to fear, confidence, frustration, excitement, regret, and disappointment. These states may influence risk perception, the speed of decision-making, the willingness to increase exposure and the tendency to persist in or abandon a strategy. Lo, Repin, and Steenbarger (2005) have shown that emotional states are closely associated with trading behavior, highlighting the importance of affective processes in market decisions. From this perspective, the investor is an emotionally engaged actor whose decisions emerge from the interaction between market signals, subjective interpretations and emotional reactions.

Gender has also received considerable attention in behavioral finance. A recurrent finding is that men tend, on average, to trade more frequently than women, a difference often interpreted

through the lens of overconfidence. Barber and Odean (2001) show that men trade more actively than women and that this higher trading activity reduces their returns. Such results have contributed to a common interpretation in which men are described as more confident and more prone to excessive trading, while women are often characterized as more cautious or less exposed to risk. Although this distinction has empirical support in several contexts, it may become overly general when applied to specific decision-making situations, especially those involving novice investors.

In a stock market simulation, both male and female novice investors may experience stress, frustration, disappointment or satisfaction. The relevant issue may therefore be less whether men and women experience different emotions than how they regulate these emotions and translate them into financial decisions. Indeed, the same emotion may lead to different decision-making outcomes. A loss may result in recovery by increasing exposure, but it may also lead to caution or the protection of capital. Similarly, a gain may reinforce confidence and encourage risk-taking, but it may also produce satisfaction without necessarily increasing exposure. Emotional regulation provides an intermediate level of analysis between emotion and behavioral biases. Following Gross (1998), emotion regulation can be understood as the process through which individuals influence which emotions they have and how these emotions are experienced and expressed.

This article examines how novice investors regulate emotions during a four-hour stock market simulation and how these regulation patterns differ according to gender. The analysis is based on fifteen semi-structured interviews conducted after the simulation: six with male participants and nine with female participants. The study adopts a qualitative and exploratory approach, focusing on emotional narratives, reported decision-making behaviors and their interpretation through behavioral finance concepts. The research question is: do the differences between men and women in a short stock market simulation primarily concern the emotions experienced, or the way these emotions are regulated and transformed into financial decisions?

The article makes three contributions. First, it provides a qualitative analysis of novice investors' emotional experiences in a simulated trading environment. Second, it introduces emotional regulation as an intermediate mechanism linking emotions to behavioral finance biases, including loss aversion, overconfidence, loss recovery behavior, escalation of commitment, the disposition effect, gain-induced risk taking and social comparison. Third, it nuances conventional gender-based interpretations in behavioral finance. Rather than supporting a simple opposition between risk-seeking men and cautious women, the findings suggest differentiated emotional regulation patterns. Several male participants tend to transform loss or frustration into reparative action, such as attempting to recover losses, modifying strategies, or increasing exposure. Several female participants often regulate negative emotions through security-seeking, prudence, analysis, reduced exposure, or withdrawal. These tendencies suggest that gender differences in novice financial decision-making may be better understood through styles of emotional regulation than through emotions alone.

The remainder of the article is organized as follows. The next section reviews the literature on emotions in financial decision-making, behavioral biases among investors, gender differences in trading behavior, and emotional regulation. The methodological section presents the simulation setting, the interview corpus, and the coding procedure based on emotional-decision episodes. The results section identifies four comparative axes: reaction to losses, effect of gains, decision-related stress, and response to ranking. The discussion section interprets these findings in relation to behavioral finance and gender research, while emphasizing the exploratory nature of the results. The next section concludes by outlining the implications and the last one discusses limitations and avenues for future research.

2. Literature Review

2.1. Emotions and Financial Decision-Making

Financial decision-making is not only a matter of information processing, valuation, and expected return calculation. It is also shaped by affective reactions to uncertainty, gains, losses, time pressure, and feedback. Market environments expose individuals to rapidly changing signals that may generate stress, fear, excitement, confidence, frustration and regret. These emotions can influence how investors perceive risk, how quickly they decide, and whether they maintain, increase, reduce, or abandon a position.

Research in neurofinance and behavioral decision-making has shown that affective anticipation can shape financial choices before a decision is even made. Kuhnen and Knutson (2005) show that anticipatory neural activity is associated with different types of financial choices and investment mistakes, suggesting that affective processes may guide risky financial behavior. In the same vein, stress has been shown to modify risk-taking in financial decision-making. Porcelli and Delgado (2009) find that short-term stress can intensify the reflection effect and alter the way individuals respond to gains and losses, indicating that stress may exacerbate behavioral biases.

Emotions may also influence professional trading behavior. Fenton-O'Creevy, Soane, Nicholson, and Willman (2011), in a qualitative study of traders in investment banks, show that emotions and their regulation play a central role in trading decisions. Their work shows that emotions may convey useful information, if individuals are able to regulate them and prevent them from excessively shaping judgment.

2.2. Behavioral Biases among Novice Investors

Novice investors may be particularly exposed to behavioral biases because they often combine limited financial knowledge and strong sensitivity to feedback. In such conditions, decisions may be driven less by reactions to short-term gains, losses or perceived opportunities. Investor psychology has therefore become central to understanding financial behavior, as psychological biases can influence trading volume, risk-taking, and portfolio decisions (Hirshleifer, 2001).

One important bias is overconfidence, which can lead investors to overestimate their ability to interpret information. Grinblatt and Keloharju (2009) show that psychological traits such as overconfidence and sensation seeking are associated with trading activity. Statman, Thorley, and Vorkink (2006) also link investor overconfidence to trading volume, arguing that investors who attribute prior gains to their own skill may increase subsequent trading. In simulation settings, a participant who observes early gains may interpret them as evidence of competence, thereby increasing exposure or trading more aggressively. This mechanism may be particularly likely among novice participants, since they have not yet experienced market failure and therefore have fewer experiential reference points for questioning the apparent validity of their initial successful decisions. Early gains may also be interpreted through a form of beginner's luck, which can reinforce overconfidence by leading participants to attribute favorable results to their own ability rather than to chance (Langer, 1975, Gervais & Odean, 2001).

Loss-related biases are also important. Odean (1998) provides evidence that investors are reluctant to realize losses and tend to realize gains more readily, a pattern consistent with the disposition effect. Prior outcomes may also shape subsequent risk-taking. Thaler and Johnson (1990) show that previous gains can increase willingness to take risks, a pattern known as the gain-induced risk taking. Prior outcomes may also shape subsequent risk-taking. Thaler and Johnson (1990) show that previous gains can increase willingness to take risks, a pattern that can be described as gain-induced risk taking, while previous losses may encourage individuals

to look for ways to recover the lost amount. This loss-recovery logic is related to escalation of commitment and to attempts to compensate for losses through further risk-taking.

These mechanisms are relevant for novice traders. A loss may be especially difficult to tolerate for participants who have not previously experienced market failure and who lack experiential reference points for interpreting portfolio declines. It may result in either avoidance and withdrawal or, conversely, a compensatory attempt to recover. A gain may lead either to satisfaction and caution or to increased confidence and higher exposure. The same market event can generate different behavioral trajectories depending on how it is emotionally interpreted and regulated.

2.3. Gender and Behavioral Finance

Gender differences have often been examined in relation to risk preferences, confidence, trading frequency, and competitiveness. A broad review by Croson and Gneezy (2009) identifies gender differences in economic experiments, particularly in risk and competitive preferences. This literature has often been used to interpret financial behavior through a simple distinction: men are generally described as more willing to take risks and more confident, while women are often described as more risk averse.

However, this distinction requires caution. First, Weber, Blais, and Betz (2002) show that risk attitudes vary across domains, including financial decisions, health, recreation, ethics, and social decisions. This means that gender differences in risk-taking should not be treated as general psychological traits that automatically apply in the same way across all contexts. In financial simulations, risk-taking may depend on the virtual nature of the capital, the time horizon, the ranking system and the emotional meaning attached to gains and losses.

Second, more recent experimental evidence suggests that gender differences in trading may be linked to confidence and portfolio choices, but this does not imply a simple or universal behavioral opposition. Cueva and Rustichini (2019) test gender differences in a simulated trading task and find that men are more confident, trade more, and hold larger and less diversified portfolios than women. While this supports the relevance of gender in trading behavior, it also invites a more detailed analysis of the mechanisms through which confidence, competition, and emotional feedback shape decisions.

