

A Multidimensional Investigation of The Role of Impulsivity In Problematic Trading

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Citation: Rogier, G., Loscalzo, Y., Velotti, P. (2026). A Multidimensional Investigation of The Role Of Impulsivity In Problematic Trading. Journal of Gambling Issues.

Editor-in-Chief: Nigel Turner, Ph.D.

Received: 09/22/2025
Accepted: 01/13/2026
Published: 02/18/2026



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Abstract. Problematic Trading (PT) is conceptualized as a mental health issue similar to gambling disorder or even as its subtype. Several scholars suggested analyzing the role of gambling-related risk factors in PT, such as impulsivity. However, the role of impulsivity facets in the different problems related to trading has not been investigated yet. We administered the Experiences of Trading Questionnaire (ETQ) and the Short UPPS-P Impulsive Behavior Scale (S-UPPS-P) to 104 traders, as they allow evaluating different facets of the constructs under investigation. We analyzed their relationships through Spearman correlations, while we investigated the predictive role of impulsivity dimensions on PT using a multivariate Bayesian regression. Negative urgency was positively correlated with all the ETQ subscales. Obsessive thinking, self-critical rumination, and trading-related functional impairment were positively correlated with a lack of both perseverance and premeditation. Sensation-seeking was positively associated with markets' anthropomorphizing and with chasing profits. From multiple regression, it emerged that negative urgency and lack of perseverance are positive predictors of dissimulation of losses. Moreover, negative urgency also positively predicts chasing losses. As in problematic gambling, impulsivity is a relevant variable accounting for PT. Negative urgency is the strongest predictor of all PT dimensions, suggesting that emotion dysregulation might foster the loss of control over trading behavior and decision-making dysfunctionalities. Sensation-seeking plays a role in the market's anthropomorphizing and chasing profits, potentially explaining another pathway by which trading might become addictive. Future studies aiming to account for the complexity of the topic may want to replicate the proposed multidimensional approach.

Keywords: Problematic Trading, Impulsivity, Negative Urgency, Sensation-Seeking, Chasing, Cognitive Bias.

INTRODUCTION

Trading is an activity in which the individual buys and sells financial products to retrieve monetary gain. A wide range of financial products can be traded such as stock options and cryptocurrencies. In the last decade, we witnessed an “e-democratization” of trading due to the increasing accessibility provided by cryptocurrency exchanges (Ivantchev & Ivantcheva, 2024). Trading is not a problematic activity *per se* as some traders take profits from trading, potentially enriching, instead of impoverishing, their everyday life (Jordan & Diltz, 2003).

However, problematic trading has been pointed out as a potentially relevant mental health issue (Delfabbro et al., 2021). There is evidence that huge losses related to trading can lead to negative consequences (Kamolsareeratana & Kouwenberg, 2023). The concerns regarding the potential of trading for harm increased with the spread of cryptocurrency trading in a population lacking financial education and prone to gambling-like behaviors on trading platforms (Delfabbro et al., 2021). Indeed, research evidences several common demographic and psychological characteristics between gamblers and traders (Arthur & Delfabbro, 2007). Recent data also identified several distinct features of problematic trading, including obsessive thinking focused on trading, chasing both losses and profits, negative impacts on private and professional functioning, proneness to anthropomorphize the market, harsh self-critical rumination following losses, and the proneness to dissimulate losses related to trading (Johnson et al., 2023; Rogier et al., 2025). Despite this broad picture of the potential problems related to trading, little is known regarding the factors that explain inter-trader differences. Most of the available literature adopted a mono-dimensional approach, investigating only trading-related harms or problematic trading severity, measured with adapted tools developed in the field of gambling disorder that potentially miss the specificity and complexity of problematic trading (Loscalzo et al., 2025; Billieux et al., 2015).

Although problematic trading does not perfectly overlap with problematic gambling, the similarities between individuals who engage in these behaviors and the structural characteristics of the activities suggest that investigating variables accounting for problematic gambling can be a strategic route for understanding those associated with problematic trading (Delfabbro et al., 2021).

