



The influence of behavioral biases and emotions on financial risk tolerance and how emotional regulation moderates these relationships

A study on individual day traders

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Abstract

This study conducts qualitative research on the influence of behavioral biases, emotions and emotional regulation on the financial risk tolerance of individual day traders, an understudied yet growing demographic in the financial markets. Research was conducted using semi-structured interviews, interviewing 11 male day traders from two discord communities. Thematic analysis was used to identify six major themes. The empirical findings show fear as the dominant emotion driving risk-averse behavior and overconfidence as the primary bias increasing financial risk tolerance. Furthermore, herd behavior was identified to increase financial risk tolerance and the disposition effect primarily decreased financial risk tolerance. Situation modification and cognitive change were the most frequently used emotional regulation strategies. Findings reveal that fear manifests in risk-averse behavior such as trade avoidance, hesitations and premature exits, while overconfidence prompts risk-seeking behaviors including increasing trade frequency and ignoring contradicting information. Herd behavior increased financial risk tolerance through external-driven influences, which introduced FOMO and a distortion in risk management, while the disposition effect primarily decreased financial risk tolerance, with traders closing winning positions earlier than anticipated. Situation modification was predominantly done through closing trading charts and completely changing their environment. Cognitive change was done by use of journaling, reflecting and reframing of trades. Both situation modification and cognitive change were shown to reduce the risk-increasing and risk-decreasing effects of behavioral biases and emotions on financial risk tolerance.

The study contributes to behavioral finance by addressing the knowledge gap on individual day traders, highlighting possible unique psychological dynamics. The results offer practical implications for traders, including strategies to potentially enhance financial decision-making.

Keywords: Behavioral biases, Emotions, Emotional regulation, Financial risk tolerance

Contents

1. Introduction	3
1.1 Professional vs Individual day traders	3
1.2 Emotional Regulation	3
1.3 Problem statement	4
2. Literature Review	5
2.1 Financial Risk Tolerance	5
2.2 Behavioral Biases	5
2.3 Emotions	6
2.4 Emotional Regulation	8
2.5 Theoretical Framework	9
3. Methodology	11
3.1 Research Design	11
3.2 Data collection	11
3.3 Sampling strategy	12
3.4 Data Analysis	12
4. Findings	14
4.1 Fear as the dominant emotion driving risk-averse behavior	14
4.2 Overconfidence as the primary bias increasing financial risk tolerance	15
4.3 Herd behavior's externally-driven influence on financial risk tolerance	15
4.4 Disposition effect's predominant issue of prematurely closing winners	16
4.5 Situation modification as the dominant emotional regulation strategy	17
4.6 Cognitive change as a frequently used emotional regulation strategy	18
4.7 Revised theoretical framework	19
5. Discussion and Conclusion	20
5.1 Summary of key findings	20
5.2 Interpretations	20
5.3 Implications	21
5.4 Limitations	22
5.5 Recommendations	23
5.6 Conclusion	23
References	24
Appendices	29
Appendix 1: Data display (Themes, Codes, Definitions and Examples)	29
Appendix 2: Direct message for approaching potential interview participants (Discord)	31
Appendix 3: Declaration on the Use of AI Tools	32

1. Introduction

This study investigates the influence of behavioral biases, emotions and emotional regulation on the financial risk tolerance of individual day traders, a group that is becoming increasingly prominent in today's financial markets. According to academics like Simon (1984) and Becker (1962), a large portion of conventional economic theory assumes rational behavior, in which people carefully evaluate risk and return to optimize financial outcomes. These assumptions promote the pursuit for an optimal trading model that appeals to both large financial institutions and individual day traders. However, an increasing amount of literature, most notably Tversky & Kahneman (1974), has questioned this principle by demonstrating effects of biases and emotions driving irrationality in financial decision-making. Martelli (2017) pointed out that people frequently find it difficult to fully evaluate every outcome due to the intrinsic limitations in human information processing. To navigate these constraints, traders use heuristics, which are cognitive shortcuts influenced by biases and emotional triggers. These shortcuts facilitate traders' decision-making but often result in suboptimal choices (Simon, 1955; Tversky & Kahneman, 1974). Therefore, biases and emotions are one of the drivers of day traders' suboptimal financial decisions, making them more likely to take on more risk than they originally intended (Daniel et al., 2002). In order to narrow the scope of financial decision-making, this study focuses on financial risk tolerance, defined as an individuals' attitude towards risk in financial contexts. This construct provides a consistent, unifying framework, conceptualized as a spectrum from low to high risk tolerance, in order to capture the interaction between psychological factors and trading decisions.

1.1 Professional vs Individual day traders

While the impact of biases and emotions on financial decision-making has been thoroughly investigated among professional day traders, individual day traders remain a largely understudied population. Professional traders operate in large financial institutions where they benefit from structured support systems and other resources like analysts, protocols and algorithms. On the other hand, individual traders work alone, relying solely on their own resources and abilities. They lack institutional backing and a reliable income safety net. This has the possibility of increasing the psychological impact on their financial decisions. According to Lindner (2024), approximately 80% of day traders quit trading within the first two years, while Barber et al., (2019) and Chague et al. (2020) suggest that 97% lose money, highlighting the difficulty that this group faces. The importance of this demographic is amplified by the rise in individual day trading, which is driven by easily accessible retail broker platforms, remote work trends, and increased retail investor participation (Wheat & Eckerd, 2024; Schwab, 2021; Groette, 2024; Pabilonia & Redmond, 2024). Examining the unique psychological dynamics of individual day traders, may reveal clear patterns in how behavioral biases and emotions influence financial risk tolerance and how they perhaps differ from professional traders.

1.2 Emotional Regulation

In addition to exploring behavioral biases and emotions, this study examines the moderating effect of emotional regulation, which potentially reduces the impact of behavioral biases and emotions on financial risk tolerance. The high-stakes, fast-paced nature of day trading requires quick decision-making, and maintaining rational judgement is crucial to avoid impulsive and inconsistent behavior. The influences of behavioral biases and emotions on financial decision-making are unavoidable, however, effective regulation techniques have the ability to manage them. Fenton-O'Creevy et al. (2011) showed the importance of emotional control in investment bankers, identifying strategies to optimize decision-making. By adapting these observations, this study explores whether similar strategies apply to individual day traders or whether their unique context calls for different methods. Understanding the moderating ability of emotional regulation on the relationship between psychological factors and financial risk tolerance, may lead to improved decision-making of individual traders.

1.3 Problem statement

This study seeks to explore the influence of behavioral biases and emotions on financial risk tolerance and how emotional regulation moderates those relationships, focusing on individual day traders. A qualitative approach is necessary to capture the complex psychological obstacles that individual day traders face in their daily market interactions. By focusing on a specific segment of market participants, this study intends to contribute to the existing literature on financial decision-making.

The main research question is thereby stated as the following;

“How do behavioral biases and emotions influence the financial risk tolerance of individual day traders and how does emotional regulation moderate these relationships?”

The problem statement and the main research question investigated in this study consist of the following research questions and subsequent relationships that will have to be answered and explored;

I How do behavioral biases influence the financial risk tolerance of individual day traders?

II How do emotions influence the financial risk tolerance of individual day traders?

III How does emotional regulation moderate the influence that behavioral biases have on the financial risk tolerance of individual day traders?

IV How does emotional regulation moderate the influence that emotions have on the financial risk tolerance of individual day traders?

2. Literature Review

This chapter synthesizes existing research on financial risk tolerance, behavioral biases, emotions and emotional regulation, establishing the theoretical foundation for examining the research questions. The review first outlines financial risk tolerance, continuing with the key behavioral biases, followed by prevalent emotions and ending with strategies for emotional regulation.

2.1 Financial Risk Tolerance

Risk tolerance fundamentally influences how individuals navigate decisions involving financial uncertainty. It is an important factor that shapes a wide range of personal financial choices, from decisions like selecting a mortgage, choosing between credit or savings, or investing in emerging tech stocks, to specialized tasks such as investment analysis and financial planning models (Snelbecker et al., 1990). For day traders, risk tolerance directly affects their trading decisions. Assessing risk tolerance, however, is complex and extends beyond simply asking individuals about their willingness to accept risk (MacCrimmon et al., 1988). Snelbecker et al., (1990) emphasize that even financial professionals struggle to accurately obtain their clients' financial risk tolerance, often only uncovering true attitudes after significant economic events, which expose their underlying preferences in risk tolerance. In this study, day traders may provide socially desirable answers to project an image of balanced risk tolerance and financial responsibility. Despite such limitations, this research measures financial risk tolerance along a spectrum from low to high, rather than a specific amount of risk.

