Individual Investors Under Pressure: the Role of Emotions in Decision-Making

Pr. Alain Finet, PhD. Kevin Kristoforidis, Julie Laznicka (Doctoral Researcher)

Health Institute, Financial Management Department, University of Mons, Mons, Belgium

* **Correspondence**:

alain.finet@umons.ac.be;

kevin.kristoforidis@umons.ac.be;

julie.laznicka@umons.ac.be.

Abstract

Through laboratory experimentation, this research examines the influence of emotional states on the decision-making of individual investors, using a qualitatively oriented methodology. Our analysis follows a longitudinal design that makes it possible to analyze individual patterns overtime. More specifically, we study the evolution of emotions and decision-making processes during the experiment. The results reveal that participants whose score for negative emotions is higher than positive ones carry out a higher number of transactions. While a feeling of abandonment seemed to develop during the experiment, a negative emotional state would therefore result in more aggressive behavior in the desire to turn the situation back.

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1. Introduction

Decision-making processes on the stock markets are strongly influenced by the uncertainty related to the probability of the results (Allain, 2013). Traditional finance theories assume that individual investors are perfectly rational. However, their limited cognitive abilities, their low level of financial knowledge and the amount of information on the markets make this assumption of perfect rationality unrealistic. Given these limitations, individual investors often rely on intuitive and emotional factors to shape their decisions. The main advantage of this approach is the quick decision-making, although at the expense of its quality. Indeed, emotions often result in suboptimal decisions when they are not associated with a process of rational analysis of information. For this reason, this article, based on a qualitative methodology, puts into perspective how emotions could affect the decision-making of individual investors. In general, studies on this subject remain based on a quantitatively oriented methodology. The limitations of this approach lie in its focus on identifying cause-and-effect relationships between research variables, without considering the psychological reality of individuals. However, these psychological characteristics are thought to play an important role in the decision-making process on the stock markets, which are subject to uncertainty that make decision-making more complex (Sakthivelu & Karthikeyan, 2024). For this purpose, we use a longitudinal analysis, working on the basis of continuous observation of individual patterns in order to understand the influence of emotions on decision-making. Longitudinal analysis facilitates the analysis of the possible evolution of a phenomenon, in our case emotions (Forgues & Vandangeon-Derumez, 1999; Safi, 2011). To our knowledge, in the financial field, few studies use this type of approach, even though they could be very useful in identifying investor behavior disorders.

In this study, we try to answer the following research question: how does a negative emotional state influence the decision-making process on the stock markets compared to a positive one? To give an answer, we will analyze the emotions of the participants sequentially and at the end of the experiment. On the other hand, investment strategies and decision-making processes will be assessed by the number of transactions carried out per participant per day, as well as by the length of time the shares are held. We will also pay particular attention to the analysis of the environment and the situation in order to fully understand the conditions underlying our results.

The article will be organized as follows. In the next point, we will provide a state of the art regarding the influence of emotions on the decision-making of individual investors as well as how they try to avoid situations perceived as emotionally uncomfortable. The third point will concern the presentation of the protocol related to the experiment carried out, including the recruitment of participants, the stock market platform chosen and the measurement tools used. The fourth point will discuss our results. The fourth part will be devoted to a

discussion of the main conclusions of the study, particularly by comparing them with those from previous research. The fifth point will conclude this study by answering the initial research question and by considering several complementary avenues of research.

2. State of the Art

The influence of emotions on decision-making is widely discussed in financial literature. In situations of uncertainty, anger encourages optimistic judgments and audacious decisions (Lerner & Keltner, 2001; She et al., 2017). It is also correlated with optimistic expectations, impulsive decisions (Tsai & Young, 2010), and a reduction in risk perception (Lerner & Tiedens, 2006). Furthermore, anger motivates confrontation (Hutcherson & Gross, 2011), encourages risky choices (Hassan et al., 2013; Habib et al., 2015; Yang et al., 2018) and limits the ability to process information by selecting where attention is focused. However, it does not affect decision-making speed (Meissner et al., 2021). Anxiety also influences the decision-making process; it affects the perception of risks as well as potential gains. This negative feature thus alters the perception of probabilities and results, which induces specific preferences for the different investment decisions (Wu, 1999). Anxious people therefore make low-risk choices resulting in low gains (Raghunathan & Pham, 1999). These conclusions have also been extensively developed in more recent literature. Numerous studies show that anxiety encourages cautious and conservative financial decisions (Gambetti & Giusberti, 2012; Bishop & Gagne, 2018; Gambetti et al., 2022). On the other hand, sadness leads to higher risk-taking compared to other emotions (Matsumoto & Wilson, 2023). Furthermore, fear induces pessimistic estimates and encourages cautious choices due to an increase in risk perception (Lerner & Keltner, 2001; Tsai & Young, 2010; Hassan et al., 2013; Habib et al., 2015; She et al., 2017; Yang et al., 2018). It also reduces the performance of individual investors by limiting their ability to make effective decisions (Lo et al., 2005). Disgust could ultimately be considered as a risk prevention factor, reducing exposure to risk but also limiting potential profits. Disgust therefore influences decision-making through its association with other types of risk aversion (Sparks et al., 2018). Positive emotions, such as joy, desire and relaxation, have little difference in influencing the decision-making process (Xing, 2014). Gosling and Moutier (2017) demonstrate that positive emotions (particularly in the presence of a high probability of gain) increase risk propensity, especially in loss contexts. Moreover, positive emotions are positively correlated with returns in a bullish market (Wang et al., 2014). Although negative emotions seem to generate a greater diversity of reactions in a context of uncertainty, several studies show that the discomfort caused by this type of emotion may encourage people to reduce the intensity and duration of negative emotions (Gross et al., 2006).