From a psychological point of view, one of the most predictive factors of problematic gambling is impulsivity (Rogier et al., 2022). Its role in problematic gambling was considered so central to justify its nosographic classification for a long time as an impulse control disorder (American Psychiatric Association, 1994). The role of impulsivity in problematic trading has been suggested by several studies using the Barratt Impulsiveness Scales (BIS; Barratt, 1959) that assessed levels of attentional, motor, and non-planning impulsiveness, referring, respectively, difficulties in maintaining attention on a task, in acting thoughtfully in response to

external triggers and to plan the consequences of own behavior before acting. Yiğman et al. (2023) measured problematic trading with an adapted version of the South Oaks Gambling Screen and found that the scores were positively associated with the three BIS dimensions. Sonkurt and Altinöz (2021) found a positive association between motor impulsivity and problematic trading measured with the Pathological Trading Scale, a tool based on the research criteria delineated by Guglielmo et al. (2016), who adapted criteria for gambling and gaming disorders to problematic trading.

Despite the value of these studies, the instrument they used to measure impulsivity may not account for the complexity of the construct as it does not assess its emotional facets. In particular, the multidimensional model of impulsivity (i.e., Urgency–Premeditation–Perseverance–Sensation Seeking–Positive Urgency; UPPS-P) developed by Whiteside and Lynam (2001) and later integrated by Cyders and Smith (2008) may be better suited for the understanding of this issue and has indeed often been used in the studies on gambling disorder (Maclaren et al., 2011). The model posits that five dimensions should be distinguished, two referring to the proneness to act rashly in reaction to intense emotions, either negative (negative urgency) or positive (positive urgency). Another emotionally connotated dimension consists in the proneness to seek for thrill and strong sensations (sensation-seeking). The other two dimensions describe cognitive forms of impulsivity operationalizing difficulties to plan the long-term consequences of one’s behavior (lack of premeditation) and maintain a goal-directed behavior in the long term (lack of perseverance). Regarding gambling disorder, data documented that impulsivity levels, measured with the Impulsive Behavior Scale (UPPS; Lynam et al., 2006), are significantly higher in individuals suffering from gambling disorder compared to those who do not (Maclaren et al., 2011) and this is especially true regarding the negative urgency and lack of premeditation dimensions.

Regarding research conducted on traders, sensation-seeking appears to be the most investigated UPPS-P dimension. It has been found to be a common motivation for investing (Cox et al., 2020). Also, in the analysis of transaction records by Dorn and Sengmueller (2009), trading intensity and frequency were associated with feelings of enjoyment and pleasure connected to the investing activity. Other studies found that sensation-seeking levels were associated with trade frequency (Grinblatt & Keloharju, 2006) and trading volume (Antonelli-Filho et al., 2021). Son and Jeong (2023) observed that levels of stock-options addiction were positively associated with sensation-seeking levels. To the best of our knowledge, only two studies employed the UPPS-P to examine the implications of its dimensions in problematic trading (Coloma-Carmona et al., 2025a; Coloma-Carmona et al., 2025b). In the first study, the authors used the criteria made by Guglielmo et al. (2016) to identify traders’ profiles and observed that the highly problematic group showed higher levels of all impulsivity dimensions. In their second study, the authors identified different profiles in a population of traders according to trading and

gambling involvement indicators. They then observed that the group of traders also involved in gambling activities obtained significantly higher scores on the UPPS-P scales than individuals trading only cryptocurrencies or stock options.

Despite the value of these studies, additional data is necessary for at least two reasons. First, the instrument used to investigate problematic trading is limited by epistemological bias (Billieux et al., 2015; Loscalzo et al., 2025), does not account for the specificity and complexity of the construct of problematic trading nor for the dimensional relationship between the variables. This limitation is particularly important given the current lack of sufficient evidence to support the conceptualization of problematic trading as a distinct psychopathological category. Lastly, we lack an investigation of the unique predictive role of the single impulsivity dimension on problematic trading. This seems especially important to identify which of these dimensions has more impact and should, therefore, be targeted by preventive or treatment interventions with priority. To address these gaps, we conducted a cross-sectional study on a sample of traders, investigating problematic trading and impulsivity, both conceptualized and operationalized through a multidimensional approach. Grounded in the previous studies reviewed above, we expected that the strongest predictors of problematic trading would be urgency and sensation seeking. Because of the lack of prior evidence regarding the variables accounting for the different features of problematic trading, we did not formulate specific hypotheses, except for the general expectation that higher levels of impulsivity would predict higher levels of problematic trading.