Our study does not assume that men are simply risk-seeking and women risk-averse. Instead, it treats gender as a comparative dimension through which emotional regulation patterns can be explored. The relevant question is how they respond emotionally and behaviorally to the same simulation environment.

2.4. Emotional Regulation as an Intermediate Mechanism

A key limitation of a bias-based interpretation is that it may move too quickly from emotion to behavior. A participant who experiences stress does not necessarily become risk-seeking or risk-averse. A loss does not mechanically produce either withdrawal or loss-recovery trading. Between the emotional reaction and the financial decision lies a regulatory process: the participant may try to calm down, analyze the situation, wait, sell, buy, stop trading, or attempt to recover.

The importance of this intermediate process is supported by research showing that emotion regulation can change economic choices. Sokol-Hessner et al. (2009) show that when individuals are encouraged to adopt a broader, portfolio-like perspective rather than focusing on each loss, both behavioral loss aversion and physiological arousal to losses can be reduced. This finding shows that responses to losses can be modified by how individuals frame and

regulate their emotional reactions. In other words, loss aversion is connected to emotional arousal and its regulation.

This article builds on this insight by proposing emotional regulation as the analytical link between market situations, emotional reactions and behavioral finance mechanisms. The analysis focuses on how participants move from the emotional interpretation of a market situation to a regulatory response, and from this response to a trading decision that may reflect a behavioral bias or decision-making pattern.

For example, a decline in portfolio value may generate frustration. If frustration is regulated through reparative action, the participant may increase exposure or attempt to recover losses, producing patterns close to loss-recovery trading or escalation of commitment. If frustration is managed defensively, the participant may sell or preserve cash, producing patterns closer to loss aversion, regret aversion, or defensive withdrawal. Similarly, gains may produce confidence. If confidence is regulated poorly, it may lead to overexposure, but if it is contained, it may simply confirm a strategy without increasing risk.

This body of research shows convergences and limitations. First, studies converge in showing that emotion, stress, confidence, and affective reactions matter in financial decision-making. However, much of the literature tends to link emotional states to behavioral outcomes, without examining the regulatory process through which emotions are transformed into action or withdrawal. The same limitation appears in gender-based interpretations of financial behavior. Prior research often associates male investors with greater confidence, competitiveness, or trading activity, and female investors with greater caution or risk aversion. These gender-based interpretations should therefore be understood as context-dependent, since the way gender relates to financial behavior may vary according to task design, incentives, market conditions, and prior experience.

This limitation is especially important when studying gender differences among novice investors. Experimental studies often emphasize indicators such as trading frequency, exposure, or performance. They pay less attention to how male and female participants retrospectively interpret the emotional and regulatory processes underlying their decisions. This article addresses this limitation by examining emotional regulation as an intermediate mechanism between emotional experience and behavioral finance biases. It analyzes how similar emotional drivers may produce different gendered behavioral pathways, depending on whether participants regulate them through reparative action, protection, analysis, increased exposure, or withdrawal.

3. Methodology

3.1. Research Design

This study adopts a qualitative and exploratory research design aimed at understanding how novice investors regulate emotions during a stock market simulation and how these regulatory processes are translated into financial decisions. A qualitative approach is appropriate because the objective is to analyze how participants describe, interpret, and give meaning to their emotional experience. In this sense, the study focuses on participants' narratives as empirical material through which emotional reactions, decision-making processes, and behavioral finance mechanisms can be reconstructed.

The analysis follows comparative qualitative logic. The corpus was divided into two subgroups according to gender: interviews with male participants and interviews with female participants. This comparison was designed to identify exploratory patterns in the way emotions were regulated and converted into decisions. The methodological objective was therefore to move to cross-case analytical categories, while preserving the specificity of each interview.

3.2. Simulation Setting and Participants

The empirical setting of this study is a four-hour intraday stock market simulation conducted on December 4, 2025, with second-year Business Administration students at the University of Mons, Charleroi campus, in Belgium. The participants had completed an introductory finance course, but they had not yet taken the final examination at the time of the experiment. They had therefore been exposed to key financial concepts, while their practical experience with financial markets, their familiarity with stock market instruments, and their trading discipline remained limited. This novice profile is central to the interpretation of the study, which does not focus on experienced market participants but on individuals whose confidence, risk perception, and self-regulatory capacities are still developing. This classification as novice investors was supported by the descriptive characteristics of the interview sample, reported in Appendix G. Among the fifteen interviewed participants, fourteen declared that they had no prior experience in stock market. The only participant who reported prior experience indicated that this experience consisted of a stock market simulation organized as part of another finance course, rather than personal investment experience. These descriptive elements confirm that the interviews should be interpreted as narratives of individuals with very limited practical market experience. In our study, a novice investor was defined as a participant who had received introductory academic exposure to finance but had little or no prior practical experience with stock market.

This context is particularly suited to the research question because a short, feedback-rich trading simulation exposes novice participants to gains and losses, time pressure and ranking effects. These elements make it possible to observe how emotions emerge, are regulated and are translated into financial decisions. Risk perception may evolve as individuals reinterpret risk during the decision-making experience itself (Weber & Milliman, 1997). More broadly, this focus is consistent with research emphasizing the relevance of experimental and simulation-based designs for observing decision-making mechanisms in controlled environments, particularly when the population studied corresponds to the theoretical mechanism under investigation (Harrison & List, 2004; Fréchette & Schotter, 2015). This study also builds on a recent research program using stock market simulations to analyze novice investors' trading behavior, emotional reactions, and decision-making processes. Previous studies conducted in comparable experimental settings have examined how students engage with simulated market environments, how emotions and behavioral biases emerge during trading tasks, and how trading activity, market exposure, and performance are related in short-term simulations (Finet et al., 2021, Finet et al., 2025a; Finet et al., 2025b; Finet et al., 2026). This article extends this line of research by focusing on gendered emotional regulation patterns and on the way emotional-decision episodes are connected to behavioral finance mechanisms.

The simulation was designed to reproduce several features of a short-term trading environment while maintaining a controlled experimental setting. Stock market simulations combine realistic elements, such as transaction costs, gains and losses, and portfolio feedback, with a standardized environment in which participants face comparable decision conditions (Ackert et al., 2006; Huber & Kirchler, 2023). Each participant started with a virtual portfolio of 100,000 euros and could trade only securities included in the CAC 40 index. Short selling and limit orders were not permitted, to standardize the trading environment and keep the task accessible to novice participants. Trades were executed on the ABC Bourse platform in a dedicated simulation environment. Participants were free to decide how many transactions to carry out, when to buy or sell, and how much of their capital to invest. Transaction costs of 0.2% were applied to each trade, making intensive trading activity financially consequential. The instructions given to participants and the main features of the ABC Bourse platform are summarized in Appendix E.

Several elements were introduced to make decisions and feedback more immediate and visible. Participants could continuously monitor changes in the value of their portfolios, and a ranking was displayed during the simulation. This ranking introduced a social comparison dimension. In addition, a tournament-style incentive system was implemented: the participant with the highest-ranked portfolio received a two-point bonus on the final exam, the second-ranked participant received a 1.5-point bonus, and the third-ranked participant received a one-point bonus. All participants received 0.5 points for taking part in the simulation. These elements created a decision-making context combining uncertainty, time pressure, virtual financial gains and losses, transaction costs, and competitive feedback. From an experimental perspective, the validity of this type of design depends on the fit between the task, the population studied and the theoretical mechanisms being examined (Levitt & List, 2007; Fréchette & Schotter, 2015).

On the day of the experiment, the CAC 40 closed 0.42%, at 8,122 points. However, during the simulation, from 1:30 p.m. to 5:30 p.m., the index remained almost stable, moving from 8,120 points to 8,122 points. Most of the daily increase had occurred before the simulation began, while the afternoon session was characterized by a consolidation phase. When U.S. markets opened, the Dow Jones was also relatively stable, up approximately 0.03%, which mirrored the movement in the European market. This configuration limits the extent to which participants' outcomes can be attributed to a strong market trend. Differences in portfolio outcomes must be interpreted in relation to allocation choices, degree of market exposure, trading frequency, timing of transactions, and emotional engagement with the task.

The full experiment involved twenty-five students, including thirteen male and twelve female participants. The qualitative corpus analyzed in this article consists of fifteen semi-structured interviews conducted after the simulation with participants who voluntarily agreed to take part in the post-simulation interview phase. The number of interviews resulted from the students' decision to participate or not in this additional phase of the study. Six interviews were conducted with male participants and nine with female participants.