Based on cognitive flexibility, Karboul and Zouaoui (2013) argue that the complexity of decision-making involves the coexistence of a rational and an irrational style. To cope with the conditions of the decision-making context, the individuals will alternate between the rational and the irrational through their ability to be cognitively flexible (emotional reactions being strongly correlated with the cognitive evaluation carried out by individuals in decision-making situations (Diaz R., 2022). Damasio (1995) described, through somatic markers, the decision-making process for avoiding unpleasant consequences and looking for much more advantageous solutions. Similarly, people avoid decisions that could produce regrets (George and Dane, 2016). Stevenson and Hicks (2016) also refer to a decision-making model that reflects the thoughts of decision-makers and which, in this case, increase satisfaction and help to prevent the generation of regrets for poor decisions. For the purpose of this article, an inductive approach was used following a qualitative and interpretivist perspective. Inductive research is not commonly used in finance because it does not necessarily lead to generalizations, as in deductive research. However, when applied to financial research, through the results generated, induction helps reinforcing (Liu et al., 2022), modifying or revisiting theories (Casula et al., 2021). It also provides an accurate understanding of how individuals behave and their perceptions (Prosek & Gibson, 2021 ; Vears & Gillam, 2022). Inductive studies only consider a small number of highly granular controlled observations. Therefore, we built a controlled experimental environment to analyze the emotional dynamics in the individual investors' decision-making process on the stock markets.

3. The Experimental Protocol

The Experimental Protocols are often presented very briefly in financial literature, which raises the question of their replication (Serra, 2017). However, the replication of experimental protocols is a basic principle that guides the experimental approach. How much a result is replicated in various experimental contexts is how strong it is. However, although well-designed experiments help creating a controlled environment, behavioral finance theories have only been tested through a limited number of experiments, and only occasionally (Xia & Madni, 2024). For this reason, in the following point, our experimental protocol is explained in detail.

3.1. Selecting Participants

The experiment was conducted in January 2025 through a student population pursuing a degree in Management Sciences at a Belgian university. The first calls for participation were sent at the end of October 2024. Students had to justify their participation beyond financial interest. No deadline was set in order to maintain a pool of participants and assess their motivation. After one week, ten applications were received, eight of which met the criteria. One application

was rejected for lack of justification. The sample was restricted to eight participants for two reasons : first, a financial constraint, and, second, the resources required to process the large amount of data. Some criticisms in the field of experimental finance put forward to the significant gap between the psychological reality of students vs. traders. However, the state of the art demonstrates that experimental studies are often conducted with student populations : this type of participant is both easy to mobilize and reduces the costs and time for recruitment (Etchart-Vincent, 2006; Kirchler, 2009; Hanke et al., 2010; Bouattour and Martinez, 2019). In order to reduce the limitations due to lack of familiarity, we provide various supporting elements. First, to the extent that the participants have successfully completed some financial courses, they should have a relatively high level of socialization in the financial field, namely in trading activities. Secondly, regarding the representativeness of students in comparison with the general population, several studies show that the behavior patterns of students and professionals are relatively similar (Porter and Smith, 2003; Fréchette, 2011). Moreover, Abbink and Rockenbach (2006) stress that students are comparable to professional traders in their assessment of the available options. In any case, in the experimental field (Gugenheim, 1953) and experimental finance (and, more generally, in the analysis of the effect of emotional fields on decision-making, Rossignol et al., 2007; She et al., 2017), using of student populations is widely accepted (see the study by Ackert et al., 2005). Different studies demonstrate that it makes scientific sense (Biais et al., 2005; Bruguier et al., 2010; Widyarini, 2017). In order to ensure that students' behavior closely reflected what traders actually do, a reward (consisting of one night's hotel accommodation for two people valued at €200) was promised to the portfolio with the highest value at the end of the experiment.

