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BEYOND RATIONALITY
A Theoretical Framework Integrating Cognitive, Emotional, and Social Influences on Retail Investment Decisions

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Abstract:
Retail investor decision making is a multi-faceted psychological activity that involves cognitive assessments, emotional reactions and social influences. While there are a number of interesting relationships between these mechanisms that have been explored in behavioural finance, much further research is needed on the interrelationships. This paper proposes an integrative conceptual model that integrates the cognitive, emotional and social aspects of investor psychology as determinants of the retail investment decision. The study is a theory-synthesis approach based on Dual Process Theory, Prospect Theory, regret theory, Social Learning Theory and informational cascade theory that utilizes complementary theories. The suggested framework views the three processes of cognitive information processing, emotional appraisal, and socially transmitted investment information as interrelated processes that help to shape the psychological evaluation of investment alternatives. The paper formulates theoretical propositions relating the dimensions and introduces an interactionistic perspective on the retail investment decision-making process. It has made the main contribution of conceptualizing investment decisions as the result of interacting psychological processes instead of separate behavioural determinants. The framework gives theoretical implications to the field of behavioural finance and sets directions for empirical research, investor education, and interdisciplinary research.

1. Introduction

The traditional view of conventional finance has typically represented investors as rational decision makers who process information, compare expected returns and risks, and choose between alternatives that align with their preferences. Investment decisions are, however, often made in the presence of uncertainty, limited information, limited attention, and changing market conditions. These are the qualities that make mental functions relevant to monetary decisions. Behavioural finance breaks away from the fully rational investment behaviour assumption by exploring the impact of cognitive restrictions, emotional reactions and social factors on financial decisions. Cognitive perspectives attempt to describe how investors "cognitively" process information and make judgments; emotional perspectives attempt to describe how investors emotionally react to gains, losses, uncertainty and anticipated outcomes; and social perspectives attempt to explain how financial beliefs and decisions are shaped by interpersonal interactions

and observation. These streams have produced a lot of knowledge, but the mechanisms have been studied from various theoretical perspectives. A cognitive bias can be addressed even without considering the emotional response of the investor and social influence can be considered as a separate factor apart from the cognitive or emotional interpretation of information. This separation can make it difficult to see how the psychological mechanisms involved in the consideration of investment alternatives are interlinked. This paper thus proposes an integrative conceptual model that integrates cognitive information processing, emotional appraisal, and social information influence in the process of making a retail investment decision. The main idea is that investment decisions are psychologically integrated outcomes: investment information is interpreted; responses occur to the anticipated outcomes; and information is integrated from social environments. Such processes can occur concurrently and mutually. The paper has three key and expected contributions. First, it synthesises cognitive, emotional, and social theoretical research that is important to making a retail investment decision. Second, it offers an understanding of conceptual relationships between social information, cognitive evaluation, and emotional appraisal. Thirdly, it formulates theoretical propositions which can be used to inform further empirical research and theoretical development.

1.1 Research Problem and Gap

Existing behavioural finance literature has been a significant step forward in understanding the psychological drivers behind retail investment decisions, from the cognitive, emotional and social angles. Cognitive theories describe information processing and judgments, emotional theories describe emotional reactions to financial outcomes, and social theories describe interpersonal influence and socially transmitted information. More recent conceptual studies have focused on emotional processes, and how emotional processes interact with cognitive evaluation. However, there is still a theoretical development pathway to consider to explain how socially transmitted investment information is cognitively assessed and emotionally appraised in retail investment decision-making. Current theories often focus on specific psychological processes, person factors, or decision contexts. Therefore it is helpful to examine how these mechanisms work together in the psychological assessment of investment alternatives. Based on this, an interaction-oriented conceptual framework is proposed by combining cognitive information processing, emotional appraisal and social information influence in this paper. The framework does not view these dimensions as separate factors related to investment decisions, but rather considers the interrelationships of these dimensions as processes through which information is processed and interpreted by retail investors, investment opportunities are assessed, and investment decisions are made.