3.3. Semi-Structured Interviews

The interviews were conducted after the simulation to collect participants' narratives about their emotional experience and decision-making process. The semi-structured format ensured that common topics were addressed across interviews, while leaving participants free to describe their experience. The interviews explored several dimensions: initial expectations before the simulation, emotions experienced during gains and losses, reactions to portfolio fluctuations, perceived influence of emotions on decisions, responses to the ranking system, and strategies used to manage stress, frustration, confidence, or disappointment. The interview guide used to structure the semi-structured interviews is provided in Appendix D. Descriptive statistics for the fifteen interviews, including duration, number of words, and number of pages, are reported in Appendix F.

Semi-structured interviews allow the researcher to access subjective meanings, while keeping enough consistency across cases to permit comparison (Kvale & Brinkmann, 2009). In our study, the interviews were treated as interpretive narratives through which participants explained how they experienced the simulation.

3.4. Unit of Analysis: Emotional-Decision Episodes

The unit of coding was defined as an emotional-decision episode. An episode was retained when a passage included four elements: a market situation, an emotion experienced, a decision-making reaction, and a behavioral finance mechanism associated with that reaction. This unit of analysis made it possible to avoid coding emotions in isolation. Instead, emotions were analyzed in relation to the decisions or regulatory strategies they appeared to trigger.

For example, a decline in portfolio value could generate frustration. This frustration could then be regulated through reparative action, such as buying again or increasing exposure to recover losses. Such an episode was interpreted as consistent with loss-recovery trading or escalation of commitment. Conversely, a similar loss could lead another participant to sell, stop trading, or preserve cash, which was interpreted as a protective form of emotional regulation associated with loss or regret aversion.

3.5. Coding Procedure

The coding procedure combined inductive and deductive logic. This combination is appropriate when a study aims both to remain grounded in participants' narratives and to interpret the material through pre-existing theoretical concepts (Fereday & Muir-Cochrane, 2006).

First, a reading of each interview was conducted to identify the emotions mentioned by participants, the situations that drove these emotions, and the reported decision-making reactions. At this stage, the coding remained close to the verbatim and included descriptive codes. Second, these codes were grouped into broader emotional and regulatory categories. The emotional categories included stress, fear, confidence, excitement, frustration, disappointment, regret, satisfaction, and disgust. The regulatory categories included reparative action, security-seeking, waiting, analysis, withdrawal, intensification of trading activity and attentional control. Third, the emotional-decision episodes were interpreted from behavioral finance. The aim was to identify when participants' narratives were consistent with mechanisms such as loss aversion, overconfidence, disposition effect, loss-recovery trading, escalation of commitment, gain-induced risk taking, regret aversion, social comparison or tournament effects. Fourth, a cross-case comparison was conducted by gender. The objective was to identify recurring emotional regulation patterns within each subgroup and then compare the two groups across four analytical axes: reaction to losses, effect of gains, decision-related stress and response to ranking. This cross-case logic is consistent with qualitative data analysis procedures that move to between-case comparison (Miles, Huberman, & Saldaña, 2014).

3.6. From Coding to the Four Comparative Axes

For each participant, a coding sheet was built around the following dimensions: gender, initial relationship to stock market investing, main positive emotion, main negative emotion, triggering situation, reaction to loss, reaction to gain, emotional regulation mode, associated behavioral mechanisms, and interpretive profile.

This procedure made it possible to construct a traceability table linking empirical indicators to analytical categories. This procedure was used to strengthen analytical transparency and to show how the four comparative axes emerged from the interviews. It also helped avoid reducing the analysis to a simple opposition between risk-seeking men and cautious women. Instead, the comparison focused on the way similar emotions could lead to different decision-making patterns.

The operational implementation of the methodological procedure is presented in Appendix A. An example of the coding procedure for one interview is provided in Appendix B. The full traceability table for the fifteen interviews is provided in Appendix C.

3.7. Analytical Caution and Trustworthiness

Empirical adequacy was assessed through the progressive stabilization of the coding process. During the cross-case analysis, the first interviews allowed the identification of the main emotional-decision patterns, including loss recovery, protective regulation, confidence-driven exposure, withdrawal, analysis, and ranking-related comparison. As additional interviews were coded, these categories were refined but no substantially new comparative axis emerged. The

last interviews mainly provided additional illustrations, nuances, and counterexamples within already identified categories. For this reason, the corpus was considered sufficient for the exploratory purpose of the study. The objective was to ensure sufficient empirical variation to compare recurrent emotional regulation patterns across male and female novice investors. The four comparative axes resulted from a coding process that became progressively stable across the fifteen interviews.

Given the small size of the corpus and the qualitative nature of the research design, the findings should be interpreted as exploratory. The study identifies patterns in the way participants in this specific corpus regulated emotions during a simulated trading experience. Several precautions were taken to enhance the trustworthiness of the analysis. First, the coding remained close to the participants' own words during the initial stage, in line with qualitative coding procedures that emphasize the importance of preserving empirical grounding (Saldaña, 2021). Second, the interpretation of behavioral biases was treated as analytical inference rather than direct measurement. Third, counterexamples were retained in the analysis. Some female participants displayed highly active and risk-taking behavior, while some male participants described caution, waiting, or attentional control. Finally, the inclusion of an interview-level coding example and a full traceability table provides an audit trail that supports the transparency of the analytical process (Nowell et al., 2017).

4. Results

The analysis of the semi-structured interviews indicates that the main differences between male and female participants do not primarily concern the emotions reported. Stress, frustration, disappointment, confidence, satisfaction, and fear appear in both groups. The most meaningful differences concern the way these emotions are regulated and translated into financial decisions. Four comparative axes emerged from the coding process: reaction to losses, effect of gains, decision-related stress and response to ranking.

4.1. Reaction to Losses: Recovering or Protecting

The strongest axis concerns the reaction to losses. Among several male participants, losses tended to result in a reparative and action-oriented response. A decline in portfolio value was experienced as a situation to be corrected. The emotional response was frequently converted into renewed trading activity, increased exposure, or attempts to recover losses.

P1 provides the clearest example of this pattern. When his portfolio value decreased, he described feeling “disgusted” and immediately linked this feeling to a desire to recover: “I do not really accept loss; I always look for a way to recover.” He also explicitly associated frustration with revenge-like behavior, explaining that after a loss he wanted to “get revenge” and “come back to zero.” This emotional sequence was translated into a concrete trading decision: after losing money on one position, he invested a larger amount in another one to recover, moving from 10,000 euros to 25,000 euros and stating that he had “lost the notion of money.”

This pattern suggests a form of emotional regulation through reparative action. The loss becomes a driver for renewed engagement. In behavioral finance terms, this is consistent with mechanisms such as loss-recovery trading, escalation of commitment, and the desire to break even. The participant converts the emotional discomfort of loss into an attempt to repair the situation through further risk-taking.

A similar logic appears in the interview with P2. After recognizing that the final hour was unlikely to reverse the outcome, he nevertheless continued to act : he sold, bought again, and tried “to do something” rather than remain passive. Stress was associated with the feeling that “something had to change,” which suggests that negative emotion was regulated through action.

By contrast, several female participants often described losses as signals requiring protection, limitation, or withdrawal. P10 illustrates this protective pattern. She deliberately left 80,000 euros of her virtual portfolio untouched, explaining that this amount was “safe” and that even in the worst case she would still preserve a substantial part of the portfolio. Her reaction to losses was therefore to limit the damage and preserve capital.

P14 provides another example of defensive regulation. After testing several investments and observing that each action made her portfolio decrease, she decided to stop investing after one hour. She explained that if the portfolio kept decreasing, she could “end up with 0 euros,” and therefore preferred to stop rather than continue to lose. The emotional response to loss was translated into withdrawal.

P8 also described a movement from stress to withdrawal. As her portfolio declined, she reported sadness, loss of confidence, and disgust. She explained that when she saw herself starting to lose money, she stopped investing. In this case, loss led to defensive disengagement.

This first axis differentiates two dominant emotional-decision pathways. Among several male participants, loss tends to activate a reparative logic: recover, correct, increase engagement, or try again. Among several female participants, loss more often activates a protective logic: secure, slow down, sell, preserve cash, or stop trading. These tendencies provide the strongest pattern in the corpus.