3.2. Choosing the Trading Platform

The stock exchange platform is ABC Bourse, with which we have already worked previously. Other comparable stock exchange sites can be used to create virtual portfolios, but not stock market games. ABC Bourse makes it possible to create stock market games based on a virtual portfolio (100,000 euros), to place orders and to determine their influence on the total financial value. Note that the platform also displays the ranking of the different participants based on the financial value in real time, which, given the incentive offered at the end of the experience, could increase emotional excitement. The platform includes, like any stock market websites, a range of macroeconomic and political information, information about companies and technical analysis (moving averages calculated over various time intervals and the RSI, both of which have been covered in different theoretical courses). All of these elements provide participants with a realistic framework for making their decisions and give us the opportunity to analyze their strategies and the reasons behind them.

3.3. The Environment

The experiment took place from January 27 to 31, 2025. The participants were put in a continuous trading situation. They were paid for 24 hours of trading (three days). Their student job status was finalized in December 2024. As noted just before, a reward will be given to the student with the best performing portfolio. Although non-financial, this incentive aims to stimulate motivation and commitment, according to studies on the impact of rewards in this type of experience (Etchart-Vincent, 2006; Gabbi & Zanotti, 2019). The motivation is thus based on both direct remuneration and the incentive at the end of the experiment.

3.4. The Situation

Each participant used the ABC Bourse platform to carry out transactions on the CAC40, on an individual basis in order to avoid the influence of some individuals on others. The virtual portfolio of 100,000 euros was to be invested in CAC40 companies, a choice based on the students' better knowledge of this index. No transaction limit was set. The experiment was conducted in 12 one-hour sessions over three days, with real-time following of the other participants' portfolio values, in order to introduce stress and emotions, similar to real market conditions. The question of the initial composition of the portfolio was given central attention. In fact, previous experiments have shown that initial portfolios fully invested in shares led to higher risk-taking, while a portfolio initially consisting of cash encouraged cautious behavior, regardless of the market context. For this experiment, we chose a portfolio consisting exclusively of cash. Finally, a reward was given to the participant with the best-performing portfolio, reinforcing the competitive and immersive dimension of the experience.

3.5. Measurement Techniques and Tools Selected

There are three categories of measurement instruments used in the experiment. The first category includes the tools administered prior to the experiment, such as the questionnaire on sociodemographic characteristics, using closed questions. The second category is based on the sequential analysis of emotions as the experiment progresses, because individuals generally forget emotional peaks within 24 hours (Can et al. 2019). Furthermore, Seban (2016) highlights three theoretical phases for European markets with largely different market behavior and potentially distinct emotional responses:

- Opening (9:00 a.m. – 11:30 a.m.): during this period, European investors assimilate information from the American markets and, more marginally, from the Asian markets. Furthermore, some announcements (for example, concerning company results) may have been made after the European markets closed. Raw material prices trends and currencies during the night can also influence the behavior of investors;

- The dead zone (11:30 a.m. - 2:30 p.m.): during this period, investors digest the information received during the opening phase and wait for the US markets to open. The dead zone can be compared to a waiting area in which investors will take decision by creating new opportunities (Kabbaj, 2011) ;

- The close (2:30 p.m. – 5:30 p.m.): during this period, investors will be strongly influenced by the configuration of the American markets, which is itself conditioned by corporate and macroeconomic information. During this period, the volumes traded will be the highest during the day on the European markets (Cushing and Madhavan, 2000; Bacidore et al., 2013).

For the purpose of the sequential analysis, participants were asked to complete a questionnaire on their emotional state after the zone related to the opening, the dead zone, and at the end of each day of the experiment (the closing). The questionnaire (based on Harmon-Jones et al., 2016) is used to measure the participants' primary emotions during the experiment. Each item refers to a primary emotion (anger, disgust, fear, anxiety, sadness, desire, relaxation and joy). By calculating the total score for each category, the predominant emotions after each important moment on the stock markets (opening, dead zone and closing) will be identified.

Finally, the last category is related to the downstream analysis of the emotions experienced by the participants. For this purpose, we adjust one of the steps in the questionnaire on discrete emotions by Harmon-Jones et al. (2016) to the context of decision-making in trading. For each emotion, participants were asked to recall a specific moment during the experiment when, for example, the market configuration did not meet their expectations and had a negative impact on the portfolio value. After recalling this memory, participants were asked to write a short summary and to share it with us. According to Harmon-Jones et al. (2016), this approach can induce emotions through memories within the framework of emotional scenarios. This method also serves as an effective tool for interpreting and organizing information for decision-making (Gueroui, 2016). Following the scenario, participants had to provide a word that described emotion and four additional words to define and precise it. The participants had no knowledge of the emotion to be analyzed, to avoid influencing their responses.

