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Neurophysiological Methods in Accounting and Finance

Gaia Bassani[1] | Silvio Vismara[1,2]

[1]Department of Management, University of Bergamo, Bergamo, Italy | [2]Laboratory for the Analysis of CompleX Economic Systems (AXES), IMT School for Advanced Studies Lucca, Lucca, Italy

Correspondence: Silvio Vismara (silvio.vismara@unibg.it)

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ABSTRACT

Recent advances in neuroscience have made neurophysiological methods increasingly accessible, creating a timely opportunity to rethink how accounting and financial decisions are studied. Yet accounting and finance research has been slow to exploit its full potential. This paper argues that neurophysiological methods are not merely novel measurement tools, but theory-enabling instruments that can reveal otherwise unobservable mechanisms underlying judgment, disclosure processing, incentives, ethics, and risk-taking. Drawing on a systematic review of 55 high-quality studies published in leading journals, we show how these methods uncover the roles of attention allocation, cognitive effort, emotional arousal, learning, and moral conflict in shaping accounting and financial decisions. Our analysis demonstrates that existing research remains heavily concentrated on eye-tracking, while EEG and fMRI are still underused despite their greater potential to discriminate between competing theoretical explanations. Building on this evidence, we develop a mechanism-based framework that integrates neuroaccounting and neurofinance and repositions neurophysiological methods from a peripheral methodological novelty to a central analytical resource for international financial management and accounting research. We further derive a prioritized research agenda that identifies where these methods can generate the strongest theoretical leverage, the clearest cross-domain insights, and the most consequential advances for future scholarship.

JEL Classification: G30

1 | Introduction

Over the past two decades, neurophysiological methods have transformed the study of economic decision-making by enabling direct observation of the cognitive and affective processes that underlie choice. Research in neuroeconomics, neuromarketing, and neuro–information systems has demonstrated how tools such as eye-tracking, electroencephalography (EEG), and functional magnetic resonance imaging (fMRI) can reveal mechanisms that remain invisible to self-reports or outcome-based behavioral measures (Camerer et al. 2005; Dimoka et al. 2012; Riedl and Léger 2016) or are also possible means to further support subjective indices (Cappa et al. 2020). Neurophysiological methods offer an alternative to traditional data collection techniques by providing objective, unfiltered insights into decision-making processes. Neurophysiological methods provide a robust framework for investigating the implicit cognitive, affective, and interpersonal mechanisms that underpin decision-making processes across these domains. More specifically, these mechanisms include cognitive mechanisms such as attention, level of processing, cognitive effort, and learning; affective mechanisms such as arousal and emotional responses; and interpersonal mechanisms such as trust and social influence. In accounting and finance, however, the diffusion of these methods has been slower and more fragmented. While recent studies indicate growing interest in neuroaccounting and neurofinance (e.g., Borozan et al. 2022; Rotaru et al. 2025), the literature remains dispersed across disciplinary silos, methodological approaches, and decision contexts. As a result, existing knowledge accumulates unevenly, and opportunities for cross-fertilization between accounting and finance are only partially realized.

This fragmentation is problematic because many of the most consequential decisions in international financial management and accounting—such as interpreting earnings announcements, evaluating risk disclosures, designing performance metrics, or responding to incentives—are inherently cross-disciplinary. They involve the production of information (an accounting function), its interpretation under uncertainty (a finance function), and the cognitive and emotional processes that connect the two. Neurophysiological methods are uniquely suited to study these shared mechanisms because they capture attention, effort, arousal, emotion, and learning in real time, independently of disciplinary labels. Following established classifications in the neuro–information systems literature (Dimoka et al. 2012; Riedl and Léger 2016), we review six neurophysiological methods: eye-tracking, facial expression analysis, skin conductance response (SCR), electrocardiogram (EKG), EEG, and fMRI. Where substantively relevant, these methods can be distinguished between peripheral psychophysiological measures and brain-based measures. This distinction reflects fundamental trade-offs in temporal resolution, spatial precision, invasiveness, and ecological validity. Importantly, all these methods have already generated meaningful insights in accounting and finance, ranging from attention allocation in financial reporting to neural encoding of risk and moral conflict. Despite this progress, prior reviews remain largely discipline-specific (Miendlarzewska et al. 2019; Tank and Farrell 2022; Rotaru et al. 2025) or method-specific (Borozan et al. 2022; Lynch and Andiola 2019). As a consequence, they do not fully articulate how findings from neuroaccounting and neurofinance relate to one another, nor how insights from one domain can systematically inform theory development in the other. Early conceptual work (Birnberg and Ganguly 2012) recognized this integrative potential, but a comprehensive, agenda-driven synthesis has yet to emerge.