4.2. Effect of Gains: Increased Exposure or Controlled Satisfaction

The second axis concerns the effect of gains. Gains produced satisfaction and confidence in both groups, but their decision-making consequences differed.

Among several male participants, gains tended to reinforce confidence and increase exposure. P1 described the experience of a rising portfolio as highly stimulating. When his portfolio increased, he felt happy, as if the rise “would never stop.” He watched price changes “cent by cent” and waited for the next increase. This emotional reaction encouraged further investment: he eventually invested almost the entire 100,000 euros, leaving only 21 euros uninvested, because he “liked it” and wanted to invest more.

This pattern is consistent with overconfidence and gain-induced risk taking. Positive feedback reinforced the participant’s belief that further gains were possible, leading him to increase exposure. In this case, the gain transformed the emotional state into a more aggressive trading posture.

P2 also illustrates this mechanism. He initially invested all his capital because he wanted to “stand out.” When he was in a profitable position, he became more confident and later regretted not having sold earlier. His account suggests that gains can create a delay in profit-taking because the participant expects the positive trend to continue.

Among female participants, gains also generated satisfaction, confidence, and pride, but they did not always lead to increased exposure. P6 reported being happy and proud when her portfolio increased but explicitly stated that this did not make her want to trade more. On the contrary, when values increased, she remained “more in security” and focused on the positions she already held rather than buying more.

P13 presents a similar controlled pattern. Rather than relying on the name of companies or on excitement, she described a process based on checking recent price patterns and looking for stability. She stated that she trusted the numbers more than the name of the company and that remaining calm was important because acting on feelings could be harmful.

However, the female group also includes counterexamples. P7 described herself as active and risk-taking during the simulation. When the situation seemed to improve in the middle of the session, she decided to buy more stocks, invested almost all her available cash, and described herself as more “playful” and more willing to take risks. Her trajectory is close to the male pattern of confidence-driven increased exposure.

P8 also stated that when she felt confident, she tended to take more risks and later acknowledged that happiness could lead her to invest “a bit everywhere” and make poor choices.

The second axis is therefore more nuanced than the first. Gains often increased exposure among several male participants, while several female participants transformed gains into controlled satisfaction.

4.3. Decision-Related Stress: Corrective Action or Return to Control

The third axis concerns the role of stress in decision-making. Stress was present in both groups, but its regulation differed.

Among several male participants, stress was converted into corrective action. P1 stated that waiting and watching the stock price move was what generated the most tension. When frustrated or stressed, his internal logic became: “I have to recover.” He also acknowledged that many of his post-3 p.m. decisions were driven by the desire to recover, rather than by rational analysis.

P2 described stress as a state that could make him think that he had to “change something.” During the last hour, even when he felt the outcome was almost decided, he continued trading, selling and buying again. Stress therefore did lead to corrective activity.

Among several female participants, stress often led to analysis, caution, reduced activity, or withdrawal. P13 explained that she remained calm and carefully analyzed the stocks because following emotions could be harmful. She described a process of looking at the last five days of price evolution, identifying stable patterns, and relying on numbers rather than company familiarity.

P14’s response to stress and loss was withdrawal. Once she observed negative consequences of her actions, she stopped trading. The stable portfolio then became reassuring, and being well ranked reinforced this feeling of control.

P15 represents another form of self-regulation through learning and strategy adjustment. After an initial phase of excitement and diversification, she reduced the number of companies in which she invested because she understood that a decline in one company could generate excessive losses. Her stress and frustration therefore led to concentration on fewer, more reliable positions.

Nevertheless, this axis also contains exceptions. P6 reported that stress could lead her to buy more. Although her initial strategy was not to carry out many transactions, she explained that when she felt stressed, she wanted to buy stocks and sometimes acted “on impulse,” which she later regretted.

Thus, stress does not mechanically produce either risk-taking or prudence. The key mechanism is regulation. For several male participants, stress was regulated through corrective action. For several female participants, stress was regulated through analysis, withdrawal, or security-seeking, although some female cases show emotion-driven trading.

4.4. Response to Ranking: Competitive Activation or Variable Comparison

The fourth axis concerns the role of ranking and social comparison. The ranking system made performance visible and introduced a tournament-like dimension into the simulation. Its emotional and behavioral effects varied across participants.

Among several male participants, ranking tended to activate competition. P2 stated that he wanted to “stand out” and invested all his capital. His decision to take a large initial position was linked to the desire to differentiate himself from other participants.

P9 also described the ranking as a source of confidence and motivation. When he saw that other participants were far below him in portfolio value, he became very confident. He also explained that comparison through ranking motivated him to continue understanding the stock market and to continue engaging with the simulation.

In these cases, the ranking activated a competitive and motivational process. In behavioral finance terms, this is consistent with social comparison and tournament effects.

Among female participants, the effect of ranking was more variable. Some participants were sensitive to it, but others explicitly placed it in the background. P6 stated that she did not compare herself to others and that her main source of stress was uncertainty about whether the value of her assets would rise or fall. For her, the ranking did not increase fear or stress.

P15 provides a more ambivalent case. The ranking helped her anticipate the final outcome and imagine that she might finish among the top three, but she also minimized its meaning by stating that the ranking did not reflect a real competence in investing.

P14, by contrast, experienced the ranking as reassuring because she was positioned relatively high. However, this did not lead her to intensify trading; rather, it confirmed her withdrawal strategy after she had stopped investing.

The ranking appears more directly activating among several male participants, where it contributes to competition, confidence, or the desire to differentiate oneself. Among female participants, it may reassure, motivate, or matter for the final outcome, but it is often secondary to uncertainty, loss avoidance, or the preservation of capital.

4.5. Summary of Findings

Table 1 summarizes the main qualitative patterns identified across the fifteen interviews. The counts refer to coded cases rather than lexical occurrences. A participant may therefore appear in more than one category when the interview contains several emotional-decision mechanisms.

Table 1. Summary of Coded Emotional Regulation Patterns by Gender

Comparative axis	Coded category	Male participants, n = 6	Female participants, n = 9	Main interpretation
Reaction to losses	Reparative action, trying to recover	4	2	More frequent among male participants
	Protective regulation, securing, withdrawal	2	7	More frequent among female participants
Effect of gains	Confidence leading to	3	2	More frequent among male participants, with

	increased exposure			female counterexamples
	Satisfaction with maintained control	1	5	More frequent among female participants
Decision-related stress	Stress leading to corrective action	4	2	More frequent among male participants
	Stress leading to analysis, prudence, or withdrawal	2	7	More frequent among female participants
Response to ranking	Ranking as competitive activation	3	3	Present in both groups, but more structurally salient among some male participants
	Ranking as secondary or weakly activating	3	6	More frequent among female participants

5. Discussion

The findings refine the way gender differences in novice financial decision-making can be interpreted. They do not support a binary distinction according to which men are necessarily risk-seeking and women necessarily cautious. Such reading would be too restrictive and would fail to account for the diversity of emotional and behavioral pathways observed in the interviews. The results suggest that gender differences appear more clearly at the level of emotional regulation: losses, gains, decision-related stress, and ranking information are managed and converted into decisions through distinct regulatory patterns.

This interpretation is consistent with broader work in decision research showing that emotions influence choices in structured and predictable ways, while also depending on context, appraisal, and regulation (Lerner et al., 2015). Similarly, the affect heuristic literature emphasizes that affective evaluations can guide perceptions of risk and benefit, especially when individuals face uncertainty and limited information (Slovic et al., 2007). The interviews add a further layer: the same emotional driver may produce different behaviors depending on whether the participant tries to repair, control or contain the emotional state.

This point is important for interpreting loss-related behavior. In the corpus, loss does not have a single behavioral meaning. For some participants, it becomes a challenge to be corrected while for others, it becomes a warning requiring protection. This distinction helps clarify why loss aversion, loss-recovery trading, escalation of commitment, and withdrawal can coexist within the same simulation environment. Rather than treating these mechanisms as separate biases, the findings suggest that they can be interpreted as different regulatory responses to the emotional discomfort generated by loss. The contribution of the article is to show that emotional regulation may shape which behavioral mechanism becomes activated in a given situation.