4. Results

4.1. Context at the Time of the Experiment

The experiment took place over three days during which the general stock market configuration showed a negative overall trend, even if the losses were relatively small. Table 1 shows the data relating to the evolution of the CAC40 over the period as well as those relating to the evolution of the American and

Japanese stock market indices in order to have a broader view of the stock market environment.

Some information fields strongly influenced market behavior over these three days. For the first day, DeepSeek, the Chinese competitor of American companies active in the field of artificial intelligence, was the main topic. The second day was strongly influenced by the information about DeepSeek and the consequences for American companies in the artificial intelligence market. The third day saw the announcement of LVMH's annual results (lower than expected). The markets had largely anticipated the FED's announcement on January 29 that it would be keeping interest rates unchanged.

***Table 1**: Evolution of the CAC 40, DJ30, NASDAQ 100 and TOPIX over the Experiment.*

Indicators	01.27.2025	01.28.2025	01.29.2025	Total
CAC 40	-0,0003	-0,00012	-0,0032	-0,0036
DJ 30	0,0065	0,0031	-0,0031	0,0065
NASDAQ 100	-0,0297	0,0159	-0,0024	-0,0162
TOPIX	0,0026	-0,0004	0,0068	0,009

4.2. Descriptive Statistics

The socio-demographic characteristics of the participants gave us descriptive statistics relating to our sample. A majority of male participants was noted, which confirms the conclusions of previous studies showing a male propensity to participate in activities related to the stock markets or simply to participate in activities in which the playful component is prevalent (Barber and Odean, 2001; Finet et al., 2022). In addition, most of the participants regularly attend the finance-oriented courses, which seem to correspond with their motivation to take part in this experiment.

Table 2: *Characteristics of Participants by Gender, Age, Course Attendance, Prior Knowledge of Stock Markets and Use of Stock Market Websites*.

Data	Values	Number	Percentage
Gender	Women	1	0,125
	Men	7	0,875
	Total	8	1
Age	21 years	3	0,375
	22 years	1	0,125
	23 years	1	0,125

	24 years	1	0,125
	26 years	1	0,125
	Total	8	1
Course Attendance Rate	Less than 30%	1	0,125
	Between 30% and 60%	1	0,125
	More than 60%	6	0,75
	Total	8	1
Prior Knowledge of Stock Markets	Yes	6	0,75
	No	2	0,25
	Total	8	1
Use of Stock Market Websites	Yes	5	0,625
	No	3	0,375
	Total	8	1

4.3. General Trend of Emotional States

Emotions were measured using a questionnaire administered after each important phase of the European stock markets. It was designed to measure different basic emotions in our participants, namely anger, fear, anxiety, disgust, sadness, desire, relaxation and happiness. Although this questionnaire has more items relating to negative emotions, it can be seen that, in general, positive emotions remain higher overall than negative emotions among the majority of participants. In order to provide an in-depth analysis of the participants' emotional states, the evolution of emotions as the experiment progressed is detailed below.

On the first day, positive emotions dominated, mainly due to the motivation and excitement related to the experiment. Participants learned about stock markets and the types of information that could affect them. The transactions carried out were mainly aimed at building up an initial portfolio and therefore did not really have an impact on the participants' emotions. As shown in Figure 1, relaxation, happiness and desire were the most prevalent emotions.