Financial risk tolerance, the dependent variable in this study, is defined as the maximum uncertainty an individual accepts when making financial decisions (Grable & Joo, 2004). It reflects an individual's attitude towards risk, ranging from risk aversion to risk seeking (Hallahan et al., 2004). Risk aversion leads to avoiding a decision that has an uncertain payoff and instead deciding on a payoff with a more certain outcome. Risk seeking is the attitude towards risk where one prefers to choose an uncertain payoff, but with a potential higher reward. Weber et al. (2002) conceptualize risk tolerance as a continuum between these extremes, a framework adopted here to assess day traders' risk attitudes.

2.2 Behavioral Biases

Classical finance theory was built upon the efficient market hypothesis (Zahera & Bansal, 2018), stating that markets are efficient and that the share price of a stock incorporates every piece of information available. The theories often mention the rationality of investors' decision-making. Even though classical finance theory was often successfully used to answer financial questions, the anomalies in the stock market remained unanswered. Potential answers to these anomalies were found in the 1980's, when researchers started investigating the psychology of market participants. These investigations resulted in a new area of finance literature; behavioral finance. Over the years behavioral finance has given many reasons to explain behavioral changes in investors and traders that would make them deviate from rational decision-making. One important study came from Thaler (1980), declaring that the irrational behavior and suboptimal decision-making of investors could be explained by the influence of behavioral biases. With more than 17 behavioral biases impacting financial decision-making, some biases were indicated more influential than others. Mittal (2022) managed a comprehensive research on the existing literature about behavioral biases and investment decisions, developing a framework by analyzing the most common behavioral biases in investment decision-making based on the behavioral finance literature. The study reviewed five decades worth of behavioral finance and researched 39 papers, identifying the three most dominant behavioral biases;

1. Overconfidence
2. Herd behavior
3. Disposition effect

2.2.1 Overconfidence

Overconfidence refers to an individual's tendency to overestimate their abilities or knowledge, and is expected to increase financial risk tolerance among day traders. This behavioral bias manifests itself in several ways. Traders may overestimate their ability to access information before others (Hirshleifer et al., 1994) or the accuracy of their information (Wang, 1998; Odean, 1998b). Additionally, overconfidence may lead traders to underestimate market risks (De Long et al., 1991). This inflated confidence in their financial judgments fosters a belief that their predictions are superior to other traders. This results in traders trying to anticipate price movements and assuming they have exclusive knowledge (Odean, 1998b). Consequently, these perceptions of superior knowledge encourage traders to enter the markets with larger or riskier positions, elevating their willingness to accept financial uncertainty.

2.2.2 Herd behavior

Herd behavior, described as replicating the actions of a larger group without independent evaluation, often disregarding personal information and estimations (Salamouris & Muradoglu, 2010), is anticipated to increase financial risk tolerance among day traders. This behavioral bias stems from a desire for social conformity or fear of reputational loss. It manifests as buying or selling financial instruments based on other's actions, driven by a fear of missing out on potential gains. Research indicates that herd behavior is prevalent in financial institutions. Grinblatt et al. (1995) demonstrated that mutual funds frequently adopt herd-like strategies, purchasing stocks with recent positive returns, and Wermers (1999) observed significant herding among mutual funds, potentially due to reputational concerns. Day traders, which are among individual investors, show more significant herd behavior than institutional investors (Goodfellow et al., 2009), as traders prioritize group consensus over personal analysis, often entering positions at suboptimal prices. This reliance on external cues results in lower risk-to-reward ratios, heightened exposure to market corrections, and increased risk-taking, while hindering the development of independent assessment skills.

2.2.3 Disposition effect

The disposition effect, characterized by investor's tendency to sell winning positions prematurely while holding losing positions for too long, is expected to exert varying effects on financial risk tolerance among day traders depending on their actions. Ben-David & Doukas (2006) suggest that traders interpret favorable signals, such as price increases, as a confirmation of their beliefs, leading to early exits from profitable positions. Unfavorable signals, such as price declines, are dismissed and viewed as market misjudgments, a behavior partly attributed to overestimation of private information accuracy (Gervais & Odean, 2001). Prematurely selling winning positions reflects risk-averse behavior, reducing financial risk tolerance. As traders exit their positions early to secure unrealized profits due to the perceived risk of price reversals as prices approach their target valuation (Odean, 1998a). Conversely, holding losing positions for too long indicates risk-seeking behavior, increasing financial risk tolerance. The failure to realize losing positions exposes traders to prolonged risk. The denial of an incorrect trade decision and the belief that the market undervalues the asset create hope for a market reversal (Tversky & Kahneman, 1974). Odean (1998a) further noted that retail traders, including day traders, prefer closing winning positions over realizing losses, with performance deteriorating as trading frequency increases.

2.3 Emotions

Decision-making operates through two parallel yet distinct processes (Buck, 1999). The first process is rapid and mostly depends on non-conscious mechanisms and pattern recognition. This enables swift decision-making without deliberate thought. The second process is slower and involves conscious analysis of the decision. It weighs the pro's and con's of a decision alongside alternative options. Most of our decision-making is done by

the first system. The second system, with conscious analysis, is engaged less frequently and mainly used when encountering entirely new situations (Bargh et al., 1996). This preference stems from the brain's limited processing capacity and its inability to evaluate every possible outcome (Martelli, 2017). Within a fast-paced high stressful environment like day trading, and the amount of decisions that a trader has to make, system one is expected to be used predominantly. To navigate these decisions, traders use emotions as cognitive shortcuts, which provide a convenient summary of memories, cognitions and experiences (Finucane et al., 2000). These automatic emotional responses, that have the ability to override complex decision-making capabilities, are often triggered by the amygdala, a part of the brain critical for emotional processing (Camerer et al., 2004). The amygdala plays a significant role in emotional processing, especially in stimuli related to danger and threat, where it manifests itself in emotions like fear or anger (Adolphs, 2002). It activates cognitive resources like memories to recognize patterns and resolve the uncertainty found in particular environments (Adolphs, 2002; Phelps & LeDoux, 2005). The environment of a day trader is extremely risky, uncertain and full of danger and potential threats. Therefore, we can presume that the amygdala will be frequently activated and that fear and anger are used to guide traders during uncertain environments. Consequently, it is expected that these emotions play a significant role in traders' financial decision-making (Lo et al., 2005), serving as a critical determinant of financial risk tolerance.

More reasons for the relevancy of fear, anger and greed is found in this study's conceptualization of financial risk tolerance. The spectrum of financial risk tolerance ranges from low to high and provides a framework for capturing the diverse effects of certain emotions. According to Lerner & Keltner (2001), specific emotions correspond to different parts of this spectrum, some of which encourage risk-averse behavior and others which encourage risk-seeking behavior. Fear is at the low-tolerance end of the spectrum because it induces risk-averse decisions and is characterized by pessimistic risk assessments. Anger and greed, on the other hand, encourage risk-seeking behavior and optimistic risk assessments, positioning people on the high-tolerance part of the spectrum. While Lerner & Keltner (2001) primarily examined fear and anger during their analysis on risk tolerance, greed is included in this study due to its relevance in monetary context. Greed is shown to drive irrational decision-making by prioritizing financial gains over risk considerations (Simon 1955; Hoyer et al., 2021), and therefore complements the framework. Together, the emotions, fear, anger and greed offer a comprehensive framework of emotions capable of covering the whole spectrum of financial risk tolerance.

2.3.1 Fear

Fear, arising from uncertainty and a sense of situational control (Slovic, 1987; Lerner & Keltner, 2001), is anticipated to decrease financial risk tolerance among day traders by signalling potential financial losses. Across new situations, fearful people will perceive greater risk (Lerner & Keltner, 2000). Fear, signalling a potential harm, prompts traders to question the validity of their original analysis, even when supported by prior evaluations (Lerner & Keltner, 2001). Fear induces risk averse behavior and pessimistic risk assessments, manifesting as reduced positions sizes, premature trade exits or hesitation to enter trades, all of which reflect a diminished willingness to accept financial uncertainty (Lerner & Keltner, 2001).

2.3.2 Anger

Anger, characterized by certainty and a sense of individual control (Smith & Ellsworth, 1985; Slovic, 1987), is anticipated to disrupt trading discipline and increase financial risk tolerance among day traders. This emotion is often triggered by irritation or frustration due to personal trading failures or perceived injustices. It has the ability to prompt impulsive actions such as revenge trading, where traders continuously increase risk to recover recently made trading losses. Lerner & Keltner (2001) demonstrate that anger induces risk-seeking behavior and optimistic risk estimates, encouraging traders to take on more or larger positions. Anger-driven actions include accepting suboptimal trade setups and prioritizing short-term gains over long-term consequences (Gray, 1999). Anger sometimes even leads traders to gamble for a chance to break even, rather than accepting the outcome of

a failed trade (Kahneman & Tversky, 2013). These actions all result in more risk exposure and an increased willingness to accept financial uncertainty.