The findings also nuance the interpretation of gender in behavioral finance. Prior experimental work has frequently associated gender differences with risk attitudes, overconfidence, and competitiveness. This interpretation also extends previous work on gender and trading strategies. Finet, Laznicka, and Palumbo (2024) show that gender may matter in the emergence of biases in trading strategies, but not in a mechanical or uniform way. Our study complements this perspective by showing that gender differences not only concern the presence of biases in trading strategies, but also the emotional regulation pathways through which these biases may emerge. In other words, gender does not simply affect trading behavior directly; it may also shape how emotions are transformed into action, restraint, or withdrawal during the simulation. Eckel and Grossman (2008), for example, review experimental evidence suggesting that women are often more risk averse than men, although they also emphasize that results may vary depending on framing and context. Niederle and Vesterlund (2007) show that men are more likely than women to select into competitive environments, even when performance is comparable. These findings are relevant to the present study, because the simulation included a visible ranking and a tournament-style incentive system. However, the interviews suggest that competition and risk are not sufficient to explain the observed behaviors. What matters is how participants emotionally regulate the environment.

The role of ranking illustrates this point. For some participants, ranking activated comparison, confidence, or a desire to stand out. For others, it remained secondary to uncertainty, capital preservation, or the interpretation of losses. This suggests that tournament incentives may intensify engagement for some participants, but they may also be neutralized or reinterpreted by others. The implication is that gender differences in competitive financial settings should not be reduced to a general preference for or avoidance of competition. They should also be analyzed through the emotional meaning participants attach to relative performance and through the way they regulate the pressure created by comparison.

The counterexamples are analytically important. P7's highly active and transactional behavior, and P6's tendency to make impulsive purchases under stress, show that some female participants regulate emotion through action rather than through protection. Conversely, P9's attentional control and P3's or P5's initial caution and mistrust show that some male participants regulate emotion through analysis or restraint rather than through risk escalation. These cases show that gender is a comparative lens through which recurring regulatory tendencies can be observed.

This point is aligned with work suggesting that risk-taking and decision-making are context-dependent rather than stable across all domains. Byrnes, Miller, and Schafer (1999), in a meta-analysis of gender differences in risk-taking, show that gender effects vary considerably according to the type of task and context. Our study extends this idea to emotional regulation in financial simulation: what differentiates participants is not only the level of risk they accept, but the pathway through which emotion becomes action, restraint, or withdrawal.

Because the study is based on post-simulation interviews, it captures how participants retrospectively make sense of their emotional and decision-making experience. These narratives do not provide direct access to emotions as they occurred in real time, but they reveal how participants interpret the relationship between emotion and decision after the event. This is relevant because behavioral finance often focuses on observable choices, while paying less attention to how novice investors explain their decision processes. Qualitative material shows that novices can identify emotional triggers, but they do not always recognize the regulatory pathway through which those emotions influence their behavior.

Overall, the findings support the idea that emotional regulation is a useful intermediate mechanism between affective experience and behavioral finance biases. The same simulation

generated similar emotional triggers for many participants, but these triggers were not translated into decisions in the same way. Gender appears as a dimension along which different emotional-decision pathways may become frequent in a specific context.

6. Conclusion

This article examined whether the differences observed between men and women in a short stock market simulation primarily concern the emotions experienced, or rather the way these emotions are regulated and transformed into financial decisions. The findings support the second interpretation. The interviews show that frustration, confidence, disappointment, satisfaction, and fear are present across both male and female participants. The key difference lies in the emotional-decision pathways through which they are managed and converted into trading behavior.

In the corpus studied, several male participants tended to regulate loss, frustration, or competitive pressure through reparative action: trying to recover losses, changing strategy, increasing exposure, or continuing to trade to regain control. Several female participants, by contrast, often regulated negative emotions through protection, prudence, analysis, reduced exposure, or withdrawal. These patterns reveal recurring tendencies in the way emotions were handled during the simulation.

The methodological contribution of the article lies in the coding procedure adopted. Rather than coding emotions as isolated states, the analysis focused on emotional-decision episodes. Each relevant episode was examined through a sequence linking a market situation, an emotion, emotional regulation, a decision, and a behavioral finance mechanism. This procedure made it possible to connect participants' narratives to loss aversion, overconfidence, loss-recovery trading, escalation of commitment, the disposition effect, gain-induced risk taking, social comparison, and tournament effects. The analysis thus moved from verbatim material to emotional categories, then to regulatory patterns and behavioral interpretations.

The originality of the approach lies in placing emotional regulation at the center of the analysis. In behavioral finance, emotions are often treated either as sources of bias or as factors influencing risk-taking. This article proposes an intermediate reading: emotions do not mechanically produce decisions. They are first interpreted, contained, amplified, displaced, or acted upon. A loss can lead to loss-recovery behavior when it is regulated through reparative action, but it can also lead to withdrawal or capital preservation when it is regulated through protection. Similarly, a gain can produce overexposure when confidence is amplified, but it can also confirm a controlled strategy when confidence is regulated.

By focusing on emotional regulation, the article nuances conventional gender-based interpretations in behavioral finance. The results do not support a simple opposition between risk-seeking men and cautious women. They show that gender differences emerge in the way participants manage emotional pressure, gains, losses and ranking information. This perspective makes it possible to understand gendered behavioral biases as situated emotional-decision pathways produced within a specific context.

The central contribution of the study is therefore to show that, among novice investors, behavioral biases can be better understood when emotional regulation is treated as a mediating mechanism between emotional experience and financial decision-making.

7. Limitations and Future Research

This study has several limitations that must be acknowledged. First, the analysis is based on a qualitative corpus of fifteen semi-structured interviews. The objective was not to produce statistically generalizable results, but to identify exploratory patterns in the way novice

investors regulate emotions during a simulated trading experience. The findings should be interpreted as qualitative tendencies observed within this specific corpus rather than as general conclusions about gender differences in financial decision-making.

Second, the gender comparison is based on an unequal number of interviews, with six male participants and nine female participants. This distribution allowed for a qualitative comparison and the results should be understood as an interpretive comparison of emotional regulation patterns rather than as evidence of stable or universal gender effects.

Third, the study focuses on novice investors. The findings cannot be extended to experienced investors, or individuals investing their own money. Novice investors may be particularly sensitive to uncertainty, rankings and task novelty, which may shape their emotional regulation in ways that differ from experienced market participants.

Fourth, the simulation used virtual money. Although the tournament-style incentive system and the exam bonus increased engagement, the emotional consequences of gains and losses may differ from real investment contexts. Several participants explicitly referred to the virtual nature of the money, which may have reduced the emotional intensity of losses for some, while allowing others to take more risks than they would have taken with real money.

Fifth, the interviews are based on retrospective narratives. Participants may reconstruct their decisions after the event, rationalize certain choices or reinterpret emotions considering their final ranking. The findings should not be understood as direct measurements of emotion during trading.

Sixth, the coding procedure involved an interpretive step linking reported emotional-decision episodes to behavioral finance mechanisms. Although the analysis remained grounded in participants' own narratives and was made transparent through the coding example and traceability table, the identification of mechanisms such as loss-recovery trading, escalation of commitment, overconfidence, or regret aversion remains an analytical interpretation.

Future research could build on these findings in several directions. A first extension would be to replicate the study with a larger sample, allowing qualitative insights to be combined with quantitative measures of trading behavior. This would make it possible to examine whether the emotional regulation patterns identified are associated with observable variables such as number of transactions, portfolio exposure, cash holdings, transaction size, volatility of the portfolio, or final performance.

A second direction would be to combine post-simulation interviews with real-time measures of emotion. For example, future studies could use experience sampling during the simulation, short emotional self-reports at several moments of the trading session, physiological measures, or screen-based behavioral traces. Such designs would help compare emotions as experienced in real time with emotions as reconstructed in retrospective narratives.

A third avenue would be to examine whether emotional regulation patterns change with experience. Comparing novice participants with more experienced investors could clarify whether reparative action, withdrawal, overconfidence after gains, or defensive regulation after losses are reduced, reinforced, or transformed through market learning. Longitudinal designs could also explore how repeated exposure to trading simulations modifies emotional regulation and behavioral biases over time.

Finally, future research could deepen the analysis of individual heterogeneity within gender groups. The study showed that gender tendencies are crossed by counterexamples. Some female participants adopted highly active and risk-taking behaviors, while some male participants relied on caution or restraint. Further studies could integrate personality traits, prior financial

knowledge, risk perception, competitiveness, and confidence measures to better understand why some participants regulate emotions through action while others regulate them through protection or withdrawal.