1.2 Objective and Research Questions

This paper aims to create an integrating theoretical framework to explain retail investment decisions from the perspective of cognitive, emotional and social aspects of investor psychology. The following research questions are answered in the paper:

RQ1: What are the effects of cognitive mechanisms on the retail investment decision-making?

RQ2: What is the influence of emotional processes on investors' financial judgment and investment decisions?

RQ3: How do social influences play a role in retail investment decision making?

RQ4: How can cognitive, emotional and social views be theoretically merged?

RQ5: What propositions arise from this integration and what are the future research directions?

2. Theoretical foundations and literature review.

2.1 Cognitive Foundations

Cognitive processes are the ways that people take in, understand, assess and synthesize information. The judgment and reasoning process is a prominent aspect of Dual Process Theory, where it characterizes two forms of processing: relatively automatic, intuitive, and relatively deliberative, analytical. Dual-processing accounts of reasoning, judgment and social cognition are summarized by Evans (2008), and distinctions between Type 1 and Type 2 processing and the theoretical debate is elaborated by Evans and Stanovich (2013). Intuitive processing can help with quick decision-making in an investment scenario if one receives familiar information or salient market signals. Deliberative processing can include reviewing the characteristics of the funds, reviewing other options, revisiting original perspectives, and reviewing the evidence. Cognitive reflection (Fredrick, 2005) refers to a tendency to rethink an intuitive response and to reason further. It is appropriate to financial judgment in that an initial reaction may not be a considered evaluation. The cognitive aspect is thus illustrated in the present paper by the notions of information interpretation, cognitive reflection, and analytical evaluation. These are "conceptual mechanisms" and not a completed measurement model. Analytical processing is not necessarily synonymous with the quality of decisions, as the quality of information, knowledge, and context are also essential.

2.2 Emotional Foundations

Emotions affect people's perceptions of expected and actual financial results. In line with Prospect Theory (Kahneman & Tversky, 1979), the authors suggest that people evaluate things relative to a reference point, that they react to increases and decreases in value differently, and that they are less sensitive to losses than to gains. Loss aversion and subjective outcome evaluation are two concepts central to the account of emotion in Prospect Theory, a decision theory under risk, but which also have significant psychological implications. It has been reviewed and is still relevant for the study of economics (see Barberis, 2013).

Regret theory describes decision making as a comparison to a counterfactual scenario between the chosen and unchosen options (Bell, 1982; Loomes & Sugden, 1982). Emotional effects of regret can affect investment decisions long before they actually take place; when an investor thinks about what might have been, or what he or she might have done differently, it can affect the decision even before it is made. Zeelenberg (1999) addresses the concept of ‘anticipated regret’ and its consequences for behavioural decision making. The risk-as-feelings approach is different from cognitive assessments of risk (Loewenstein et al., 2001).

Research in the field of emotion regulation, such as that of Gross (1998) provides a more general explanation for the way in which people regulate their emotional response and does not directly translate into monetary evidence of investment decisions. These viewpoints combine to indicate that emotional appraisal is a significant mechanism in investment appraisals. The present framework treats the processes of anticipated gains and losses, counterfactual regret and affective responses as mechanisms that influence cognitive and social processes.

2.3 Social Foundations

Social influences refer to how people get their information, ideas, opinions, and patterns of behaviour from others and from their surroundings. The Social Learning Theory (1977) by Bandura illustrates learning by observing it, whereas Social Cognitive Theory (1986) focuses on the relationship between personal, behavioural and environmental factors.

Cialdini and Goldstein (2004) provide an overview of social influence processes, such as conformity and compliance. Social influence can happen in financial contexts with recommendations, perceived consensus, social expectations, and/or investment of friends, family, and colleagues. This influence can help people get information and financial knowledge, and can also make people feel that they should follow other people's decisions. When there is limited or confusing private information, informational cascade theory helps to understand why it is possible that people may follow observed decisions (Bikhchandani et al., 1992). Banerjee (1992) also models herd behavior resulting from sequential decision making.