2.3.3 Greed

Greed, reflecting an insatiable desire for more and characterized by dissatisfaction with current possessions (Seuntjes, et al., 2015), is anticipated to increase financial risk tolerance among day traders by driving acquisitive behavior without the regard for associated risks (Hoyer et al., 2021). Unlike rational maximization, which balances costs and benefits (Simon, 1955), greed motivates excessive leverage or prolonged holding of positions to maximize profits despite potential costs. This eagerness to amass monetary gains shifts trader's focus from executing trades in the best possible way, to prioritizing potential profits, fostering irrational decision-making (Simon, 1955). Consequently overtrading and excessive leverage that comes with greed, delays profit-taking and increases position size, thereby elevating traders' willingness to accept financial uncertainty.

2.4 Emotional Regulation

Emotional responses are often able to guide us through a variety of different circumstances (Tooby & Cosmides, 1990). However, our emotional responses are also capable of incorrectly guiding us. This happens when our current situation is seriously different from those that formed our emotions over the last millennia (Gross, 1999). During these situations the emotional responses can be harmful to our decision-making. When a mismatch like this happens, it is best to try and regulate our emotional responses in order to align them with our objective. The topic of emotional regulation made its first appearance in the early 1980's and has since then gathered increasing attention from various scientific fields (Gross, 1999).

Emotional regulation is used as a process to moderate the impact of emotions and biases on trading decisions through proactive and reactive strategies (Gross, 2002). It is expected to regulate both the risk-increasing and risk-decreasing effects of behavioral biases and emotions on financial risk tolerance among day traders. Fenton-O'Creevy et al. (2011) emphasize that effective emotional regulation rather than the absence of emotions, enhances decision-making performance. Traders who identify emotions early demonstrate improved outcomes mediated by regulation strategies (Seo & Barrett, 2007). Gross (2002) distinguishes two different emotional regulation strategies. First off, antecedent-focused strategies, which are termed "reappraisal strategies" in this study. These antecedent-focused strategies include; situation selection, situation modification, attentional deployment and cognitive change and assist in managing emotions before they fully manifest. Secondly, response-focused strategies, labeled "suppression strategies", involve response modulation, and are used to address emotions after they are triggered. Reappraisal strategies are more effective, enabling traders to analyze situations proactively with affective cues, conserving cognitive resources and improving decision-making clarity. The response-focused strategies, however, are less effective due to limited situational analysis opportunities (Fenton-O'Creevy et al., 2011). By identifying and managing biases and emotions early, traders are likely to exhibit a more balanced risk tolerance, with emotional regulation anticipated to strengthen with trading experience, recognized by years in the market (Fenton-O'Creevy et al., 2011).

2.4.1 Reappraisal Strategies

Reappraisal encompasses proactive strategies to manage emotions and biases before they fully manifest, comprising four specific approaches;

2.4.1.1 Situation Selection

Traders choose to avoid or engage with certain places, people or things to regulate emotions or biases. For instance, a trader may avoid trading group chats or major financial data releases to minimize stress-induced biases or emotions.

2.4.1.2 Situation Modification

Once a situation has been selected and a bias or emotion is about to become a problem, traders can alter the situation to reduce their impact. For example, exiting the trading charts or leaving their trading setup when a bias or emotion is about to impact their trading.

2.4.1.3 Attentional Deployment

Traders can focus on specific elements within a situation to distract themselves in order to prevent a bias or emotion from triggering. For instance, focusing attention on an idea on how to recoup a previous loss instead of dwelling on the loss itself.

2.4.1.4 Cognitive change

This involves reframing a situation or experience to alter its emotional or biased impact. For example, interpreting a trading loss as a valuable lesson to foster long-term growth and reduce negative impacts.

2.4.2 Suppression Strategy

Suppression involves managing emotions after they have been triggered, comprising one approach;

2.4.2.1 Response Modulation

This entails reducing expressive behavior to influence emotional or biasing response post-activation. For instance, hiding or suppressing anger after consecutive losses in order to maintain composure and avoid impulsive decisions.

2.5 Theoretical Framework

This framework, as illustrated in Figure 2.1, outlines the expected relationships between behavioral biases, emotions, emotional regulation, and financial risk tolerance among individual day traders. The framework serves as the foundation of the research.

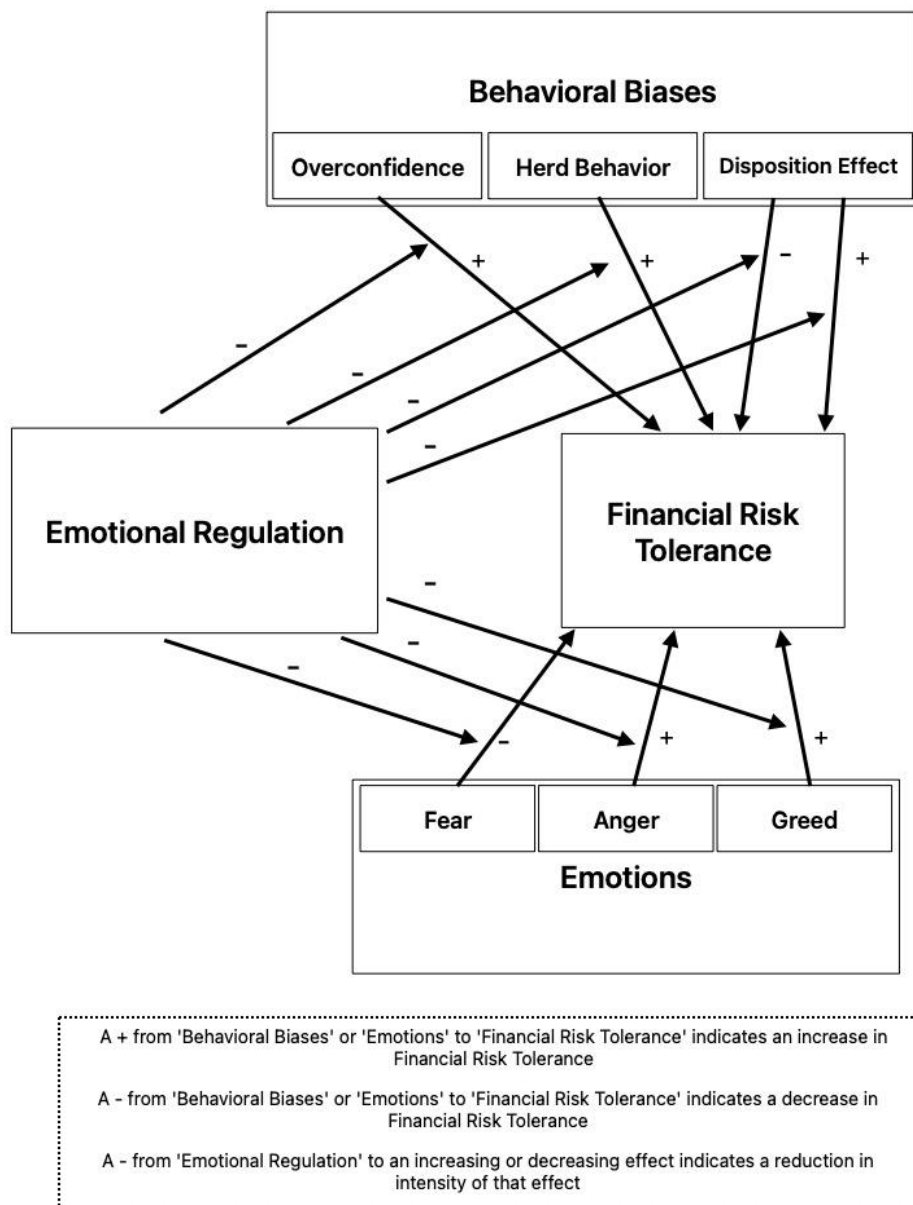


Figure 2.1: The initial theoretical framework

3. Methodology

This chapter outlines the methodological framework used to examine how behavioral biases, emotions, and emotional regulation affect individual day traders' financial risk tolerance. In order to ensure alignment with the study's exploratory objectives, it provides specifics about the research design, data collection methods, sampling strategy and data analysis approach.