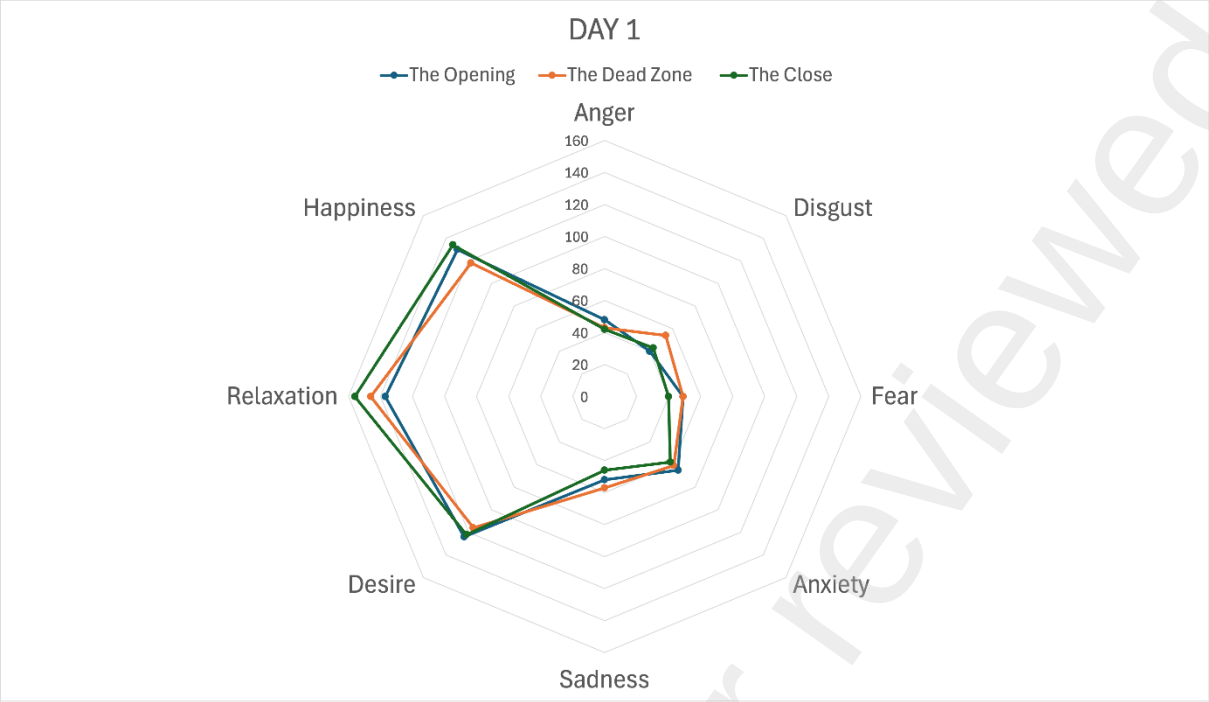

***Figure 1**: Evolution of Emotions During the First Day, according to the Phases of the European Markets.*

On the second day, emotional states remained positive, with a prevalence of relaxation and happiness. However, a slight increase in negative emotions began to occur: some participants must have begun to experience some consequences of the transactions carried out the previous day.