The following concepts are related, but not equivalent: Social learning refers to learning by observation, social influence refers to the processes of normative and informational influence, and informational cascades refer to specific social dynamics where observed decisions can replace private information. Social interaction is further illustrated by evidence from investment. Social interaction and the participation in the stock market are reviewed in Hong, Kubik, and Stein (2004).

Kuchler and Stroebel (2021) summarise the field of social finance and the importance of social interactions for financial decision making and beliefs. Digital communities and financial communication online widen avenues for investors to come across recommendations, stories and observed investment behaviours.

2.4 Synthesis of the Three Dimensions

Dimension	Core theories	Mechanisms	Explanatory focus
Cognitive	Dual Process Theory; cognitive reflection	Interpretation; reflection; analytical evaluation	How financial information is processed
Emotional	Prospect Theory; regret theory; risk-as-feelings	Gain–loss appraisal; anticipated regret; affect	How outcomes are psychologically evaluated
Social	Social Learning; social influence; informational cascades	Observation; peer influence; socially transmitted information	How information and behaviours are acquired socially

The three dimensions complement each other. There are social processes that deliver information and behaviour cues, cognitive processes that process information and evaluate it, emotional processes that give it subject meaning in relation to expected and experienced outcomes. They interact with one another and upon which the following framework is based.

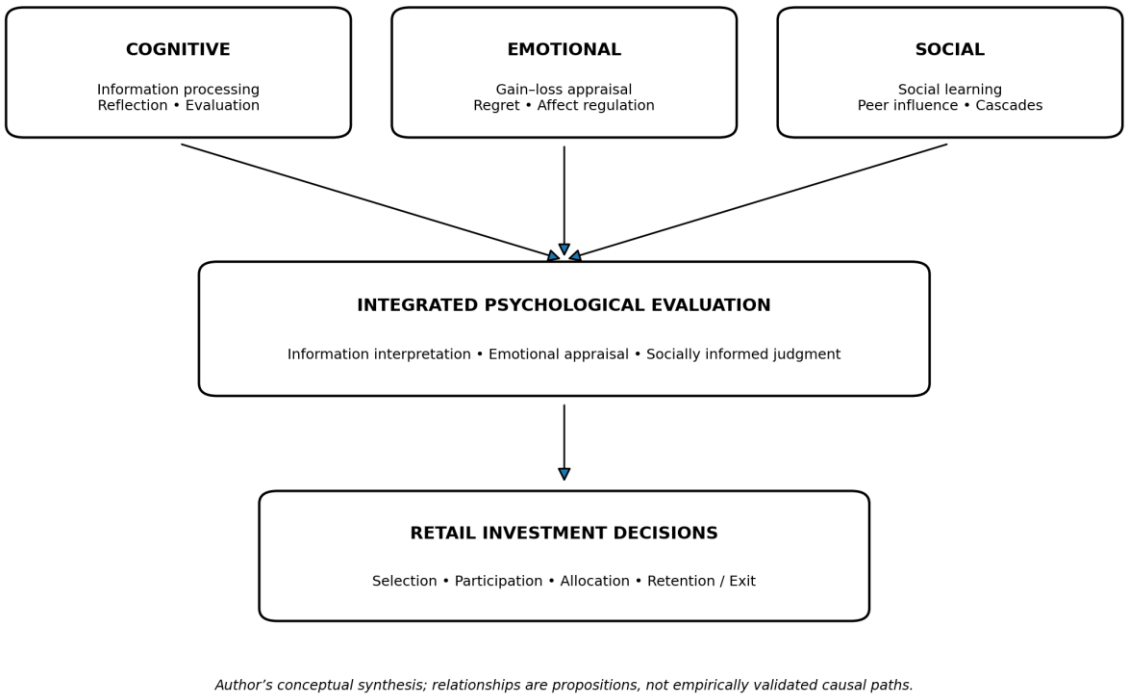
3. Integrated Conceptual Framework and Theoretical Propositions

3.1 Framework Logic

The framework treats retail investment decision making as a result of various cognitive, emotional and social processes that are interrelated. The cognitive dimension is an understanding of interpretation and evaluation of financial information. The emotional dimension is an interpretation of the expected and actual results. The social dimension addresses how people get and interact with information in interpersonal ways and by watching other people.