8. References

- Ackert, L. F., Church, B. K., Tompkins, J., & Zhang, P. (2006). What's in a name? An experimental examination of investment behavior. *Review of Finance*, 9(2), 281–304.
- Barber, B. M., & Odean, T. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. *The Quarterly Journal of Economics*, 116(1), 261–292.
- Byrnes, J. P., Miller, D. C., & Schafer, W. D. (1999). Gender differences in risk taking: A meta-analysis. *Psychological Bulletin*, 125(3), 367–383.
- Croson, R., & Gneezy, U. (2009). Gender differences in preferences. *Journal of Economic Literature*, 47(2), 448–474.
- Cueva, C., & Rustichini, A. (2019). Boys will still be boys: Gender differences in trading activity are not due to differences in risk attitudes. *Journal of Economic Behavior & Organization*, 160, 100–120.
- Eckel, C. C., & Grossman, P. J. (2008). Men, women and risk aversion: Experimental evidence. In C. R. Plott & V. L. Smith (Eds.), *Handbook of experimental economics results* (Vol. 1, pp. 1061–1073). Elsevier.
- Fenton-O'Creevy, M., Soane, E., Nicholson, N., & Willman, P. (2011). Thinking, feeling and deciding: The influence of emotions on the decision making and performance of traders. *Journal of Organizational Behavior*, 32(8), 1044–1061.
- Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, 5(1), 80–92.
- Finet, A., Kristoforidis, K., & Laznicka, J. (2025a). Investor emotions and cognitive biases in a bearish market simulation: A qualitative study. *Journal of Risk and Financial Management*, 18(9), 493. <https://doi.org/10.3390/jrfm18090493>
- Finet, A., Kristoforidis, K., & Laznicka, J. (2025b). Negative emotions and decision-making paralysis among individual investors: A qualitative approach. *Risks*, 13(11), 209. <https://doi.org/10.3390/risks13110209>
- Finet, A., Kristoforidis, K., & Laznicka, J. (2026). Behavioral insights from a three-day trading simulation: Emotions, financial strategy adaptation, and competition. *American Journal of Qualitative Research*, 10(3), 54–74. <https://doi.org/10.66815/ajqr/18483>
- Finet, A., Kristoforidis, K., & Viseur, R. (2021). L'émergence de biais comportementaux en situation de trading : une étude exploratoire. *Recherches en Sciences de Gestion*, 146, 147–182.
- Finet, A., Laznicka, J., & Palumbo, H. (2024). From which planet do they come from? Biases in trading strategies: Does the gender matter? *The International Journal of Business & Management*, 12(12), 1–11.
- Fréchette, G. R., & Schotter, A. (Eds.). (2015). *Handbook of experimental economic methodology*. Oxford University Press.
- Gervais, S., & Odean, T. (2001). Learning to be overconfident. *The Review of Financial Studies*, 14(1), 1–27. <https://doi.org/10.1093/rfs/14.1.1>
- Grinblatt, M., & Keloharju, M. (2009). Sensation seeking, overconfidence, and trading activity. *Journal of Finance*, 64(2), 549–578.
- Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2(3), 271–299.

- Harrison, G. W., & List, J. A. (2004). Field experiments. *Journal of Economic Literature*, 42(4), 1009–1055.
- Hirshleifer, D. (2001). Investor psychology and asset pricing. *Journal of Finance*, 56(4), 1533–1597.
- Huber, J., & Kirchler, M. (2023). Experiments in finance. In A. Schram & A. Ule (Eds.), *Handbook of research methods and applications in experimental economics*. Edward Elgar.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263–291.
- Kuhnen, C. M., & Knutson, B. (2005). The neural basis of financial risk taking. *Neuron*, 47(5), 763–770.
- Kvale, S., & Brinkmann, S. (2009). *InterViews: Learning the craft of qualitative research interviewing* (2nd ed.). Sage.
- Langer, E. J. (1975). The illusion of control. *Journal of Personality and Social Psychology*, 32(2), 311–328. <https://doi.org/10.1037/0022-3514.32.2.311>
- Lerner, J. S., Li, Y., Valdesolo, P., & Kassam, K. S. (2015). Emotion and decision making. *Annual Review of Psychology*, 66, 799–823.
- Levitt, S. D., & List, J. A. (2007). What do laboratory experiments measuring social preferences reveal about the real world? *Journal of Economic Perspectives*, 21(2), 153–174.
- Lo, A. W., Repin, D. V., & Steenbarger, B. N. (2005). Fear and greed in financial markets: A clinical study of day-traders. *American Economic Review*, 95(2), 352–359.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Sage.
- Niederle, M., & Vesterlund, L. (2007). Do women shy away from competition? Do men compete too much? *The Quarterly Journal of Economics*, 122(3), 1067–1101.
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, 16(1), 1–13.
- Odean, T. (1998). Are investors reluctant to realize their losses? *Journal of Finance*, 53(5), 1775–1798.
- Porcelli, A. J., & Delgado, M. R. (2009). Acute stress modulates risk taking in financial decision making. *Psychological Science*, 20(3), 278–283.
- Saldaña, J. (2021). *The coding manual for qualitative researchers* (4th ed.). Sage.
- Shefrin, H., & Statman, M. (1985). The disposition to sell winners too early and ride losers too long: Theory and evidence. *Journal of Finance*, 40(3), 777–790.
- Slovic, P., Finucane, M. L., Peters, E., & MacGregor, D. G. (2007). The affect heuristic. *European Journal of Operational Research*, 177(3), 1333–1352.
- Sokol-Hessner, P., Hsu, M., Curley, N. G., Delgado, M. R., Camerer, C. F., & Phelps, E. A. (2009). Thinking like a trader selectively reduces individuals' loss aversion. *Proceedings of the National Academy of Sciences*, 106(13), 5035–5040.
- Statman, M., Thorley, S., & Vorkink, K. (2006). Investor overconfidence and trading volume. *Review of Financial Studies*, 19(4), 1531–1565.
- Thaler, R. H., & Johnson, E. J. (1990). Gambling with the house money and trying to break even: The effects of prior outcomes on risky choice. *Management Science*, 36(6), 643–660.
- Weber, E. U., & Milliman, R. A. (1997). Perceived risk attitudes: Relating risk perception to risky choice. *Management Science*, 43(2), 123–144.

- Weber, E. U., Blais, A.-R., & Betz, N. E. (2002). A domain-specific risk-attitude scale: Measuring risk perceptions and risk behaviors. *Journal of Behavioral Decision Making*, 15(4), 263–290.

9. Appendices

Appendix A. Operational Implementation of the Comparative Thematic Analysis

The analysis was based on a cross-sectional thematic approach applied to the fifteen semi-structured interviews. The corpus was divided into two subgroups according to gender. The objective was to identify the emotions mentioned by participants and to examine how these emotions were transformed into decision-making responses.

The analytical procedure followed four steps.

1. Cross-Case Reading by Gender

The first step consisted of a cross-case reading of the interviews, distinguishing between male and female participants. The analysis did not focus solely on the emotions reported by the participants. Instead, it examined what these emotions produced in the decision-making process.

The analysis focused on the following sequence:

experienced emotion, decision-making reaction and behavioral bias or decision-making mechanism

For example, a loss could be associated with frustration, which could lead to a desire to recover the lost amount and to a loss-recovery behavior, escalation of commitment, or further risk-taking. Conversely, a loss could generate fear of losing more, leading to stopping, selling, or adopting a more cautious stance, which may be interpreted in relation to loss aversion or regret aversion.

2. Thematic Coding of Emotional Reactions

The second step consisted of grouping the verbatim material into broad categories of emotional regulation. These categories were developed from the interviews while being interpreted in relation to behavioral finance concepts.

Emotional Regulation Code	Meaning
Loss recovery	Trying to recover after a loss
Securing	Preserving capital and avoiding further losses
Intensification	Investing more under the effect of confidence or frustration
Withdrawal	Stopping, slowing down, or becoming passive
Analysis	Returning to figures, waiting, checking, or verifying
Competition	Reacting to ranking or comparison with others

The coding was therefore inductive and deductive. It was inductive because the categories emerged from the participants' words and recurring expressions, such as "to recover," "to get

back,” “to secure,” “I stopped,” “I analyzed,” or “I stayed in security.” It was deductive because these reported behaviors were related to concepts from behavioral finance, including loss aversion, overconfidence, loss-recovery behavior, escalation of commitment, gain-induced risk taking and social comparison.

