

Chapter 4

Sensory Perceptions and Financial Choices: A Neuroscientific Perspective

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ABSTRACT

This study investigates the intricate relationship between sensory perceptions and financial choices through a neuroscientific perspective, addressing two key research questions: (1) How are sensory perceptions and financial choices related? (2) How is neuro sensory behavior important in investment decision-making? By integrating insights from neuroscience and behavioral finance, we aim to uncover the mechanisms by which sensory inputs influence economic behaviors and decision-making processes. Our conceptual, literature-based exploration reveals those sensory perceptions—encompassing visual, auditory, olfactory, tactile, and gustatory stimuli—play a critical role in shaping financial decisions. These sensory inputs are processed by neural systems, affecting cognitive functions and emotional responses, which in turn influence risk perception, time preference, and overall financial choices. This study highlights that financial decisions are not solely based on rational calculations but are deeply intertwined with sensory experiences and emotional states.

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INTRODUCTION

The field of behavioral finance has long been fascinated with the myriad ways that human behavior impacts financial decision-making. Neurosensory behavior, which investigates into how our sensory perceptions and neurological processes influence our actions (Foley, 2019), provides a deeper understanding of the underlying mechanisms driving investment decisions. This intricate interplay between the brain, senses, and financial choices can help explain why investors often act irrationally, deviating from purely logical economic models.

At its core, neurosensory behavior involves the study of how sensory inputs—such as sight, sound, and touch—are processed by the brain to form perceptions and ultimately guide behavior. In the context of investment decisions, this can encompass everything from the impact of news headlines and financial reports to the subtle influence of environmental factors like the ambiance of a trading floor (Pompian, 2012). For instance, bright and fast-moving stock tickers can create a sense of urgency and excitement, potentially leading investors to make hurried, and often less rational, decisions. One significant aspect of neurosensory behavior in investment decision-making is the role of emotions (Jakovaara, 2020). The brain's amygdala, which processes emotions, can heavily influence financial decisions (Peterson, 2007). Fear and greed, two potent emotions in the financial world, can drive investors to sell off stocks in a panic or to engage in speculative buying during a market surge (Goldberg, 2012). Understanding how these emotional responses are triggered by sensory inputs and how they influence behavior is crucial for developing strategies to mitigate irrational decision-making.

Furthermore, cognitive biases, which are systematic patterns of deviation from norm or rationality in judgment, are deeply intertwined with neurosensory behavior. For instance, the availability heuristic, where people make decisions based on the most readily available information, can be influenced by how prominently certain information is presented. Financial media often highlights extreme cases, such as spectacular successes or failures, which can skew investors' perceptions and lead to overestimation or underestimation of risks and returns. Neurosensory behavior also sheds light on the phenomenon of confirmation bias, where investors favor information that confirms their pre-existing beliefs and ignore contradictory data. Sensory inputs that align with an investor's expectations are processed more readily and influence decision-making more strongly. This can lead to a reinforcement of faulty investment strategies and increased vulnerability to market volatilities. Interestingly, advancements in neuroscience and technology are beginning to offer tools to better understand and potentially mitigate these biases. Techniques such as functional magnetic resonance imaging (fMRI) allow researchers to observe which areas of the brain are activated during decision-making processes. Insights

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