The dimensions do not necessarily imply a fixed linear sequence. Social information can affect the process of cognitive evaluation and emotional reactions, cognitive interpretation can affect emotional appraisal, and emotional reactions can affect attention, interpretation, and choice. The mechanism can thus be carried out in parallel and in reverse, while retaining the conceptual distinction between the mechanisms. The data assigned are a conceptual synthesis from the author.

Figure 1. Integrative psychological framework of retail investment decisions



Source: Author's conceptual synthesis.

3.2 Cognitive–Emotional Integration

The evaluation of investment alternatives is accomplished by cognitive and emotional mechanisms. Investors process the information in the financial market and undergo reactions to the expected results. The meaning and intensity of emotional reactions can be affected by perceived losses that can create discomfort or anticipated regret, or by cognitive interpretation that can shape meaning and intensity of emotions. Prospect Theory and risk-as-feelings elucidate subjective outcome evaluation and affective reactions to risk in complementary ways.

3.3 Cognitive Social Integration

Social environments give recommendations, observed investment decisions, and market narratives. Investors can consider these inputs as analytical data, as intuitive information, or as an alternative to independent information. This social learning/cognitive processing relationship can therefore help to explain the acceptance, modification, or rejection of socially acquired information.

3.4 Emotional Social Integration

Emotional responses may arise from social information. Seeing peers make investment gains can lead to feelings of optimism, excitement, or fear of missing out, while seeing losses can trigger anxiety or apprehension. These responses may influence subsequent evaluation. Social environments are therefore a source of information as well as a context in which emotional experiences are experienced.

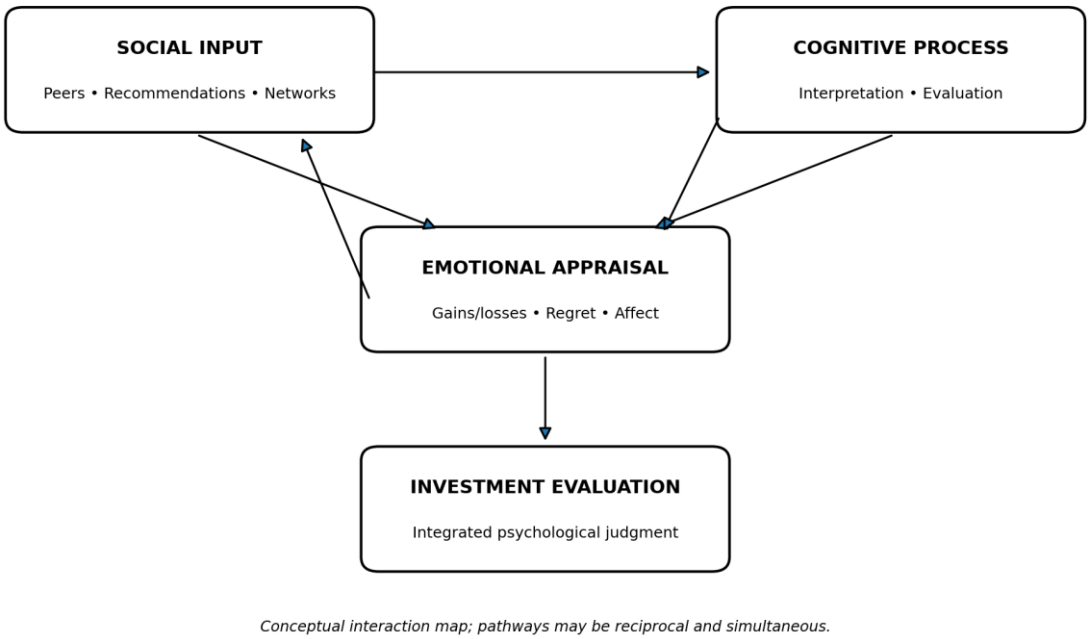
3.5 Theoretical Propositions

Proposition	Statement
P1	Socially transmitted investment information influences the cognitive evaluation of investment alternatives.
P2	Cognitive evaluation of investment information shapes investors' emotional appraisal of anticipated investment outcomes.
P3	Emotional appraisal influences the interpretation and subjective evaluation of financial information.
P4	Socially transmitted investment information may generate emotional responses that influence investment evaluation.
P5	Cognitive evaluation and emotional appraisal jointly contribute to the psychological evaluation of investment alternatives.
P6	The interaction of cognitive, emotional, and social mechanisms provides an integrative explanation of retail investment decision-making.