Method

Participants and Procedure

The participants were 104 traders (involved in a trading course) who participated in comprehensive research (i.e., TRADERS project), including a different set of variables. They have been recruited thanks to a trading school's director who shared the EUSurvey online questionnaire link (including a first sheet for informed consent) among his students. The Ethical Committee of the University of Genoa approved the research. These traders are mainly males (89.4%), their *Mean* age is 51.61 (*SD* = 9.96) – ranging between 27 and 80 years – and half of them are married (49%). Regarding their education level, most had a high school degree (42.3%) or a university degree (37.5% for a Master's, 12.5% for a Bachelor's). About the yearly family income, 63.5% reported it is between 36,000€ and 100,000€, and 10.7% that it is higher than 100,000€. The other participants reported less than 36,000€ per year. Regarding their trading experience, the *Mean* value is 6.86 (*SD* = 6.50) years, while they spend on average 1.99 (± 1.78) hours per day in trading activity. Finally, only a minority (23.1%) used cryptos for their trading activity last year. There are participants for whom trading is the main activity (10.6%), and a few declared to be engaged in trading for half their job time (14.4%). However, most (75.0%) do not

have trading as their primary professional activity. Detailed descriptives are available in Table 1.

Table 1.
Main descriptives of the sample.

Category	Variable	Percent
Gender	Male	89.4
Marital Status	Single/Unmarried	15.4
	Married/Partner	49.0
	Remarried	1.9
	In a relationship	6.7
	Divorced	3.8
	Separated	6.7
	Widowed	1.9
	Living together	14.4
Income	Less than 36000 EUR per year	25.0
	Between 36000 and 100000 EUR	63.5
	More than 100000 EUR per year	10.6
	Total	99.0
Education	Middle school diploma	2.9
	High school diploma	42.3
	Three-year degree	12.5
	Master's degree	37.5
	Post-graduate degree	4.8
Types of investment	Stock options	47.1
	Forex	85.6
	Bonds	76.9
	Financial options	4.8
	Long-term holding	9.6
	Cryptocurrencies	23.1
Investment Purpose		87.5
	For me	87.5
	For me and others	12.5
Trading as Main Occupation		10.6
	Yes	10.6
	No	75.0
	Trading involves me half of the time	14.4

Materials

Experience of Trading Questionnaire (ETQ). The ETQ (Loscalzo et al., under review) is a 32-item instrument that allows measuring trading experience through three different sections. The ETQ was developed through a multi-stage process involving two samples of traders. The initial pool consisted of 116 items across three sections (general trading experience, trading after losses, trading after gains). In the first sample (N=107), collected via online communities. Exploratory factor analyses and item reduction procedures resulted in the following shorter version. The first section includes 20 items measuring general trading experiences through four subscales: (i) *Anthropomorphizing the Market*, capturing the tendency to attribute human-like characteristics to the market and perceive it as an enemy to be battled; (ii) *Overthinking*, reflecting excessive rumination, intrusive thoughts, and worry about trading; (iii) *Functional Impairment*, assessing the impact of trading on daily functioning, including interpersonal relationships; and (iv) *Dissimulation*, measuring tendencies to minimize losses and exaggerate profits. The second section comprises eight items and two subscales evaluating trading after losses: *Self-Blaming*, reflecting harsh self-criticism following losses, and *Chasing Losses through Perseveration*, capturing compulsive attempts to recover losses both within and across trading sessions, through repeated operations. Finally, the third section is a single 4-item scale, *Chasing Gains through Perseveration*, assessing repetitive trading behaviors aimed at increasing gains through perseveration over time. The response format is a 5-point scale ranging from 0 (*Not at all* or *Not at all/Never*) to 4 (*Very much* or *Very much/Always*). Internal consistency was high across all subscales and total scores (Cronbach's α ranging from .86 to .93). Convergent validity was supported by positive correlations with the Problematic Cryptocurrency Trading Scale (PCS; Menteş et al., 2021) and Stock Addiction Inventory (SAI; Youn et al., 2016). The factor structure was cross-validated in a second sample of traders recruited through a trading course (N=119) using confirmatory factor analyses. After minor adjustments, the CFA showed acceptable to good fit indices across sections, with standardized loadings ranging from .54 to .94. Convergent and divergent validity were further assessed via correlations with the PCS, SAI, and Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001), showing expected patterns. In this sample, Cronbach's alpha values range between .83 and .92.