3.1 Research Design

This study adopts a qualitative research method to investigate how behavioral biases, emotions and emotional regulation affect individual day traders' financial risk tolerance. Since different people possess distinct experiences and perceptions, complex phenomena like emotions and biases can be examined in depth using qualitative methods (Teovanović et al., 2015; Lange et al., 2022; Berthet., 2021). This research employed semi-structured interviews to gather detailed information about traders' viewpoints, revealing patterns and connections between the variables under investigation (Vaismoradi et al., 2013).

Given the limited literature on individual day traders, an exploratory approach was used to address this research gap. The use of semi-structured interviews enabled open-ended responses, allowed participants to express their experiences, while also guaranteeing that predetermined topics were covered. This approach is well-suited to the objectives of the study since it promotes a comprehensive understanding of the cognitive and affective processes influencing financial risk tolerance.

3.2 Data collection

In-depth semi-structured interviews were used to collect the data in order to maintain a balance between structured direction and exploratory flexibility. This approach enables researchers to collect primary data from participants providing authentic and reliable insights (Kvale & Brinkmann, 2009). While unstructured interviews run the risk of leaving out important topics (St. John et al., 2014; Drury et al., 2011), and structured interviews lack depth because of rigid questioning (Guest et al., 2013), semi-structured interviews combine pre selected topics with the flexibility to modify question order and pacing based on participants' responses (Young et al., 2018).

In order to ensure that participants' opinions are respected, the interviews were conducted in a private online environment with their informed consent. The participants were selected based on their classification as an individual day trader who trades independently without external assistance. Eligibility requirements included fluency in English to enable communication, no restrictions on age, ethnicity or trading profitability, since both profitable and non-profitable traders may offer insightful information. In order to answer the research questions about behavioral biases, emotions, emotional regulation and financial risk tolerance, these requirements provided the study with relevant participants and detailed information.

The dependent variable, financial risk tolerance, was not measured in clear numbers. It was not captured based on a certain score or percentage risk on a particular trade. Instead it was captured by the way that the interview participants described, explained and reflected on their comfort in risk taking when making financial decisions in relation to their emotions or biases. Instead of assigning a score to 'financial risk tolerance', this study assessed the nature and quality of the participants' financial risk tolerance.

3.3 Sampling strategy

To select participants who align with the study's objectives, the sampling strategy used purposive sampling, a non-probability method (Alvi, 2016; Palinkas et al., 2015). By guaranteeing a homogeneous sample of individual day traders, this method lowered variance and made it easier to identify important patterns, which increases the findings' credibility (Andrade, 2021). The criteria were sufficiently flexible to support timely recruitment within time and budget constraints, while still being specifically defined to target this particular group (Kristensen & Ravn, 2015; Price et al., 2020). The sample consisted of 11 male day traders. Their experience ranged from one to seven years and were drawn from two discord communities. Both of these communities focus on educating day traders. One group primarily focused on forex trading, and the other on indices, like the NASDAQ and S&P 500.

Recruitment involved direct outreach to the founders of these discord communities. With permission from the founders of the communities, members were individually contacted and invited to participate in the interviews. As both monetary and non-monetary incentives have been demonstrated to increase participation rates, they were used in combination to address the motivational issues related to voluntary, one-hour interviews (Kelly et al., 2017; Ferguson & Wynne, 2021). Additionally, highlighting the potential benefits from the study's findings, such as insights on how to control emotions and biases when trading, further promoted participation.

Purposive sampling ensures high data quality by selecting participants who are directly relevant to the research questions (Zickar & Keith, 2022). Since participants were chosen and evaluated using uniform criteria, identical instruments, and a shortened time frame, the sample's homogeneity minimize confounding variables and reduced threats like history and maturation (Finger & Rand, 2003; Taylor, 2005; Taylor & Asmundson, 2008). However, the external validity is limited, as the results are unique to the subpopulation of individual day traders and cannot be generalized to a broader population.

3.4 Data Analysis

Data analysis employed a thematic analysis approach, utilizing the Atlas.ti software to facilitate the coding process. The coding scheme is displayed in Figure 3.1. The full interview transcripts were used as raw data, later utilized to identify common and relevant statements through open coding. These statements formed the basis for the codes and were subsequently refined throughout the process. Categories of code emerged from both the interviews and constructs identified in the literature review. Together they formed the relevant themes and were used to answer the research questions. The coding process was therefore inductive and theoretical. This hybrid approach allows the themes to be reflected by participants' experiences but still remain grounded in established academic frameworks.

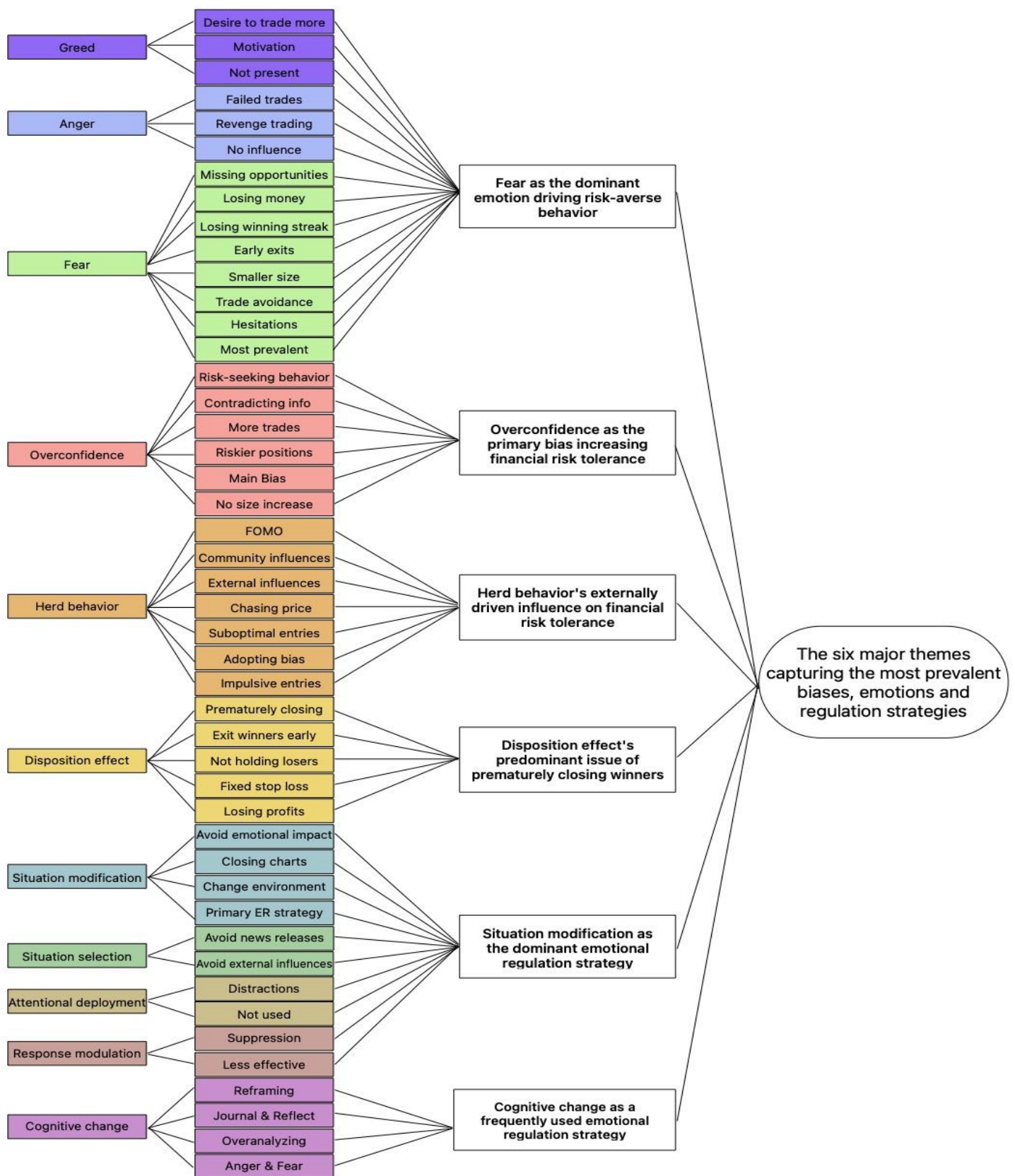


Figure 3.1: Coding Scheme

4. Findings

This section outlines the results from the semi-structured interviews conducted with 11 individual day traders. The findings show how behavioral biases, emotions and emotional regulation influenced day traders' financial risk tolerance. From the qualitative analysis emerged six major themes which capture the most frequently reported biases, emotions and regulation strategies and their effects on financial risk tolerance. Each theme is supported by specific aspects of the variables and the number of participants that expressed their significance, indicating its strength.