These propositions are theoretical statements derived from synthesis; they are not empirically tested hypotheses in the present paper.

3.6 Interaction Model

Figure 2. Illustrative interaction among social inputs, cognitive processing, and emotional appraisal



Source: Author's conceptual synthesis. Pathways may be reciprocal and simultaneous.

4. Research Methodology

4.1 Research Design

The study is conceptual research design with techniques of literature integration and theory synthesis. Conceptual research emphasizes theoretical thinking, analysis of previous conceptual work, and conceptual connections, instead of data collection and statistics. The aim is to bring together complementary theoretical approaches and propose ideas that explain the psychological mechanisms behind retail investment decisions.

4.2 Literature Search Strategy

The literature search should aim to find the core conceptual literature, peer-reviewed studies, foundational theory papers, and review literature related to the topic. This should be done in the following databases: Scopus, Web of Science, and Google Scholar. Expressions are likely to be combined to reflect retail or individual investors, investment decision-making, cognitive processing, emotion or affect, social influence, social learning, and conceptual or theoretical frameworks. Some examples of search terms: (retail investor OR individual investor OR investment decision) AND (cognitive OR emotion OR affect) AND (social influence OR social learning OR peer influence); and (investment decision-making) AND (conceptual framework OR theoretical framework OR integrative framework) AND (psychological OR behavioural). Final manuscript should state the actual date(s) searched, exact strings searched, databases searched, and screening process.

4.3 Selection and Synthesis

Relevant literature should be based on theoretical contribution, relevance to the study of the mechanisms involved in financial decision-making, scholar level of the literature and usefulness for conceptual integration. Theory should be kept even if it was published in the past, and contemporary theory should be used to update the current investment information environment. Each theory needs to be identified by the synthesis for its explanatory focus, assumptions, mechanisms, limitations, and connection to other theories.

The analytical process involves: (1) identification of theoretical bases; (2) extraction of psychological mechanisms; (3) critical examination of the contribution and problems of explanation; and (4) integration of the mechanisms into a framework and development of propositions. This should be done transparently and recorded. The manuscript should not present the results of a systematic review that has been completed without search and screening having been carried out and documented.

4.4 Methodological Limitations

The approach used is a theoretical synthesis approach and has not been validated in this paper. The suggested relationships are hypotheses and not statistically identified cause-and-effect relationships. Mechanisms can differ among investor types, financial instruments, market and information environments. The framework does not include all possible factors determining investment choices; other factors such as financial literacy, experience, institutional conditions and contextual variables can be added to future refinements.

5. Theoretical Discussion

This article examines how isolated determinants and assessment of suspected educational needs have evolved into an integrated evaluation.

The consideration of cognitive, emotional and social determinants separately does not capture the dynamics of their interactions in the context of the evaluation of investment alternatives. The framework differentiates mechanisms from their integrated impact on investment assessment, which addresses this issue. It suggests that it is not psychological factors alone that determine the decision-making process, but rather in the interaction between information processing, emotional appraisal and socially transmitted information.

5.2 Contribution to cognitive explanations.

In this model, cognitive evaluation is placed in a larger psychological context. Subjective significance of inputs to judgment may be influenced by emotional experiences, and social information may be inputs to judgment. So, cognitive evaluation is no longer understood as a separate analytical operation, it is understood as a process that is embedded in emotional and social influences. It is not to say Analytical Processing is always correct – the quality of the Judgement is still subject to the quality of the information, knowledge and context.