Short UPPS-P Impulsive Behavior Scale (S-UPPS-P). It is a 20-item self-report questionnaire developed by Billieux et al. (2012) from the 59-item original version by Lynam et al. (2006), and it allows the evaluation of impulsivity in five different facets through the following sub-scales (four items per each scale): Positive Urgency, Negative Urgency, Lack of

Perseverance, Lack of Premeditation, and Sensation Seeking. The response format is a 4-point Likert scale ranging between 1 (*I agree strongly*) and 4 (*I disagree strongly*). We administered the Italian version by D’Orta et al. (2015), which has good psychometric properties. In the current sample, the Cronbach’s alpha values are, respectively, .66, .70, .84, .82, and .76.

Data Analysis

We used IBM SPSS Version 24 to analyze the descriptive statistics (including skewness and kurtosis) and, based on the anomalies in the normal distribution that arose for some variables, Spearman correlations among ETQ and impulsive-related variables. Next, using RStudio (*brms* package), we performed a Bayesian multivariate regression model with S-UPPS-S scales (except for the Positive Urgency subscale, due to its low internal reliability) as predictors of the ETQ scales.

Results

Preliminarily, we analyzed the descriptive statistics of the variables under investigation (see Table 2 for the results).

Table 2. Descriptive statistics of the Experience of Trading Questionnaire (ETQ) and the Short UPPS-P Impulsive Behavior Scale (S-UPPS-P), n = 104.

	Range	M(SD)	Skewness	Kurtosis
ETQ Overthinking	0.00-20.00	5.83(4.63)	.94	.28
ETQ Functional Impairment	0.00-12.00	2.96(3.15)	1.14	.56
ETQ Dissimulation	0.00-16.00	4.22(4.11)	1.03	.44
ETQ Anthropomorphizing of the market	0.00-20.00	3.25(4.46)	1.70	2.50
ETQ Chasing losses through perseveration	0.00-16.00	5.00(4.25)	.84	-.08
ETQ Self-blaming	0.00-16.00	3.09(3.57)	1.79	3.31
ETQ Chasing gains through perseveration	0.00-16.00	5.19(3.94)	0.70	-.14
S-UPPS-P Negative Urgency	8.00-15.00	9.39(1.72)	1.14	.52
S-UPPS-P Positive Urgency	8.00-16.00	9.22(1.67)	1.54	2.11
S-UPPS-P Lack of Premeditation	4.00-12.00	6.24(2.12)	0.67	-.04
S-UPPS-P Lack of Perseverance	4.00-12.00	6.73(2.35)	0.47	-.91
S-UPPS-P Sensation Seeking	8.00-16.00	9.92(1.99)	1.02	.41

Then, given the skewness and kurtosis values higher than ± 1 for some variables, we performed Spearman correlation to evaluate the correlations between ETQ and S-UPPS-S scales. As shown in Table 3, most correlations are not statistically significant, and the rho values are low. The highest correlation values (.31) are all related to the S-UPPS-S Negative Urgency scale (with ETQ Dissimulation, Chasing losses through perseverance, and Self-blaming).

Table 3. Spearman correlations between Experience of Trading Questionnaire (ETQ) and Short UPPS-P Impulsive Behavior (S-UPPS-S) scales (n = 104).

	UPPS-P Impulsive Behavior Scales				
	Negative Urgency	Positive Urgency	Lack of Premed.	Lack of Persev.	Sensation Seeking
Overthinking	.16*	.04	.20*	.20*	.09
Functional Impairment	.25**	.20*	.22**	.26**	.12
Dissimulation	.31***	.25**	.04	.23**	.13
Anthropomorphizing of the market	.24**	.09	.12	.13	.17*
Chasing losses through perseverance	.31***	.19*	.15	.22*	.16
Self-blaming	.31***	.06	.17*	.27**	.15
Chasing gains through perseverance	.25**	.13	.01	.11	.21*

Note. Variables in row are from the ETQ. Variables in column are from the s-UPPS-S. Premed. = Premeditation; Persev. = Perseveration; *** $p \leq .001$; ** $p \leq .01$; * p

Finally, we performed a Bayesian multivariate regression model with impulsivity scales (except for the Positive Urgency subscale) as predictors of the ETQ scales. The results showed that the only ETQ variables predicted by impulsivity are Dissimulation and Chasing Losses through perseverance. More specifically, Dissimulation is predicted by Negative Urgency ($\beta = 0.46$, 95% CI [0.02, 0.92]) and Lack of Perseverance ($\beta = 0.37$, 95% CI [0.03, 0.72]), while Chasing Losses is predicted by Negative Urgency ($\beta = 0.48$, 95% CI [0.02, 0.97]) only.