4.1 Fear as the dominant emotion driving risk-averse behavior

Among the emotions fear, anger and greed, fear was identified as the most prevalent emotion. All 11 participants acknowledged fear in their trading with 9 participants reporting it was their most prominent emotion. When asked about possible dominant emotions influencing their financial risk tolerance it was regularly stated and sometimes even without hesitation or thought, that fear had by far the most influence on them. The risk-seeking behavior of greed, driven by the pursuit of potential monetary gains, would typically suggest a willingness or even eagerness to put on a trade. Without putting on a trade, the potential for profits is non-existent. It seems that the traders would rather avoid losses to their trading capital than have the potential for increasing their capital. The reason for fear being more present than anger was mostly because almost all traders had an acute awareness of when anger was likely to impair their trading decisions. They mentioned that anger often originated from failed trades and a willingness to make back the money lost from these trades. Unlike fear and greed, which typically emerged before the trade(s), anger was generally not triggered until after the trade. Nearly all of the traders established rules that forced them to stop trading after a predetermined amount of trades or losses, with some halting their trading after a single trade. This mitigated revenge trading, thereby limiting anger's impact and the willingness to try and make back their losses. Both the less-experienced and more experienced traders still felt anger, but through the rules they set in place, anger had less chance to reveal itself.

Fear was for the most part expressed as a fear of making incorrect decisions or incurring financial losses. This emotion manifested in premature trade exits, hesitations and complete trade avoidance. Traders described experiences where fear would lead them to deviate from their original trading plan through adjusting their stop-loss to break-even levels too quickly or exit positions prematurely in order to mitigate the risk of further financial loss. Participants frequently expressed how fear led to adjusting their stop-loss to avoid a losing trade, with one trader noting; *"When price is moving in profit and it moves back, [...] I want to place my stop-loss to break even."* While another exited his position too soon and before his stop-loss was reached, stating he would; *"Exit too soon because I would be scared to take the loss again, [...] I just took the loss because I was afraid that it would indeed take my stop-loss."*

Other traders experienced fear more before even putting on a trade, which again would lead them to change their original trading plan through hesitations to take the trade setup or sometimes avoid trading at all. A trader noted that; *"In some cases it would make it that I wouldn't even take the position at all [...] just because of fear of maybe losing, again, I would just not take the trade at all."* Fear also prevented trade entries because of monetary concerns, as one trader expressed; *"The fear of losing a certain dollar amount is what overcomes you. So it's just me not being able to put that risk on."*

The urge to exit positions early, hesitations to take a trade and trade avoidance reflect risk-averse behavior. When experiencing fear, traders prioritized minimizing losses over pursuing potential gains, indicating a reduced willingness to accept uncertainty and therefore a decrease in financial risk tolerance.

4.2 Overconfidence as the primary bias increasing financial risk tolerance

Out of the three biases, overconfidence, herd behavior and the disposition effect, overconfidence was reported to be the primary bias influencing financial risk tolerance. Almost all of the participants acknowledged overconfidence in their trading with 9 participants citing overconfidence as the most prevalent bias increasing their financial risk tolerance. Some traders expressed reasons as to why overconfidence was the main bias over herd behavior, mentioning they try to reduce their herd behavior by trading independently first, before consulting the trading community or social media platforms. Others mentioned that overconfidence was more prominent than the disposition effect, as most of the time they employed predefined take profit and stop-loss orders, making sure they get out of the trades at fixed price levels. The self-imposed rules regulated the occurrence of herd behavior and disposition effect more compared to overconfidence. Overconfidence persisted as a significant influence, even after years of trading experience. A number of participants stated that they had trouble regulating overconfidence, often recognizing its impact only after it had already manifested. One trader even mentioned that you have to take advantage of such confidence because *“it's going good and I'm going to keep riding it out until it stops”*.

The way overconfidence increased financial risk tolerance was predominantly caused by risk-seeking behavior such as increasing trade frequency and ignoring contradicting information. Participants described that the overconfidence was often triggered by winning streaks, with one trader stating; *“Because I have three winning trades in a row, [...] I force a trade, I think I already know what's going to happen”* and another mentioning, *“I felt like everything, I cracked the code, [...] that was the moment I felt like everything was in my control.”* This overconfidence fostered a sense of invulnerability where they believed every trade would result in a win. If they noticed that they were *“on a heater”*, they would take more trades than usual. Sometimes, winning streaks amounting for several weeks resulted in a level of overconfidence lasting a similar amount of time, with one participant noting; *“So I've had good weeks and then they were most of the time followed by pretty bad weeks because I think I was a bit, how do you say it, over overly confident about what I know about the market.”*

Others reported that overconfidence leads them to ignore information that contradicts with their own personal analysis, with one participant stating; *“Well, I think there are moments where you think you are certain about what's going to happen. So you ignore any alert or any detail that normally made you question if the price is doing what you want to see.”* The information that would normally be seen as questionable and opposing would now be ignored because of the unwavering belief in their analysis. At times, this unwavering belief induced the inability to switch direction, even after being proved wrong. One trader described it as; *“My overconfidence has definitely led me to marry an idea or stick with an idea”*, which caused him to; *“Not allowing myself to take a different decision [...] or a different path of analysis.”* Ignoring information that contradicted their analysis led to bearing less importance to the financial risks involved with the trade.

Overconfidence led to a variety of risk-seeking behavior and an inflated belief in predictive ability. The increase in trade frequency and ignoring contradicting information both highlight risk-seeking behavior indicating a willingness to accept uncertainty and therefore an increased financial risk tolerance.

4.3 Herd behavior's externally-driven influence on financial risk tolerance

Despite not being the main bias influencing traders, herd behavior emerged as a significant theme, with 7 participants recognizing its impact on distorting risk management and raising their financial risk tolerance. As previously stated, traders attempted to mitigate herd behavior by trading independently first, before engaging with trading communities or other external influences. This approach was partially effective, as traders reported a reduction over time in their tendency to actively seek for validation and group consensus. However, even after they would establish their own analysis or enter trades, external analysis would still influence them. Other traders would make them doubt their current positions or analysis leading them to occasionally alter their trade idea or directional bias. This shift was sometimes driven by an authoritative figure expressing a different

analysis. Other times, the trader felt his analysis discredited because it was not in alignment with a larger group of traders, even though his own analysis might have been correct.

The decision to switch their trade idea or directional bias would often be made quickly in order to not miss potential price movements, with one trader stating; *"You just see all these people in the position, so you just decide to enter in just because, just like a market order just to get in."* Making these decisions rapidly often resulted in entries at suboptimal price levels. Traders attributed these actions to a fear of missing out (FOMO), which drove their willingness to accept more financial uncertainty, as one noted; *"I think I found myself buying at a high point when the train had already left, [...] at the end of the day, it was like we were really just buying at the top."*

They also explained how the overriding of personal analysis caused a distortion in risk management through sentimental attachment; *"So in these instances, I think when I'm being carried away by an external idea or opinion, I think I tend to ignore the risk management a bit more, [...] when I'm taking an idea from a group or I'm being influenced by a group or by a person that I respect, I'm more prone to having a sentimental attachment to the idea."* Some even mentioned that external influences and opinions of respected people drove them to simply copy trade ideas sometimes even without regard to the reason behind the trade, with one trader stating; *"If you see people catching these winning trades or posting their profits, you sort of think, where am i going wrong, [...] and then you end up copying that because you think that their idea might be better than yours"*, and another stating; *"I've seen myself into trades that probably I wouldn't have taken if it wasn't because someone just said so."*

Herd behavior through FOMO, overriding personal analysis and copying trade ideas of others, highlight the willingness to accept uncertainty. The urge to not miss out on market movements and the need for group consensus is great enough to seek out more risk, increasing financial risk tolerance.