5.3 Contribution to Emotional Explanations

Emotions are not just considered as standalone behavioural biases within the framework. It places emotional appraisal as part of interactions with cognitive interpretation and social information. Financial information, observed outcomes and socially transmitted beliefs may influence the emotional reactions of

investors. This provides a foundation for analysis of affect in the context of a comprehensive investment assessment process.

5.4 contribution to social explanations

Social theories account for the way people gain information and behavioural patterns from observing and interacting with others. The framework generalizes these explanations by analyzing the integration of socially acquired information into people's judgments. Social information can be analyzed, trusted or understood as a feeling. Social influence is therefore taken as an input into the investment decision-making process and as a mechanism that acts in tandem with the cognitive and emotional evaluation.

5.5 Central Theoretical Contribution

The main contribution is a psychological theory about retail investment decision-making that is interaction-oriented. The framework integrates mechanisms that frequently have been dealt with individually via different theory perspectives, and defines potential interrelationships between these mechanisms. The novelty must be taken into context as a proposed synthesis that must be compared to other current integrative models, not as a suggestion that cognitive, emotional, or social influences have not been studied together.

6. Theoretical Implications

The first advantage is that the framework shifts from the psychological determinants as stand-alone constructs to a view of the psychological determinants as interrelated. Second, it separates the acquisition of financial information from the psychological evaluation of such information, which can be introduced into the judgment through social interactions, but can also be identified as information incorporated into the judgment through cognitive and emotional processes. Third, it offers a foundation for discussion on investor psychology in an interaction perspective. Fourth, it enables interdisciplinary development by linking behavioral finance, cognitive psychology, affective science and social psychology. Finally, the propositions lay the groundwork for subsequent research that investigates the connections between the psychological mechanisms and contextual differences.

7. Practical Implications

7.1 Financial Education

The financial education can not only focus on the financial knowledge but also psychological process of the financial evaluation in investment. Intuitive judgments, critical evaluation of information and an understanding of emotional responses to information about gains, losses and uncertainty can be encouraged for investors.

7.2 Investment Advisors

When communicated, advisors should take into account the cognitive, emotional and social environment of their clients when recommending. Knowing how customers rely on peer recommendations, emotional reactions, or intuitive decisions could help in better investor communication and decision support.

7.3 Financial Institutions and Investor Awareness

The framework can be used to support investor education and communication by institutions. Providing transparent information, explaining risk in understandable terms and making educational resources available can serve to help investors assess investments more than just by social recommendations or emotionally-driven stories.

8. Future Research Agenda

Empirical studies of the relationships between social information, cognitive appraisal, and emotional appraisal is possible in the future. Researchers could explore the direct effects of social information on investment decisions, or the processing of such information in the mind and its emotional consequences. Variation by financial literacy, investment experience, age, objectives and market conditions can also be evaluated in research.

But the digital investment space also provides additional avenues: online communities, financial influencers, and digital financial communication could alter the way socially transmitted information is gained and assessed. Emotional regulation during times of market volatility and uncertainty is an area that can be explored in future work. Contextual factors (e.g., financial literacy, culture, experience, and institutional conditions) can be included in conceptual extensions, but have to be separated from basic psychological mechanisms.

9. Conclusion

Retail investors make investment decisions in a complex manner that goes well beyond the rational perspective of financial assessment. While behavioural finance has shed light on the cognitive biases, emotional reactions, and social factors that influence investment decisions, studying these factors in isolation might only capture part of the picture in understanding investors' assessment of financial options. This paper presents a conceptual framework combining the cognitive, emotional and social aspects of investor psychology. The model is grounded in Dual Process Theory, Prospect Theory, regret theory, Social Learning Theory and informational cascade theory, and frames investment decision-making as being the result of a complex interplay of psychological mechanisms. Cognitive processes refer to how information is interpreted and evaluated; emotional processes refer to how expected and actual outcomes are appraised; and social processes refer to how socially transmitted information is acquired and how it affects it.

The main contribution is in the orientation towards interactions and interrelationships between psychological mechanisms, rather than focusing on individual determinants. The propositions establish research directions for the future and theory development. The framework can be considered as a contribution to behavioural finance because it provides an integrative view of the psychological underpinning of retail investment decision making.

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