3. Gender Comparison Based on Decision-Making Responses

The comparison between male and female participants was not based on the question of whether one group experienced more stress, fear, or frustration than the other. Such a question would have been of limited analytical value, since both groups reported emotional reactions during the simulation.

The analysis instead focused on the following question:

What do participants do with stress, loss, gain, or ranking information?

This shift made it possible to identify four comparative axes:

Comparative axis	Question addressed to the interviews
Reaction to losses	Does loss lead participants to recover or to protect themselves?
Effect of gains	Does gain increase exposure or mainly reinforce satisfaction?
Decision-related stress	Does stress lead participants to act, analyze, or withdraw?
Response to ranking	Does comparison activate competition or remain secondary?

These axes structured the comparison between the two subgroups and provided the framework for the presentation of the results.

4. From Coding to the Four Comparative Axes

The final step consisted of constructing a comparative synthesis table organized around the four analytical axes. This table linked, for each axis, the main analytical question, the dominant regulatory pattern observed among several male participants, and the dominant regulatory pattern observed among several female participants. Its purpose was to make explicit how the comparison moved from coded emotional-decision episodes to the four axes structuring the results.

Comparative axis	Analytical question	Male-oriented pattern observed in several interviews	Female-oriented pattern observed in several interviews
Reaction to losses	Does loss lead participants to recover or to protect themselves?	Loss tends to trigger reparative action: recovering, buying again, increasing exposure, or changing strategy.	Loss tends to trigger defensive regulation: selling, slowing down, securing capital, or stopping trading.
Effect of gains	Does gain increase exposure or mainly reinforce satisfaction?	Gains tend to reinforce confidence and may lead to increased exposure or delayed selling.	Gains tend to produce satisfaction while maintaining control or limited exposure.

Decision-related stress	Does stress lead participants to act, analyze, or withdraw?	Stress tends to be converted into corrective action: selling, buying again, changing strategy, or attempting to recover.	Stress tends to lead to analysis, caution, reduced activity, or withdrawal.
Response to ranking	Does comparison activate competition or remain secondary?	Ranking tends to activate competition, comparison, motivation, or the desire to stand out.	Ranking has a more variable effect and often remains secondary to uncertainty, loss avoidance, or capital preservation.

Appendix B. Example of Coding for One Participant: P1

This appendix provides an example of how the coding procedure was applied to one interview. The interview with P1 was selected because it illustrates emotional regulation after loss and the transformation of frustration into reparative action.

1. Definition of the Coding Unit

The coding unit is an emotional-decision episode. An episode is identified when a passage includes a market situation, an emotion expressed by the participant, a decision-making reaction, an a behavioral mechanism associated.

In this interview, the following sequence appears clearly:

decline in portfolio value, frustration, desire to recover, loss-recovery behavior and escalation of commitment

This sequence is visible when the participant explains that, after a loss, he tries to “recover” and increases the amount invested.

2. First Level: Descriptive Coding

The first level of coding remains close to the participant’s own words. Its purpose is to identify what is explicitly expressed in the interview, without immediately assigning behavioral finance concepts to the material.

Verbatim	Descriptive code
“I was excited”	Initial excitement
“frustration”	Dominant frustration
“I wanted it to rise more”	Expectation of further gain
“I was looking for a way to recover”	Desire to recover
“I had lost the notion of money”	Loss of monetary reference point
“I went to get some air”	Pause

At this stage, the coding remains descriptive. The focus is on the participant's experience and reported conduct rather than on the identification of behavioral biases.

3. Second Level: Emotional Coding

The second level groups the descriptive codes into broader emotional categories. In this interview, the emotional trajectory can be summarized as follows:

Moment of the simulation	Dominant emotion	Intensity
Beginning	Excitement	Positive emotion of engagement
Portfolio increase	Happiness, confidence	Reinforcement of exposure
Portfolio decrease	Frustration, disgust	Active negative emotion
After 3 p.m.	Frustration, desire to recover	Shift toward loss recovery
End of the simulation	Disappointment, disgust	Negative evaluation of performance

This level shows that the emotional trajectory is not stable throughout the simulation. It moves from excitement and confidence to frustration, loss-recovery behavior and disappointment.

4. Third Level: Coding of Emotional Regulation

The third level focuses on the way the participant attempts to regulate the emotions experienced during the simulation. The analytical question is not only which emotion is expressed, but how this emotion is managed and translated into action.

Situation	Emotion	Observed regulation
Gain	Excitement and confidence	Investing more
Loss	Frustration	Trying to recover
Stress and emotional tension	Tension	Pause, but without strategic revision
Failure of the initial strategy	Loss of control	Less rational adjustment
Observed rise in a stock	Excitement	Rapid purchase, without in-depth reflection

The central point is that emotional regulation mainly takes the form of action: buying, increasing exposure, recovering, and trying to return to the initial level. A pause is mentioned, but it remains limited, since the participant reports taking some air without substantially revising his strategy.

5. Fourth Level: Interpretation Through Behavioral Finance

Some emotional-decision episodes are related to concepts from behavioral finance. These interpretations should be understood as analytical associations, not as direct diagnoses of biases.

Coded episode	Behavioral interpretation
“I wanted it to rise more”	Overconfidence
Almost full investment of the initial capital	Increased exposure driven by enthusiasm
Loss followed by a desire to recover	Loss-recovery behavior
Increasing the investment from 10,000 to 25,000 euros to recover	Escalation of commitment
Waiting for the stock to rise again	Disposition effect and loss aversion
Buying because “it was rising a little”	Momentum-based decision
“I had lost the notion of money”	Disinhibition linked to virtual money and emotional involvement

The interpretation remains cautious. The analysis indicates that some passages in the interview are consistent with behavioral mechanisms.

6. Example of a Participant Coding Sheet

For each participant, a synthetic coding sheet was constructed. The following table provides an example based on this interview.

Category	Coding for P1
Gender	Male
Initial relationship to the stock market	Interest combined with limited knowledge
Initial state	Excitement
Dominant emotion	Frustration
Main positive emotion	Enthusiasm when stocks increased
Main negative emotion	Frustration and disgust when facing losses
Main driver	Decline in portfolio value, especially after 3 p.m.
Reaction to loss	Trying to recover, increasing exposure
Reaction to gain	Investing more, expecting the rise to continue
Mode of emotional regulation	Reparative action, limited pause
Associated behavioral mechanisms	Loss-recovery behavior, escalation of commitment, overconfidence, disposition effect
Interpretive profile	Offensive emotional regulation

Appendix C. Analytical Traceability Table for the Fifteen Interviews

This table presents the analytical traceability procedure applied to the fifteen interviews. It follows the sequence: empirical indicator, dominant emotion, observed emotional regulation and behavioral bias.

Participant	Gender	Empirical indicators	Dominant emotion	Observed emotional regulation	Behavioral bias or decision-making mechanism
P1	Male	Frustration; desire for the stock “to rise more”; when he loses, he tries to “recover”; after a loss, he strongly increases the amount invested; limited pause without strategic revision.	Frustration, excitement, disgust	Active loss-recovery regulation: acting to recover the loss; physical pause but no real strategic revision.	Loss-recovery behavior; escalation of commitment; overconfidence after gains; disposition effect
P2	Male	Large initial investment; desire to “stand out”; confidence when in a winning position; regret for having waited too long; ranking used to decide whether he should “change something.”	Stress, anger, confidence, disappointment	Corrective action: selling, buying again, changing strategy; comparison used as a trigger.	Overconfidence; gain-induced risk taking; social comparison; tournament effect
P3	Male	Initial mistrust; shift from positive to negative	Mistrust, frustration	Attempted recovery with limited structure;	Loss-recovery behavior; action under frustration;

		experienced as a “big shock”; at the end, “all or nothing”; frustration and desire to recover; regulation through walking/sport, but strategy remains feeling-based.		reliance on feeling.	confidence-based holding
P5	Male	Fear of losing; initial confidence when gaining; invests more “without thinking”; when losing, looks more carefully in order to recover; end marked by relative disengagement.	Stress, enthusiasm, disappointment	Mixed regulation: reduced control under confidence, then return to analysis under disappointment.	Overconfidence; risk-taking after gains; attempted recovery; delayed self-control
P9	Male	Stress related to the stakes and ranking; becomes confident when ranked first; when the portfolio decreases, he wants to sell; strategy of concentration “in his own bubble”; tries to avoid the influence of others.	Stress, anxiety, confidence	Attentional control: isolation, concentration, avoidance of social distractions.	Tournament effect; social comparison; self-regulation; loss aversion