4.4 Disposition effect's predominant issue of prematurely closing winners

The disposition effect was acknowledged by 7 participants as a significant bias, though only one aspect of the disposition effect was said to notably influence their financial risk tolerance. Specifically, traders highlighted the side of closing winning trades too early, mentioning the difficulty of holding their positions until reaching their predetermined take profit targets. Many referred to the movements of the markets, which were not always a smooth ride up or down. When price moved favorably it was easy to hold on to winning positions, but as soon as unfavorable retracements happened, yet completely normal, they decided to get out. All 7 traders noted that most of the time, had they not interfered with their position and closed prematurely, that their original take profit target would have been hit, with one trader stating; *"So say you put a take profit and your stop-loss, [...] It hits a certain point where you're like, let's say it hits 1.5 R and then you just start seeing a pullback and then it makes you hesitant and then you end up closing the trade, but it's just a retracement, whatever. And then it ends up going to your take profit, to your original take profit. And then that's when it's like, why did I do that? What was the point of me closing that entry just because I was scared?"*

Some even stated that the regret associated with prematurely closing hurt more than the regret experienced from a losing trade. The decision to close a winning position early was often instigated by a fear of losing unrealized profits, resulting in risk-averse behavior; *"Most of the time a trade doesn't go to your take profit in one go, it goes in waves or it goes up, it goes down, [...] when you're in a buy and the moment it goes up, you feel good, but the moment it pulls back, you have the feeling, well, I want to get out of the trade now because I don't want to lose the profits I already saw."*

Conversely, the second aspect of the disposition effect, holding on to losing positions for too long, was only reported by 2 participants. While almost all of the traders acknowledged engaging in this behavior early in their trading career, most of them stated that they could not recall the last instance of doing so, for example; *"Yeah,*

that's something I never do. My invalidation levels are my invalidation levels. I don't have a bad habit of holding losers, [...] I used to do that, but not anymore. Not for a long time have I held a stop-loss.”. Most of the participants stated that they had a predefined stop-loss or invalidation point, which, when triggered, signalled that their trade idea was incorrect, with one noting; *“Well, in my 60 trades, I've never removed my stop-loss. So the predefined point where I set my stop-loss, I always let it hit. So yeah, it's predefined.”* While some traders mentioned holding on to losers for longer than expected, they never let trades run past their stop-loss; *“I force myself to have stops on every trade. So it's either really, it's however long it takes for it to hit my stop-loss, you know what I mean? So I would say I don't really hold losers for too long.”* They had no reason to hold to a trade past its invalidation point as this would probably only validate an opposing trade idea.

Prematurely closing winning positions through a fear of losing unrealized profits, was the predominant issue of the disposition effect, where holding on to losers past invalidation points was almost never the case. Closing these winning positions early shows a reduced willingness to accept uncertainty and therefore a decrease in financial risk tolerance.

4.5 Situation modification as the dominant emotional regulation strategy

Out of situation selection, situation modification, attentional deployment, cognitive change and response modulation, situation modification was the most used emotional regulation strategy to reduce the effects of biases and emotions on financial risk tolerance. It was acknowledged by all 11 participants, with 5 participants specifically stating it as their primary emotional regulation strategy. There was no specific bias or emotion that got more regulated than others. Even though situation selection was not as prevalent as situation modification, some traders emphasized the necessity of avoiding certain situations in trading, particularly high volatility news announcements. Avoiding news was only important during the release, with trading considered viable before or after these events. Participants also preferred to avoid things like trading communities and social media to limit external influences, though, as stated in the third theme, this would not always work. Conversely, other traders argued that they did not see the benefit of completely avoiding situations or trading days, as it could result in missing potential profitable opportunities. Attentional deployment and response modulation were both employed less frequently, primarily because other strategies like situation modification were preferred. Attentional deployment, if used, was mostly done through distractions like watching a video or playing a game, to avoid interfering with trades. Response modulation was generally perceived as less effective compared to other strategies, either because of its inability to fully mitigate emotional or biased responses or because of its inconsistent results.

Situation modification was achieved by altering the situations that traders would find themselves in. These situations were altered as soon as traders recognized that a bias or emotion was likely to affect their trading decisions, with one trader noting; *“If i am emotional, i can't think rational, it shuts down that part, [...] I get off the chart, calm down my emotions, and then maybe get back to the charts.”* This strategy was often complemented with disciplinary rules to cease trading after a predetermined amount of losses or trades. Some participants described their use of situation modification in terms of closing their trading charts to disengage from the trading environment to mitigate any emotional interference; *“Because price would be choppy or almost go against you and almost to your stop-loss. It could get tricky if you're behind the screen and you get a little sweaty thinking you would win or you would lose the trade. And if you just walk away [...] you come back to the screen after half an hour or maybe longer, you would just look at your screen and see that it went to your take profit.”* There was a frequently mentioned emotional awareness, often based off experiences and memories; *“If I take two losers and I am angry, then the only thing that I am telling myself in a roundabout way is that I need to get off the chart because no good decisions come from anger, [...] whenever I'm angry and I understand right away, I'm not fit to make any sort of financial decisions based on the fact that I'm approaching it from a position of anger or resentment.”*

While others traders cited that closing the charts alone was not enough and that stepping away from their setup completely and changing their environment was a better form of situation modification, with one noting; *“I'm really starting to feel some sort of way, and I can feel any kind of emotion coming on. I think what I do is I do step outside and I go for a walk. I think that that's the best remedy, especially because I don't take my phone with me, I leave my phone and my laptop or my trading station, and I just go out, I go for a walk.”* Traders stated that closing the charts was beneficial, but there was still a way for them to get back onto their trading setup if the impulse arose, therefore, completely removing themselves from the situation was a better option; *“Something I usually need to do is I just step away and go focus on something completely non-computer related. Because if I can be a click away from opening tradingview at any moment, that could create a process in which it can be disastrous. It doesn't take much because if you give in once, then you might give in again, giving in again might be opening up, logging into your broker, then giving in again might be setting up a position tool to see how much risk you could have or what the risk to reward is. And then it could snowball into a bad decision, which is taking a trade outside your model.”* Some participants indicated that the best way for them to alter the situation was to completely remove themselves from their setup and focus on non-trading related activities.

All participants acknowledged the use of situation modification through either closing the charts or completely stepping away from their trading environment. This highlights the individual day traders' use of altering a situation when a bias or emotion is about to affect their trading decisions.

4.6 Cognitive change as a frequently used emotional regulation strategy

Cognitive change was the second most utilized emotional regulation strategy after situation modification, used by 9 out of 11 participants to regulate the effect of biases and emotions on financial risk tolerance. Out of all the biases and emotions it regulated the effect of anger (reported by 4 participants) and fear (reported by 3 participants) the most. This strategy involved analyzing trades through journaling and reflecting in order to reframe mistakes or invalid trades as valuable learning opportunities, for example; *“Most of the times I already know what I did wrong, or I think I know what I did wrong [...] I try to look for technical and emotional errors. I recapped that. I put it in actionable things, and yeah, then it gives me closure.”* Traders mentioned different ways of journaling their trades, ranging from writing brief summaries of daily successes and shortcomings to completely analyzing every single trade, scrutinizing the slightest inaccuracies in their trading model. Some traders considered analyzing every variable to be the most effective way of journaling and reflecting on their trades, as one noted; *“When I have placed 30 trades, I can analyse that batch. And in those 30 trades obviously are trades that were losses. And I also note my missed trades, [...] in every loss is a lesson that may sound cliché, but it's true in every loss. It can be something that may not have been wrong, but you can improve it. So it may fit in your plan, but if that certain error that you made that fit in your plan that's frequently made, then it's something you can improve.”*

Others noted that; *“sometimes a loss is just a loss and there's nothing you can do about it”*, cautioning that excessive analysis of every trading detail could lead to overanalyzing. Cognitive change through reframing was executed through validating losing trades. When a losing trade was in hindsight a trade that fit the model perfectly, traders were more than happy to take the loss, finding no reason for frustration or fear of a potential ineffective trading model; *“You don't want to overanalyze every single thing that you do just to try and see the positive side of it. Sometimes there are negative trades, and that's just the way they are.”* In their mind, such a loss was inherently part of the expected percentage of unsuccessful trades and that there was no way to avoid it; *“I have losses and I'm obviously maybe sad or obviously not happy, just one of the things that I do to just change that mood away is to just check my journal, see that over time I'm following my plan that the statistically everything's going okay, even though I just took a loss, everything's going to be okay when it comes to my statistics.”*

Both sides of journaling and reflecting were said to aid the reframing of mistakes and regulate the effect that biases and emotions have on financial risk tolerance. Not all participants used journaling and reflection to reframe trading losses, though, it was still a significant emotional regulation strategy. It shows the need to highlight and learn from mistakes and the importance of reframing situations to alter the impact of emotions and biases.

4.7 Revised theoretical framework

The initial theoretical framework, with the identified themes from the literature review, was illustrated in chapter 2.5. After analyzing the empirical data, a revised theoretical framework was developed (Figure 4.1). This theoretical framework will be discussed in chapter 5.