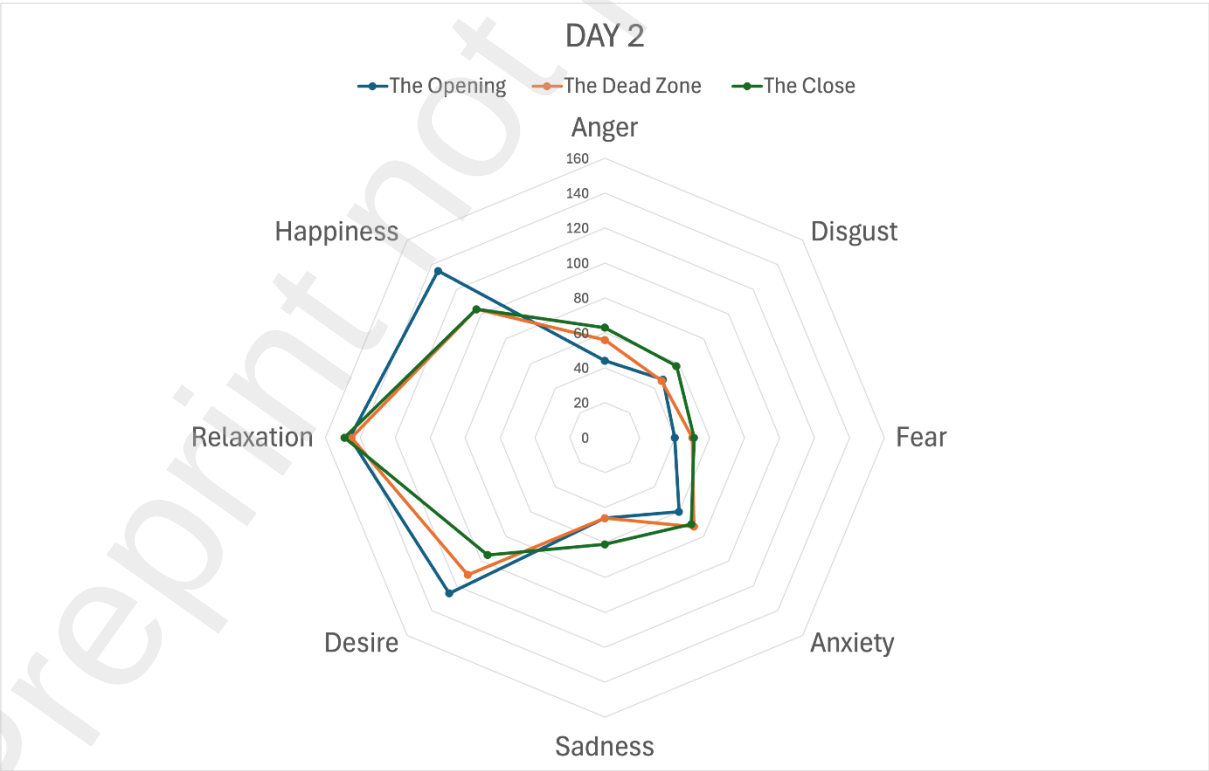

***Figure 2**: Evolution of Emotions During the Second Day, according to the Phases of the European Markets.*

The third day, however, shows a slight decrease in positive emotional scores. This decline is related to several factors : firstly, the last day of the experiment is, according to the participants, related to the reward given to the best financial portfolio. As a result, there is a slight increase in pessimism compared to the first day of the experiment regarding individuals who do not improve their ranking during the third day. Secondly, the cognitive efforts made by the participants to define a trading strategy and identify opportunities were not necessarily profitable. This could create a feeling of discouragement at the end of the experiment. Finally, the third day was mainly influenced by a bearish trend in the CAC40, as shown in Table 2. This market trend once again reduced the participants' desire to try improving their ranking.

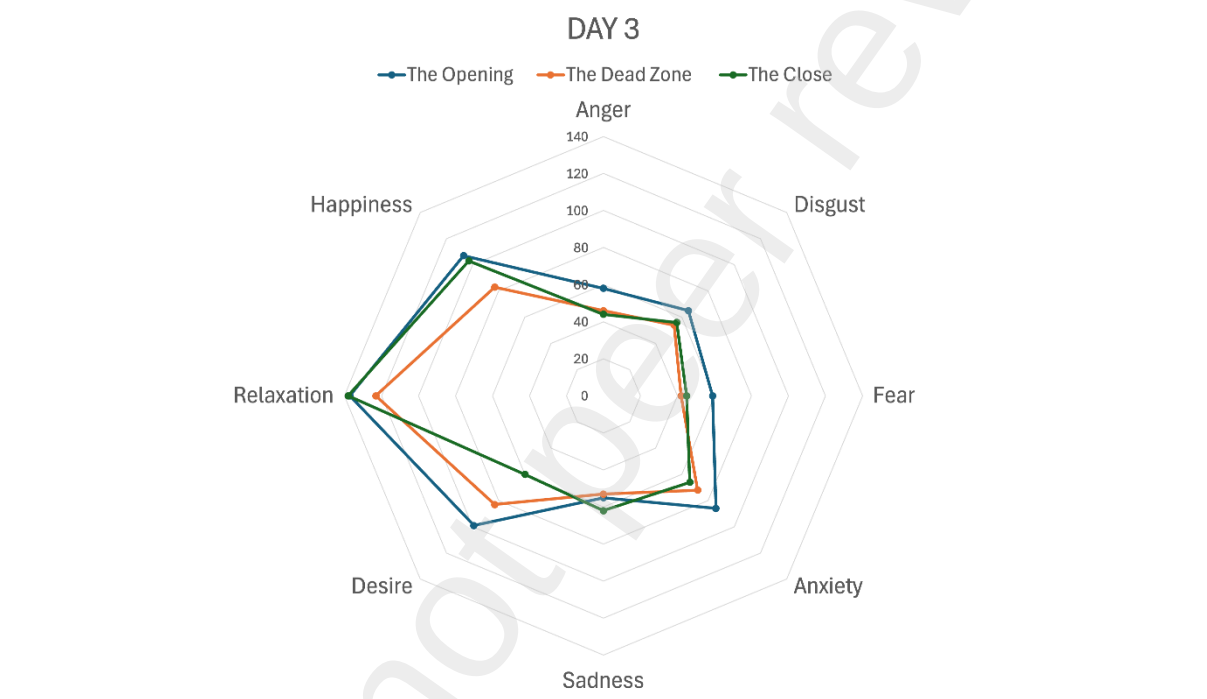

***Figure 3**: Evolution of Emotions During the Third Day, according to the Phases of the European Markets.*

4.4. Influence of Negative Emotional States on Decision-Making

As individuals generally try to reduce the intensity of negative emotions and intensify positive emotions, we aim at understanding how the persistence of negative emotions could affect decision-making on the stock markets. For this analysis, in the following part of this section, we compare the decisions made by participants in a positive emotional state and those made by participants in a negative emotional state. The decision-making process was analyzed in terms of the number of transactions per participant per day and the shares holding time.

Table 3 shows that participants with a higher score for positive emotions than for negative ones made between 1 and 20 trades. This result is also supported by Table 4, which shows that most participants (62.5%) made a minimum of 20

trades on the first day. Furthermore, strategies were very conservative: the statistical data relating to holding times (Table 5) show that 75% of participants held their shares for more than two hours, demonstrating little use of offensive strategies and scalping trading (investment horizon of less than 15 minutes). This can be explained by referring to the previous figures, from which relaxation was the highest positive emotion during the experiment. This emotion seems to encourage individual investors to follow a more “relaxed” approach, which can reduce impulsive behavior. In addition, a positive emotional state may lead individual investors not to constantly adjust their investments strategy because they appear rather confident in the decisions being made.