Discussion

The current study aimed to increase the knowledge regarding the psychological variables that may explain the proneness to experience problems related to trading activity. To reach this goal, we adopted a multidimensional approach in conducting a cross-sectional study that estimated the associations between different issues related to problematic

trading and several dimensions of impulsivity. A first general observation is that the effect sizes observed were all generally weak to moderate, suggesting that despite impulsivity facets play a role in problematic trading features, the full range of psychological and contextual variables involved is much broader and the nature of their interaction is expected to be much more complex.

Our study's most consistent finding is that negative urgency has a predominant role in problematic trading. Indeed, we found that traders who were prone to act rashly in response to intense negative emotions were also more likely to chase both losses and profits, to suffer from negative consequences related to trading also in terms of self-critical rumination, to experience disturbing and intrusive thoughts related to trading, to lie about own trading performance, and to perceive the market as an opponent to be defeated and from which revenge. This pattern of results aligns with previous data evidencing that negative urgency is likely to be the impulsivity facet that most discriminates between clinical and nonclinical populations across different disorders (Berg et al., 2015). From this perspective, problematic trading does not seem to be an exception to the rule.

Noteworthy, negative urgency also emerged as the unique associate of chasing losses in the regression model we tested. Although no previous data is available on the role of impulsivity in traders who chase, some conclusions from previous studies on gamblers may help contextualize this result. Indeed, Breen and Zuckerman (1999), in a study conducted on a sample of college gamblers, observed that the impulsivity factor retrieved from the Zuckerman-Kuhlman Personality Questionnaire was higher among within-session chasers than non-chasers. They concluded that this effect may stem from the heightened sensitivity to rewards and diminished sensitivity to punishment observed in impulsive individuals, which may, in turn, increase their tendency to persist in harmful behaviors. Of note, our finding regarding the predominant role of negative urgency goes in the same direction of what has been previously suggested by Zhang and Clark (2020), that is, the role of negative emotions in amplifying the inhibition impairment accounting for chasing behavior. Additional indirect data supporting this interpretation consists of the observation that negative mood induction increases persistence in slot machine gambling (Devos et al., 2018).

An interesting result that deserves discussion is the association between negative urgency and the cognitive bias of anthropomorphization. This consists of perceiving the market as an enemy to be defeated and is likely associated with negative feelings such as anger. Future studies may want to investigate the potential role of this variable in a phenomenon often described in specialized forums and labeled "revenge trading," which is a dysregulated trading behavior motivated by the desire to retaliate against a prior loss experienced as a personal affront inflicted by the market. Interestingly, sensation-seeking levels too were associated with this problematic trading experience suggesting that individuals who engage in

trading for enhancement motives may be more likely to anthropomorphize the market and perceive their experience as if they were engaged in a battle. The nature of the associations between impulsivity and cognitive biases has been also discussed in the field of gambling. Following the comment of Michalczuk et al. (2011) on the link between impulsivity and gambling-related cognitive biases, we may speculate that impulsive decision-making decreases the capacity to appreciate critically distorted beliefs through a thoughtful evaluation of the supporting evidence. Importantly, the fact that the two impulsivity facets linked to anthropomorphization in our study were emotional suggests that an underlying difficulty in regulating emotional arousal may account for the severity of cognitive biases. However, because of the cross-sectional nature of our research design, we cannot exclude that the direction of the observed link could be inversed. For instance, higher cognitive biases are likely to strengthen the emotional experience of the trader and facilitate impulsive actions, at least in the context of trading.