P11	Male	Stress increases with the perceived complexity of the task; nervousness when stocks decrease; regret about one stock choice; attributes the loss to lack of information; volatility experienced as a source of stress.	Stress, moderate disgust	Informational explanation: search for causes and attribution to lack of information.	Information bias; external attribution; loss aversion
P4	Female	Fear of making a decision and regretting it; initial anxiety; confidence reduces decision time; sale of the portfolio at the end of the simulation; pause, rationalization, and reminder that the money is virtual.	Anxiety, fear of regret, frustration	Rationalization and slowing down; when confidence increases, decisions become faster but remain monitored.	Regret aversion; impulsivity under confidence; loss aversion
P6	Female	Stress linked to uncertainty; when in gain, she remains “in security”; under stress, she buys more; regret about an impulsive purchase; ranking is not central.	Stress, disgust, panic	Ambivalent regulation: security-seeking when calm, increased activity when stressed.	Emotion-driven trading; regret aversion

P7	Female	Very active profile; more than 50 transactions; stress and uncertainty; confidence in the middle of the simulation leads to additional purchases; waits for a rebound in a loss situation; portfolio almost fully invested.	Stress, frustration, disappointment, excitement	Offensive regulation, close to some male profiles: risk-taking, diversification, waiting for reversal.	Overconfidence; gain-induced risk taking; disposition effect; escalation of commitment
P8	Female	Mistrust linked to fear of losing; dominant stress; declining portfolio leads to sadness, loss of confidence, and disgust; when she loses, she stops investing; confidence returns when one stock offsets losses.	Stress, sadness, loss of confidence	Withdrawal regulation: stops investing when losses accumulate.	Loss aversion; regret aversion
P10	Female	Initially “chill,” then increasingly involved; nervousness about the right moment to sell; desire to recover a small loss; keeps 80,000 euros “safe”; sells	Nervousness, disgust, disappointment	Security-seeking regulation: protected capital, loss thresholds, sale after partial rebound.	Loss aversion; regret aversion; disposition effect

		when the loss decreases.			
P12	Female	Positive initial stress; quick purchases at the beginning; later analysis; more passive at the end; no longer buys, tries to minimize losses; sells quickly in case of moderate profit.	Stress, excitement, demotivation	Analysis followed by reduced activity; risk minimization at the end of the simulation.	Loss aversion; disposition effect; regret aversion
P13	Female	Very prudent; analyzes the previous five days; seeks safety and stability; says she remains calm because following emotions could be harmful; competition appreciated but controlled.	Calm, attention, positive stress	Analysis and emotional distancing; strong cognitive control.	Self-regulation; regret aversion
P14	Female	Begins with small investments; after several losses, stops investing; stable portfolio reassures her; investing becomes associated with losing; ranking is reassuring because she is well placed.	Positive stress, disgust, relief	Full withdrawal regulation: stopping transactions to prevent further losses.	Loss aversion

P15	Female	Initial curiosity; strong concentration; beginning marked by excitement; later reduction of transactions; limits positions to companies perceived as more reliable.	Concentration, excitement, frustration	Learning and refocusing: fewer transactions, more limited positions.	Self-regulation; correction after initial excitement
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Appendix D. Semi-Structured Interview Guide

Topic	Objective	Example Questions
General attitude toward the stock market and risk	Understand the participant's familiarity with the stock market, their attitude toward financial risk, and their mindset before the simulation.	What is your attitude toward the stock market and risky financial decisions? What was your state of mind before starting the simulation?
Emotional profile during the simulation	Identify the emotions experienced throughout the simulation and how they evolved from the beginning to the middle and the end.	Which emotions did you experience most frequently during the simulation? If you were to describe the simulation from the perspective of your emotions, how would the experience unfold?
Positive emotions	Understand the situations that generate enjoyment, satisfaction, confidence, or enthusiasm.	What gives you pleasure or satisfaction during this type of simulation? In which situations do you feel confident or enthusiastic?
Negative emotions	Identify the sources of fear, stress, tension, frustration, or discouragement.	What causes you the most fear, stress, or tension? How do you react to a loss or a poor decision?
Relationship between emotions and decision-making	Understand how emotions influence decisions to buy, sell, or hold assets.	Do you feel that your emotions influence your trading decisions? Have you ever regretted a decision

		because of a particular emotional state?
Emotion management and regulation	Identify the strategies used to control or reduce emotions during the simulation.	When you notice your emotions intensifying, do you try to manage them? What strategies help you maintain emotional distance during the simulation?

Appendix E. Instructions for Participants and Description of the ABC Bourse Platform

This appendix summarizes the instructions provided to participants before the simulation and the main features of the ABC Bourse platform used during the experiment. The instructions were presented before the beginning of the trading session and were also explained verbally by the teachers to ensure that the general rules of the simulation were understood.

1. Objective of the Simulation

Participants took part in a four-hour trading simulation on the ABC Bourse platform. Each participant managed an individual virtual portfolio with an initial capital of 100,000 euros. The objective was to maximize the final value of the portfolio at the end of the simulation, within the incentive framework described in the main body of the article.

2. Trading Environment

The simulation was conducted in an individual trading environment. Participants could place orders freely during the session, and all orders were executed at the market price available at the time of the transaction. The platform provided access to real-time prices, market information, portfolio composition, and portfolio value throughout the experiment.

The investment universe was limited to stocks included in the CAC 40 index. Short selling was not permitted. Participants could therefore only take long positions, by buying eligible securities and then potentially selling the securities held in their portfolios.

3. Trading Actions

During the simulation, participants could:

- buy eligible CAC 40 stocks using available cash;
- sell securities already held in their portfolio;
- keep cash or maintain positions without executing transactions.

Participants could place as many orders as they wished during the four-hour session, provided that they complied with the rules and constraints of the platform.

4. Portfolio Monitoring and Feedback

Participants could continuously monitor the value and composition of their portfolios. Ranking and performance information were available during the simulation, in accordance with the competitive framework and incentive system described in the article. This feedback made portfolio fluctuations, relative performance, and trading outcomes visible throughout the session.

5. Main Rules and Constraints

The main rules of the simulation were the following:

- only CAC 40 stocks could be traded;
- short selling was not allowed;
- trades were executed at real-time market prices;
- participants had access to market information during the session;
- each participant made decisions independently and managed only their own portfolio.

6. Data Recorded by the Platform

The platform recorded each participant's transaction history and successive portfolio statuses. These data were used to compute individual-level trading indicators, including the number of transactions, average transaction size, average cash holdings, final portfolio value, and variability of portfolio value during the trading session.

Appendix F. Descriptive Statistics of the Semi-Structured Interviews

Participant	Duration	Number of words	Number of pages
P1	7 minutes and 40 seconds	1,526	4
P2	18 minutes and 34 seconds	3,524	14
P3	10 minutes and 25 seconds	1,568	6
P4	12 minutes and 33 seconds	1,793	6
P5	8 minutes and 39 seconds	1,323	7
P6	11 minutes and 34 seconds	1,830	7
P7	15 minutes and 1 second	2,270	8
P8	12 minutes and 3 seconds	2,042	8
P9	17 minutes and 33 seconds	2,925	7
P10	25 minutes and 42 seconds	3,798	9
P11	13 minutes and 3 seconds	1,855	6
P12	19 minutes and 3 seconds	2,452	7
P13	25 minutes and 25 seconds	4,425	10
P14	21 minutes and 20 seconds	2,114	7
P15	19 minutes and 21 seconds	2,963	8
Mean	15 minutes and 52 seconds	2,427.2	7.6
Standard Deviation	5 minutes and 41 seconds	915.6	2.3
Minimum	7 minutes and 40 seconds	1,323	4

Maximum	25 minutes and 42 seconds	4,425	14
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Appendix G. Descriptive Statistics of the Sample

Participant	Gender	Age	Prior Practical Experience in Stock Market
P1	Male	20	Yes but limited to a stock market simulation organized as part of another finance course
P2	Female	20	No
P3	Female	19	No
P4	Female	19	No
P5	Female	33	No
P6	Female	18	No
P7	Female	19	No
P8	Female	19	No
P9	Male	20	No
P10	Male	19	No
P11	Female	24	No
P12	Male	20	No
P13	Female	20	No
P14	Male	19	No
P15	Male	19	No