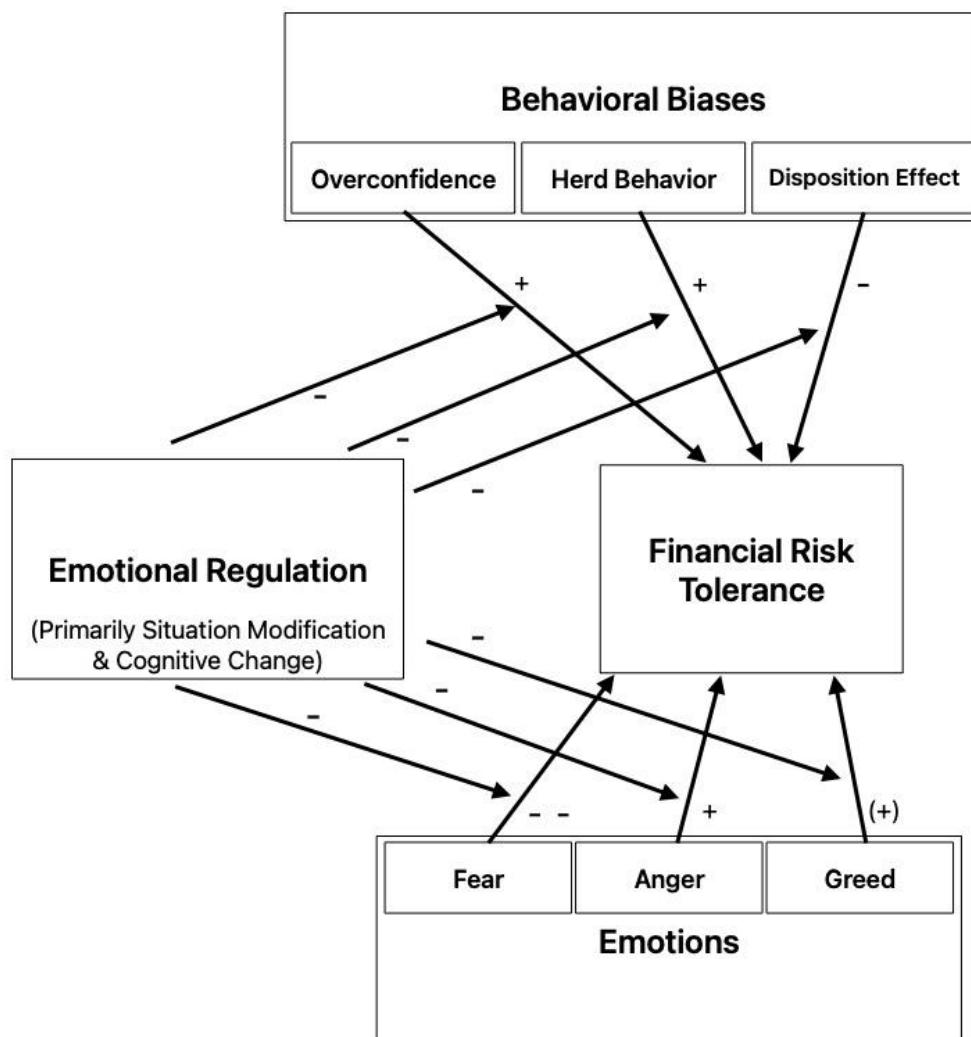


Figure 4.1: Revised theoretical framework

5. Discussion and Conclusion

This section interprets the findings from the qualitative analysis of the semi-structured interviews. By combining the results with the theoretical framework developed in the literature review, the discussion clarifies the significance of the results, the limitations of the study and potential avenues for future research.

5.1 Summary of key findings

This study addressed the research question; “How do behavioral biases and emotions influence the financial risk tolerance of individual day traders, and how does emotional regulation moderate these relationships?”. The results identified six major themes from the data. The most prevalent emotion was fear, which decreased financial risk tolerance by encouraging risk-averse behavior through early trade exits, hesitations and trade avoidance. The main behavioral bias was found to be overconfidence, which increased financial risk tolerance by encouraging risk-seeking behavior through an increase in trade frequency and ignoring contradicting information. Herd behavior increased financial risk tolerance through externally-driven influences leading to overriding personal analysis and instigating a fear of missing out (FOMO). The disposition effect mainly reduced financial risk tolerance by prompting early exits from winning positions through a fear of losing unrealized profits. Emotional regulation strategies, most notably situation modification and cognitive change, were used to mitigate the effects of biases and emotions on financial risk tolerance. Situation modification was mostly used through closing trading charts or completely stepping away and changing their environment. Cognitive change was mostly practiced through journaling and reflecting or reframing of losing trades.

5.2 Interpretations

The results complement and add to the behavior finance literature by providing nuanced insights into the psychological processes influencing the financial risk tolerance of individual day traders. The prevalence of fear, which all participants noted as the cause of risk-averse behavior, supports Lerner & Keltner (2001) claim that fear, rooted in uncertainty, causes pessimistic risk assessments. This risk aversion, exhibited by early trade exits, hesitations and trade avoidance, highlights an increased sensitivity to potential financial losses. This sensitivity is possibly intensified by the absence of institutional safety nets (Section 1.1), and the high-stakes solitary environment that individual day traders find themselves in.

The predominance of fear, observed across all experience levels, leads to a greater impact on financial risk tolerance compared to the less prevalent emotions of anger and greed. This dominance suggests that loss-aversion is a more critical factor for traders than the pursuit of monetary gains. The pain of a loss outweighs the feeling of satisfaction from a win. In contrast to fear, anger was primarily triggered after a trade, especially after a loss. Because so many traders had disciplinary rules to cease trading after a specific amount of trades or losses, anger had significantly less chance to get triggered, therefore diminishing its presence relative to fear. Furthermore, contrary to Seuntjes et al. (2015), greed was not simply characterized in a manner of insatiable desire for more and dissatisfaction with current possessions. It still resulted in risk-seeking behavior, though not as much as anticipated. Additionally, it was often viewed as a motivational factor driving improved performance. The experiences of anger and its impact on financial risk tolerance aligned closely with the findings of Lerner & Keltner (2001), Gray (1999) and Kahneman & Tversky (2013). Whenever traders did experience anger, they reported impulsive behavior, revenge trading and an increasingly risk-seeking behavior, which prioritized short term gains of long-term consequences.

Overconfidence being the primary bias influencing financial risk tolerance is in line with the framework of Mittal (2022), which identified overconfidence as the dominant bias in the literature on behavioral biases and investment decisions. Furthermore it is consistent with the findings of Odean (1998b), Wang (1998) and

Hirshleifer et al. (1994), that overconfident traders overestimate their predictive abilities and accuracy of gathered information. The participants noted an increase in risk exposure, however it is interesting to note that risk exposure was not manifested in an increased position sizing, but in an increase in trade frequency. Additionally, the propensity to ignore contradicting information aligns with De Long et al. (1991), who stated that overconfidence might lead to the underestimation of market risks.

Herd behavior's role in increasing financial risk tolerance through the externally-driven influences such as overriding personal analysis or a fear of missing out aligns with the portrayal of herding as a conformity driven bias (Salamouris & Muradoglu, 2010). With 7 participants acknowledging the externally-driven influences and their impact on their personal analysis, it closely aligns with Goodfellow et al. 's (2009) observation of greater herding among individual investors. In contrast to structured environments of professional traders, this social dimension, enabled by social media platforms such as discord, highlights the particular susceptibility of individual traders to external cues.

The disposition effect's main manifestation in prematurely closing winning positions partially supports the original dual risk effect highlighted in the literature review (Section 2.2.3). Although 2 out of 11 participants found themselves holding on to losing trades for too long, 7 out of 11 participants reported closing winning positions too early, emphasizing the disposition effects' risk-averse behavior compared to risk-seeking behavior. The results support the findings of Ben-David & Doukas (2006) and Odean (1998a) where favorable signals prompt early exits from profitable positions to secure unrealized profits due to a perceived risk of price reversals. However, the findings do not fully comply with the observation of Kahneman & Tversky (2013) and Odean (1998a) stating the unwillingness of traders to close losing positions.

The frequent use of situation modification (all participants) and cognitive change (9 participants) as emotional regulation strategies support the findings of the effectiveness of reappraisal strategies over suppression strategies (Fenton-O'Creevy et al., 2011). With situation modification through closing charts and changing environment and cognitive change through journaling, reflecting and reframing, these reappraisal strategies moderated the effects of biases and emotions. Situation modification did not regulate certain emotions or biases more than others, possibly indicating its usefulness in regulating every bias and emotion sufficiently. Cognitive change regulated the emotions anger and fear the most, where journaling, reflecting and reframing of trades lead to less frustration and more trust in their trading model. Both of these strategies enabled traders to maintain a balanced risk tolerance and were used across experience levels.