This paper addresses this gap by repositioning neurophysiological research as a shared analytical infrastructure for accounting and finance. Rather than treating neurophysiological methods as ancillary tools, we argue that they enable a shift toward mechanism-based explanations of judgment, disclosure processing, ethical behavior, and risk-taking—core phenomena in international financial management and accounting.

Specifically, we ask:

Research Question 1: How have accounting and finance studies used neurophysiological methods in terms of metrics, mechanisms, and decision contexts?

Research Question 2: Where should neurophysiological research in accounting and finance go next?

To answer these questions, we conduct a systematic literature review of 55 studies published in leading journals and develop a mechanism-based synthesis of the literature. Rather than organizing prior work around narrow application domains, we classify evidence across neurophysiological systems, metrics, and the underlying cognitive, affective, and social mechanisms they capture. This approach allows us to identify how different methods contribute to the observation and interpretation of key processes such as attention allocation, cognitive effort, emotional arousal, learning, and moral conflict across accounting and finance settings. Building on this synthesis, we develop an integrative framework that links mechanisms to recurring decision contexts and to international boundary conditions. Finally, we derive a prioritized, mechanism-driven research agenda that highlights where neurophysiological methods can provide the strongest theoretical leverage and help adjudicate between competing explanations in accounting and finance research.

This paper contributes to international financial management and accounting research in three ways. First, it provides an integrated, cross-disciplinary synthesis of neurophysiological research in accounting and finance, highlighting common mechanisms, metrics, and decision contexts that have previously been examined in isolation. Second, it reframes neurophysiological methods as theory-enabling tools rather than methodological novelties, emphasizing their role in uncovering mechanisms underlying disclosure processing, incentives, ethical behavior, and risk perception. Third, it articulates a forward-looking research agenda that identifies high-impact opportunities for future work, thereby positioning neurophysiological research as a central pillar of behavioral inquiry in international accounting and finance.

2 | Methods

Consistent with established approaches to systematic reviewing in management research (Tranfield et al. 2003; Denyer and Tranfield 2009), our review combines transparent and replicable search and screening procedures with an interpretive synthesis aimed at theory development. In this sense, the review is systematic in how evidence is identified and selected, but interpretive in how studies are coded, compared, and synthesized into recurring mechanisms, decision contexts, and future research priorities.

Our article is guided by the following objectives, namely, (1) to examine how existing research employing neurophysiological methods within accounting and finance has investigated the relevant mechanisms, metrics, and international boundary conditions across decision contexts, and (2) to explore the future prospects of such methods in these fields. To this end, we sought to establish clear criteria for including or excluding studies and to specify the sources utilized in our research. We selected the Scopus and ISI Web of Science databases for their comprehensive collections of business research and their widespread use in literature reviews. To identify relevant articles, we utilized specific search terms derived from previous literature on neuroscience methods (Dimoka et al. 2012; Okumus et al. forthcoming) and more general terms related to eye tracking (e.g., pupillometry, eye movement) that are frequently employed in domain-specific studies (Butticè et al. 2022; Lynch and Andiola 2019;

Rose et al. 2022a). Although the identification of the methods included in the review was informed by the cited studies, the search strategy was deliberately kept broad by incorporating general keywords such as "neuro," "psychophysiological," and "brain imaging," thereby allowing additional methods to emerge inductively during the screening and coding process.[1]