***Table 3**: Positive and Negative Emotion Scores, Holding Time and Number of Transactions for Each Participant on the First Day.*

	A	B	C	D	E	F	G	H
DAY 1								
Positive Emotions	97	172	214	136	170	115	156	123
Negative Emotions	82	68	85	82	76	133	160	61
Holding Time	03:05:40	04:33:00	04:33:00	03:51:11	02:01:00	01:01:28	02:02:00	02:39:12
Number of Transactions	15	17	11	23	18	28	50	13

***Table 4**: Transactions During the First Day*.

Ranges	**Frequency of Transactions**
Between 1 and 20	62,5%
Between 21 and 40	25%
Between 41 and 60	12,5%

***Table 5**: Holding Time*

Holding Time	**Frequency**
Between 0 minutes and 2h13	25%
Between 2h14 and 8h29	50%
Between 8h30 and 17h51	25%

Consequently, we focus on participants who carried out more than 20 transactions. Firstly, we note that participant D, despite a score of positive

emotions higher than negative ones, carried out 23 transactions during the first day of the experiment. This behavior can be related to overconfidence. In the questionnaire on emotions administered at the end of the experiment, this participant mainly mentioned the confidence and feeling of pride after making some profits. This may contribute to an increase in the transactions' numbers, believing that the strategy was the right one and that the following decisions would bring a similar level of satisfaction. Secondly, participant F carried out 28 transactions and had a higher score for negative emotions than positive emotions (see Table 3). Our data reveal a very high level of anxiety ; it was mentioned in the questionnaire at the end of the experiment that "*having never participated in an experiment or a stock market competition, it was difficult for me to get used to the stock market interface and implement the financial negotiation techniques*". He therefore fell behind the other participants. As a result, participant F frequently modified his portfolio to find the "good" strategy. Finally, participant G recorded the highest number of transactions on the first day of the experiment (see Tables 3 and 4). His emotional state was mainly dominated by anger, although the other negative emotions had relatively similar scores. It can be explained considering that the general market configuration did not meet his expectations, and this had a negative effect on the financial value of his portfolio. He explained: "*I had anticipated an increase in the price of some shares but I had invested too early, so I ended the day in the red*." The losses incurred caused impulsive behavior with, on the one hand, a very high number of transactions (see Tables 3 and 4) and, on the other hand, a relatively short holding time (see Tables 3 and 5). At the end of the second day, half of the participants had carried out fewer than 10 transactions (see Table 7). All these participants had a higher score for positive emotions than for negative ones (see Table 6). We are therefore focusing more specifically on the other participants. Participants D and H, although in a positive emotional state, made 18 and 12 transactions respectively. Concerning participant D, this is the same person with the overconfidence identified on the first day that seems to be confirmed. However, participant H argued: "*the gains made on the first day turned into a loss at the start of the second day. I was disappointed and regretted not having sold those shares the day before*." As a result, he switched to a more aggressive strategy, increasing the number of transactions.

The other two participants displayed negative emotional states. Participant G was dominated by anxiety, which drove him to carry out a lot of transactions. However, the anxiety did not have a specific influence on the holding time. Participant E, on the other hand, carried out the greatest number of transactions on the second day (see Tables 6 and 7). One explanation can be found as follows: "*When Schneider's share price was falling, I increased the gap with the other participants even more, as I was determined to do better*." He also put forward, "*I was a bit lost, but I tried to catch up as best I could." The losses*

incurred therefore caused an emotional state that probably motivated his decision-making, with the aim of "improving the situation", with a very short holding time and a high number of transactions (see Table 6).

***Table 6**: Scores for Positive and Negative Emotions, Holding Time and Number of Transactions for Each Participant During the Second Day.*

	A	B	C	D	E	F	G	H
DAY 2								
Positive Emotions	130	174	172	141	110	134	132	122
Negative Emotions	74	61	150	70	112	118	163	62
Holding Time	08:59:00	09:49:51	07:07:00	04:51:51	03:07:48	03:40:54	05:44:22	03:51:40
Number of Transactions	2	4	9	18	21	8	14	12

***Table 7**: Transactions During the Second Day.*

Ranges	**Frequency of Transactions**
Between 1 and 10	50%
Between 11 and 20	37,5%
Between 21 and 30	12,5%

On the last day, two different types of behavior among the participants were found (see Table 9). On the one hand, a feeling of abandonment seems to have developed among some participants (see A, B and H in Table 8), who have made almost no transactions (see Table 9). That finding is particularly surprising because a reward had been promised to the owner of the highest portfolio. We hypothesize that the accumulation of disillusionment led these participants to give up, and the individuals no longer had enough energy to deal with their emotions (Domeignoz, C. and Morin, E., 2016).