Surprisingly, only seven participants reported experiencing anger and its effects on risk-seeking behavior. The anger-driven impulsivity predicted by Lerner & Keltner (2001) was still very much present but significantly less instigated, probably due to traders' early situation modification through closing trading charts and changing their environment. Similarly, greed's influence was only noted by six participants and less strong than anticipated. Although making profit was noted to be important, concurring with Hoyer et al. (2021) and Simon (1955), it is secondary to loss aversion. Additionally, the little use of the other emotional regulation strategies, situation selection, attentional deployment and response modulation was unexpected. Especially the minimal use of situation selection and attentional deployment, as these strategies are both reappraisal strategies and thought to be used more often. The insignificant use of response-focused strategies aligns with the findings of Fenton-O'Creevy et al. (2011), with participants stating its inconsistent results and ineffectiveness.

5.3 Implications

The study directly addresses the gap in the literature noted in Section 1.1, which highlighted the lack of research on individual traders compared to professional traders. The results possibly show unique psychological patterns that are different from those seen in professional traders. The prevalence of fear as a motivator for risk-averse behavior, potentially highlights the lack of institutional support systems, including structured protocols, analytical resources and financial safety nets, which amplify loss aversion in individual day traders. This

contrasts with professional traders, who might use the institutional frameworks and managerial oversight to mitigate the emotional influences (Fenton-O’Creevy et al., 2011). The prominence of herd behavior and overconfidence as risk-seeking biases further shows the sensitivity of individual traders to behavioral biases and their reliance on personal resources and exposure to online trading communities (e.g., Discord communities). These results build upon the work of Goodfellow et al. (2009) and Odean (1999b) by showing that individual day traders make overconfident decisions and are more sensitive to external cues, probably as a result of their high-stakes and solitary trading environment. Furthermore, a new theoretical contribution is suggested by the study’s discovery of a possible feedback loop between biases (e.g., disposition effect) and emotions (e.g., fear). The interaction between emotions and behavioral biases suggests a possible interrelationship that future research should incorporate in behavioral finance models, particularly for non-institutional traders. By validating and extending on theories like Mittal (2022) and Lerner & Keltner (2001) this study calls attention to further exploration on how psychological factors influence financial risk tolerance in a retail-driven trading environment.

Besides theoretical implications the findings offer practical implications for individual day traders to enhance their financial decision-making and manage financial risk tolerance effectively. To begin, individual day traders should establish disciplinary trading rules, such as fixed stop-loss and take profit levels and a maximum trade frequency to mitigate risk-averse and risk-seeking behavior. For example, a fixed take profit or stop-loss reduces fear driven early exits and pausing trading after a set amount of trades will prevent overconfident trade frequency increases or anger-driven revenge trading. Furthermore, traders should make use of situation modification to manage their biased and emotional responses by altering their trading environment. For instance, closing trading setups and walking away from the setup during emotion-triggering moments (e.g., after taking a loss) can prevent impulsive decision-making. Additionally, to make use of cognitive change in the most optimal way, traders should keep a trading journal in order for them to reflect on their trades and when necessary, reframe emotional trades. Cognitive change through journalling can build confidence and reduce emotional responses. In order to reduce herd behavior, traders should focus on independent analysis first and limit their exposure to trading communities or social media during their active trading hours. Designating time to interact with communities after trading hours can prevent entering at suboptimal price levels due to FOMO and preserve risk management.

These practical strategies address the psychological barriers that individual traders face in their solitary trading environment. Traders can achieve a balanced risk tolerance and enhance financial decision-making by cultivating disciplined decisions and emotional regulation. The emphasis of emotional regulation complements the theory put forth by Fenton-O’Creevy et al. (2011) that effective regulation, not the absence of biases and emotions, enhances decision-making.

5.4 Limitations

Despite its contributions to the behavioral finance literature, this study has its limitations. The sample size of 11 participants indicates a small sample size and therefore limits the generalizability to a broader population. The sampling of traders from two discord communities may lead to missing the psychological dynamics of other social platforms. Furthermore, as all participants are male it restricts generalizability to female traders.

Additionally, the emphasis on fear, anger and greed leaves out other emotions which may also have an impact on financial risk tolerance. This decision is justified by the existing literature on these emotions, but it limits the emotional spectrum. This limitation is also present in the limited spectrum of behavioral biases, with the decision made to solely focus on overconfidence, herd behavior and the disposition effect.

Although the qualitative method is best suited for capturing complex experiences, it depends on self-reported data, which can be prone to social desirability effects or recall biases. Furthermore, despite efforts to refine the coding-process, the thematic analysis approach using Atlas.ti, introduces potential coder subjectivity. These

limitations do not undermine the findings validity, but they do advise caution when concluding the findings to broader contexts.

5.5 Recommendations

The findings and limitations point to a number of suggestions for future research. Studies could include female traders or traders from a variety of different trading platforms to enhance generalizability. Furthermore, examining other emotions and behavioral biases could expand the spectrum of biases and emotions and determine whether or not they have different impacts on financial risk tolerance. Additionally, measuring the dependent variable not only in a qualitative way but together with quantitative trading metrics such as position sizes and trade frequency can provide a more detailed and supported impact on financial risk tolerance.

Practically, with the reported frequent use of situation modification and cognitive change, individual day traders should develop these techniques for themselves. Traders could work on their own disciplinary rules to help them alter potentially bias or emotion triggering situations or develop a variety of journaling templates and find the right journaling tool to help reflect and reframe their trades.

5.6 Conclusion

To conclude, this study aimed to fill a gap in behavioral finance by shedding light on the complex interactions between behavioral biases, emotions and emotional regulation that shape the financial risk tolerance of individual day traders. The findings confirm that fear reduces financial risk tolerance, while anger and greed increase it, though anger and greed are not as present. Overconfidence and herd behavior raise financial risk tolerance and the disposition effect primarily reflects risk-aversion. Emotional regulation successfully reduces these effects through situation modification and cognitive change, offering practical tools for traders. This study emphasizes the importance of incorporating emotional and cognitive perspectives in financial decision-making models by supporting and expanding on current theories (e.g. Lerner & Keltner, 2001; Fenton-O'Creevy et al., 2011; Odean, 1998a; 1998b). Despite the limitations of this study, the results might provide traders and educators with valuable insights to enhance financial decision-making.

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Appendices

Appendix 1: Data display (Themes, Codes, Definitions and Examples)

Theme	Code	Description	Example
Fear as the dominant emotion driving risk-averse behavior	Losing money	Trader states his attachment to the monetary value of the trade and is unwilling to lose a certain amount of money. This fear, rooted in loss-aversion, leads to an inability to put on the necessary risk for entering a trade.	<i>“Mainly because it's just the fear of the loss that just kind of overcomes you. Just the fear of losing a certain dollar amount is what overcomes you in a sense. So it's just me not being able to put that risk on because of the fear of losing and my thesis not playing out.”</i>
Herd behavior's externally driven influence on financial risk tolerance	Suboptimal entries	Trader acknowledges his entry was based on a fear of missing out on price movement and entering at suboptimal prices. The group consensus leads to a belief in continuation of price action and a distortion of risk management.	<i>“I think I found myself buying at a high point when the train had already left, and I was just kind of convincing myself because the group was just, the group was just kind of confirming my bias. It was feeding into what I wanted to see, and everyone just kind of fell into this delusion that something would happen. But at the end of the day, it was like we were really just buying at the top.”</i>
Situation modification as the dominant emotional regulation strategy	Closing charts	Trader explains the situation modification process of altering his situation through closing his trading charts. Due to his understanding that emotions have the potential to interfere with his trading decisions, he walks away from his setup and mitigates their influence.	<i>“Because price would be choppy or almost go against you and almost to your stop-loss. It could get tricky if you're behind the screen and you get a little sweaty thinking you would win or you would lose the trade. And if you just walk away, if it is a winner, then you come back to the screen after</i>

			<i>half an hour or maybe longer; you would just look at your screen and see that it went to your take profit."</i>
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Appendix 2: Direct message for approaching potential interview participants (Discord)

Goodafternoon,

I'm currently working on my master thesis (Strategic Management & Entrepreneurship) and i'm doing a qualitative study researching the "The influence of biases and emotions on financial risk tolerance and how emotional regulation moderates these relationships"

A study on day traders

My research will be conducted via interviews and I wondered if you would like to be a part of it? It's a 1 on 1 interview via zoom or discord, no camera is required and it will be completely anonymous.

Kind regards,
Sam Arnold

Appendix 3: Declaration on the Use of AI Tools

Hereby, I, Sam Arnold, confirm that I have read, understood and comply with the AI use policy as stated in the 'Course Syllabus MSC thesis spring 2025'. The thesis has been written by myself, using AI tools only as a support tool to improve readability. I have used the AI tool 'Grok' to help me with grammar/style correction, validation of new ideas and for the structuring of the references.