We also observed that negative urgency was a significant predictor of the proneness to lie about own losses also after controlling for the role of other impulsivity facets. This could be explained by the fact that they could experience higher losses because of more frequent failures in decision-making processes. This finding also opens the discussion of the role of antisocial personality traits in problematic trading. Indeed, dissimulation behaviors in the field of gambling are traditionally linked to illegal behaviors (Rogier et al., 2017). In turn, illegal behaviors are linked to high levels of impulsivity (Grant & Chamberlain, 2023), so future research may investigate the role of a common pattern between these variables.

Then, regarding obsessive thinking towards trading, we found that its levels were linked to both emotional (negative urgency) and cognitive (lack of premeditation and perseverance) facets of impulsivity. This result is in line with the differences in motor impulsivity levels observed by Sonkurt and Altınöz (2021) between two groups of traders discriminated according to their proneness to check for the evolution of cryptocurrency values frequently. However, following Gay et al.'s (2011) elaborations, our study suggests that different facets of impulsivity may be involved in the difficulty of inhibiting different intrusive thoughts related to trading. In particular, difficulty in persevering may be more linked to mindwandering, daydreaming, and distractive thoughts, whereas negative urgency may be more linked to unwanted and emotionally connotated thoughts, which may also be more associated with a compulsion to act. Complementarily, the observation of this link may suggest that overthinking related to problematic trading may involve cognitive resources and consequently increase the impulsivity levels of the individual in daily life.

Our results also documented that self-critical rumination related to trading was associated with negative urgency and lack of both premeditation and perseverance. The causal nature of this relationship has not been clarified by our cross-sectional design, but a possible interpretation is that individuals with higher levels of impulsive behaviors are likely to

experience negative consequences (i.e., losses) and, therefore, critic themselves for that. Supporting this possible interpretation, a recent study highlighted that the extent to which an individual meta-evaluates negatively impulsive behavior accounts for self-criticism following self-control failures (Ghoniem & Hofmann, 2020).

A last interesting result consists in the association between sensation-seeking levels and chasing profits. This suggests that the trader may chase profits at least partly because of a desire to increase the level of excitement induced by trading gains. The association has been found to be moderate, so that the mechanisms accounting for chasing profits remains to be elucidated. Indeed, sensation-seeking measures only the proneness to approach a specific type of pleasurable stimuli – those which are exciting – whereas profits may also be pleasurable for other reasons, such as a connected increase in the sense of self-worth. In line with this reflection, in a previous study examining the predictors of high trading volume, Antonelli-Filho et al. (2021) recommended the adoption of a multidimensional measure of sensation-seeking to provide an articulated explanation of its role in problematic trading. Unfortunately, our measure of positive urgency was not reliable enough to test the competitive role of this variable with sensation-seeking so that this issue remains to be clarified in future studies. Lastly, the fact that negative urgency was associated with the proneness to chase profits is intriguing, as profits are not expected to be associated with negative emotions. This may be due to the underlying role of a broader proneness to act rashly in response to emotional arousal rather than to a specificity of negative urgency. In line with this interpretation, previous literature argued for the unnecessary distinction between positive and negative urgency (Billieux et al., 2021).

Limitations and future directions

The study has several limitations that should be kept in mind when appreciating its conclusions. First, some limitations are related to the nature of the sample. We recruited a small sample size for a Bayesian multivariate analysis with multiple outcomes. While Bayesian estimation does not require fixed sample size rules, the reliability of posterior estimates depends on both data informativeness and prior specification. In our analyses, we used default priors that may have impacted the precision for some parameters. Therefore, the results should be interpreted cautiously, and future studies could benefit from larger samples and/or weakly informative priors to improve estimation stability. Furthermore, the sample is not fully representative: most participants were middle-aged, male, and relatively well-educated traders, recruited through a trading course. This recruitment strategy may introduce selection bias and limits the generalizability of the findings. Future studies should aim for more diverse and representative samples to enhance external validity. Actually, the population of traders is likely to be heterogeneous. Despite we carefully measured variables regarding the nature of trading activity to ensure the comparability of the

results with other studies, empirical investigations in the field of trading face an intrinsic difficulty due to the great heterogeneity of the type of financial products traded as well as the nature of the training of traders. This may motivate future studies to examine the presence of subtypes of traders. Then, we used only self-report questionnaires to assess the variables. Ideally, a future replication of the study may want to add tasks measuring impulsivity as well as the collection of some behavioral indicators of trading, such as trading volume and frequency. A last limitation of the study that may encourage the replication and extension of our study lies in the lack of measurement of potential confounding variables related to mental health. Indeed, the association between variables may be due to the role of other underlying mental disorders, such as other behavioral addictions.