Consequently, participants become more and more aware of the strong cognitive efforts required to develop a trading strategy and try to anticipate market trends, which leads to admitting their weaknesses and adopting a posture of "victimization". *The market holds all the cards*, and participants have no control over market trends. This feeling of abandonment may, according to us, explain the decrease in the number of transactions on the last day.

On the other hand, we also notice opposite behaviors, characterized by the development of more aggressive strategies at the end of the experiment (cf. C, E and G in Table 8). Participants C and G also show a higher score of negative emotions than positive ones. Answers to the questionnaire administered at the end of the experiment help to understand : "*On the last day, I completely lost it as soon as it opened, I was surprised and my impulsiveness only increased*," it was also added "*I didn't want to suffer any more big losses, so I sold my LVMH shares very quickly when the stock price fell*." These comments explain the higher number of transactions by these participants, as they had nothing left to lose. However, participant C, dominated by anxiety, told us: "*after selling everything because I was losing everywhere, I didn't know what to do and every decision seemed wrong*". The offensive strategy developed by participants in a negative emotional state does not lead to better performance and induces more negative emotions.

***Table 8**: Scores for Positive and Negative Emotions, Holding Time and Number of Transactions for Each Participant During the Last Day.*

	A	B	C	D	E	F	G	H
DAY 3								
Positive Emotions	73	187	109	100	103	96	133	132
Negative Emotions	91	60	123	99	75	134	221	60
Holding Time	14:59:00	15:28:05	05:23:21	09:00:52	05:15:25	07:45:00	09:49:20	08:52:12
Number of Transactions	0	2	16	8	16	7	12	1

***Table 9**: Transactions During the Second Day.*

Ranges	**Frequency of Transactions**
Between 1 and 5	37,5%
Between 6 and 11	25%
Between 12 and 20	37,5%

5. Discussion

Our analysis of the decisional processes of the participants during the experiment shows the influence of emotions on their investment strategies. The results indicate that positive emotional states have no specific influence on the

decision-making process with conservative strategies. These results confirm the conclusions of Xing (2014) and Herman et al. (2018) that positive emotions have a similar influence on the decision-making process and strengthen the ability to wait for gratification. Similarly, Stevenson and Hicks (2016) argue that confident individuals do not seem inclined to change their investments strategy. However, we identified a particular participant who, despite showing a higher score for positive emotions than negative ones, carried out a high number of transactions. This behavior suggests an excess of confidence, which supports the findings of Afreen and Jitendra (2019) showing that excessive confidence leads to very optimistic behavior and an excessive transactions volume. However, a negative emotional state drives individual investors to choose aggressive strategies with a high number of transactions, with little effect on holding times. Here, our results show that anxiety leads to more transactions with short holding times at the start of the experiment, followed by more stable results. To a certain extent, our findings challenge the conclusions that anxious people are more conservative, in other words, they do not want to take too many risks (Gambetti & Giusberti, 2012; Bishop & Gagne, 2018; Gambetti et al., 2022). In addition, the effect of anger seems to lead to a high number of transactions and very short holding times relative to other participants. This behavior indicates using an offensive strategy. It can therefore lead to a desire to quickly correct losses and regain control over a perceived frustrating situation. These results are in line with the conclusions of Tsai and Young (2010) : anger is associated with impulsive decision-making. As a result, we found that participants with a high score for negative emotions displayed more aggressive strategies at the end of the experiment because they had nothing left to lose. These participants, strongly influenced by negative emotions, fell into a “vicious circle”, where the fear of further losses drove them to make more transactions (often poorly defined).

6. Conclusion

In summary, the article argues that participants who have not successfully regulated their negative emotions behave differently from participants in a more positive emotional state. To answer our research question, we argue that individual investors in a negative emotional state behave more aggressively, while those in a positive emotional state use more cautious strategies or develop a feeling of abandonment. Different avenues of future research could be considered to improve understanding of the influence of emotions on the decision-making process. Firstly, as we consider psychological realities and qualitative tools, the analysis of individual patterns makes it very difficult to draw general conclusions (even if we believe that this is the best way to proceed in order to achieve a high degree of precision in understanding the decision-making processes on the stock markets). By increasing the sample size, we

would be able to carry out a mapping process using a range of different categories coming from the psychological reality of investors. To facilitate their broad application by using qualitative tools, the measurement instruments could also be complemented by semi-structured interviews and a focus group. Secondly, it would be interesting to identify more precise connections between emotions and biases. Although our contribution addresses overconfidence and regret theory, future studies could look specifically at the influence of emotions on a broader spectrum of biases.
Thirdly, the qualitative methodology could be extended to include neurophysiological measurements (face tracking, ElectroEncephaloGram, heart rate…). These instruments would provide a deeper understanding of the decision-making process of individual investors.

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8. Disclosure of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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