Practical implications and Conclusion

The findings of this study have several important implications for clinical practice and prevention strategies in the emerging field of problematic trading. From a clinical perspective, our results suggest that screening and intervention programs for problematic trading should prioritize the assessment of emotion regulation difficulties, particularly negative urgency. Given that negative urgency emerged as the strongest predictor of multiple problematic trading dimensions—including chasing losses, dissimulation, and self-critical rumination—therapeutic interventions targeting emotion regulation skills may be particularly effective. Clinicians working with traders who report distress related to their trading activity might benefit from incorporating evidence-based treatments for emotion dysregulation. These interventions could help traders develop more adaptive strategies for managing the intense emotional arousal that often accompanies trading losses, thereby reducing the risk of impulsive, emotionally-driven trading decisions.

For educational and preventive purposes, trading schools and online platforms could integrate psychoeducational content about the role of emotions in trading decision-making. Our finding that sensation-seeking is associated with anthropomorphizing the market and chasing profits suggests that traders motivated primarily by excitement and thrill may be at particular risk for developing problematic patterns. Educational programs could help traders identify their primary motivations for trading and develop awareness of how emotional states influence their trading behavior. Moreover, the implementation of self-monitoring tools that prompt traders to reflect on their emotional state before executing trades could serve as a practical intervention to reduce impulsive trading behaviors.

From a research perspective, our multidimensional approach demonstrates the value of moving beyond unidimensional assessments of problematic trading. Future studies should continue to examine the specific features of problematic trading rather than treating it as a monolithic construct. The differential associations we observed between impulsivity facets and specific problematic trading dimensions underscore the

importance of this approach. Longitudinal studies could clarify whether impulsivity precedes the development of problematic trading patterns or whether repeated negative experiences in trading exacerbate pre-existing impulsive tendencies.

Finally, the heterogeneity of the trading population and the variety of financial products traded highlight the need for context-specific research. Future investigations might examine whether the relationships between impulsivity and problematic trading vary across different trading contexts (e.g., day trading vs. long-term investing, cryptocurrency vs. traditional stocks) or demographic groups. Such research would enable the development of tailored prevention and intervention strategies that account for the diverse risk profiles within the trading community.

Our study suggests that exploring trading behavior through the lens of multidimensional impulsivity is relevant not only for advancing our theoretical understanding of problematic trading as a potential behavioral addiction but also for informing practical applications. By identifying negative urgency and sensation-seeking as key risk factors, this study provides preliminary evidence that can guide the development of screening tools, inform the design of prevention programs in educational settings, and orient clinical interventions toward emotion regulation strategies. As trading becomes increasingly accessible to the general population, particularly through cryptocurrency platforms, the integration of psychological research into trading education and regulatory frameworks becomes ever more critical to protect vulnerable individuals from the harms associated with problematic trading.

STATEMENT OF COMPETING INTERESTS

None declared

ETHICS APPROVAL

Ethics committee approval n.23/56 was obtained by the Comitato Etico per la Ricerca di Ateneo, University of Genoa, Genoa, Italy on the 31/07/2023.

ACKNOWLEDGEMENTS AND FUNDING SOURCES

PV used a grant from the University Sapienza of Rome.

RELATIVE CONTRIBUTIONS

GR and PV authors conceived of the study. GR conducted the analyses. GR and YL wrote the first draft of the paper. PV revised the first draft. All authors approved of the final version.

RESEARCH PROMOTION

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This study examined how different facets of impulsivity contribute to problematic trading behaviors in 104 traders, addressing a gap in understanding the psychological mechanisms underlying trading-related problems. Using validated questionnaires and Bayesian regression analysis, we found that negative urgency (acting rashly when distressed) was the strongest predictor of problematic trading dimensions, while sensation-seeking specifically influenced market anthropomorphizing and profit-chasing behaviors. These findings suggest that emotion dysregulation plays a critical role in loss of control over trading, similar to gambling disorder, and highlight the need for multidimensional approaches in future research and potential interventions.

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