The search using these terms initially yielded 799,434 articles written in English from Scopus and 383,984 from ISI Web of Science (as of March 1st, 2026). To ensure the inclusion of only high-quality articles, we filtered the results using the journals listed in the 2024 Academic Journal Guide of the Chartered Association of Business Schools, including the 2-, 3-, 4-, and 4* rankings across all subject areas. According to Cappa et al. (2026), we selected the ABS ranking to limit our search to top publications rather than other metrics, such as the impact factor, because this ranking considers both citation indicators and scholars' qualitative evaluations. This procedure reduced the data set to 4029 articles (thus excluding 1,179,389 items). We then removed duplicate records that appeared in both databases, thereby eliminating 1158 articles. To ensure the completeness of the data set, we cross-checked results against the articles included in prior literature reviews in accounting and finance. This cross-check against prior reviews also served as a practical robustness check on the coverage of the search strategy. Any study that was not retrieved through the initial search procedure (Black et al. 2024; Boot et al. 2022; Brink et al. 2020; Farrell et al. 2014; Kramer and Maas 2020; Król and Król 2019a, 2019b, 2019c; Ognjanovic et al. 2019; Shavit et al. 2010) was manually incorporated. This process led to the inclusion of additional articles not captured by the keyword-based search.

The next step involved screening studies against predefined inclusion and exclusion criteria. With respect to field focus, we retained only research explicitly examining accounting and finance and their main subfields, including banking, auditing, taxation, risk management, forecasting, and investment-related domains such as venture capital, private equity, crowdfunding, and investor behavior. Studies outside these domains were excluded, including research in psychology, microeconomics, information systems, marketing and communication, medicine and well-being, education, tourism, supply chain and transport, entrepreneurship, and human relations. With respect to methodology, we excluded studies that did not employ neurophysiological methods, as several acronyms used in the search process (e.g., SCR or PET) referred to non-neuroscientific concepts in other literatures or to specific terms, such as neuroticism, neural networks, and neurodiversity. The screening was conducted independently by both authors through title and abstract review, with full-text examination when relevance was unclear. Disagreements and ambiguous cases were resolved through iterative discussion until full consensus was reached. After applying all criteria, the final sample comprised 55 articles. Figure 1 summarizes the selection process.[2]

We developed the analytical framework by drawing on the criteria most commonly used in prior reviews of neurophysiological methods (Lynch and Andiola 2019; Meißner and Oll 2019; Okumus et al. forthcoming). The framework classifies studies according to the neurophysiological method employed, sample characteristics, metrics, and area of application. Sample characteristics and the accounting/finance orientation of the studies were coded primarily for descriptive interpretation and are reported in Appendix 1; Section 3 focuses instead on the mechanism-level synthesis that emerged from the review. To refine the framework, both authors independently conducted a manual coding of all articles to assess their suitability and to identify any necessary modifications, additions, or refinements to the selected criteria and attributes. This manual coding process allowed for nuanced interpretation of terminology and methodological descriptions that may be context-specific or implicit in the literature. The final framework was established through an iterative process of comparison, discussion, and consensus between the two authors.

To provide a descriptive overview of the results of our SLR, Figure 2 summarizes the distribution of published articles by CABS 2024 journal ranking. While a substantial number of studies employing neurophysiological methods appear in mid-tier journals (CABS 2 and 3, with 18 and 23 papers, respectively), the presence of 14 publications in CABS 4* journals indicates that the field has also gained traction within highly ranked journals. No article is published in CABS 4-ranked journals. This relatively balanced distribution suggests that, although research in this area is still developing, it is increasingly recognized by top-tier accounting and finance journals, highlighting both its growing academic legitimacy and its methodological appeal.

3 | Results

3.1 | Systems, Metrics, and Identification Issues

Section 3.1 establishes the methodological foundation for the mechanism-first synthesis that follows. Specifically, it clarifies which neurophysiological systems and metrics have been used in accounting and finance, why those metrics are often inferentially ambiguous, which design features improve identification, and which reporting cues should be used to assess evidential strength.

3.1.1 | Systems and Metrics: An Overview on Inference

Figure 3 shows the neurophysiological methods used in the reviewed studies, including eye-tracking, facial expression analysis, SCR, EKG, EEG, and fMRI. Eye-tracking is the most frequently employed technique (30 studies), followed by fMRI (11 studies). Facial expression analysis appears in only 6 studies, while more complex and resource-intensive methods, such as EEG (5 studies), SCR (2 studies), and EKG (1 study), are comparatively rare[3].

Building on prior reviews of eye-tracking and neurophysiological methods (Lynch and Andiola 2019; Okumus et al. forthcoming; Rotaru et al. 2025), Table 1 provides a structured overview of the mechanisms identified across the 55 articles included in the literature review, together with the applied methods and corresponding metrics used to capture them. Appendix 1 complements this overview by reporting the study-level operational definitions, sample characteristics, and key methodological controls coded for each article.

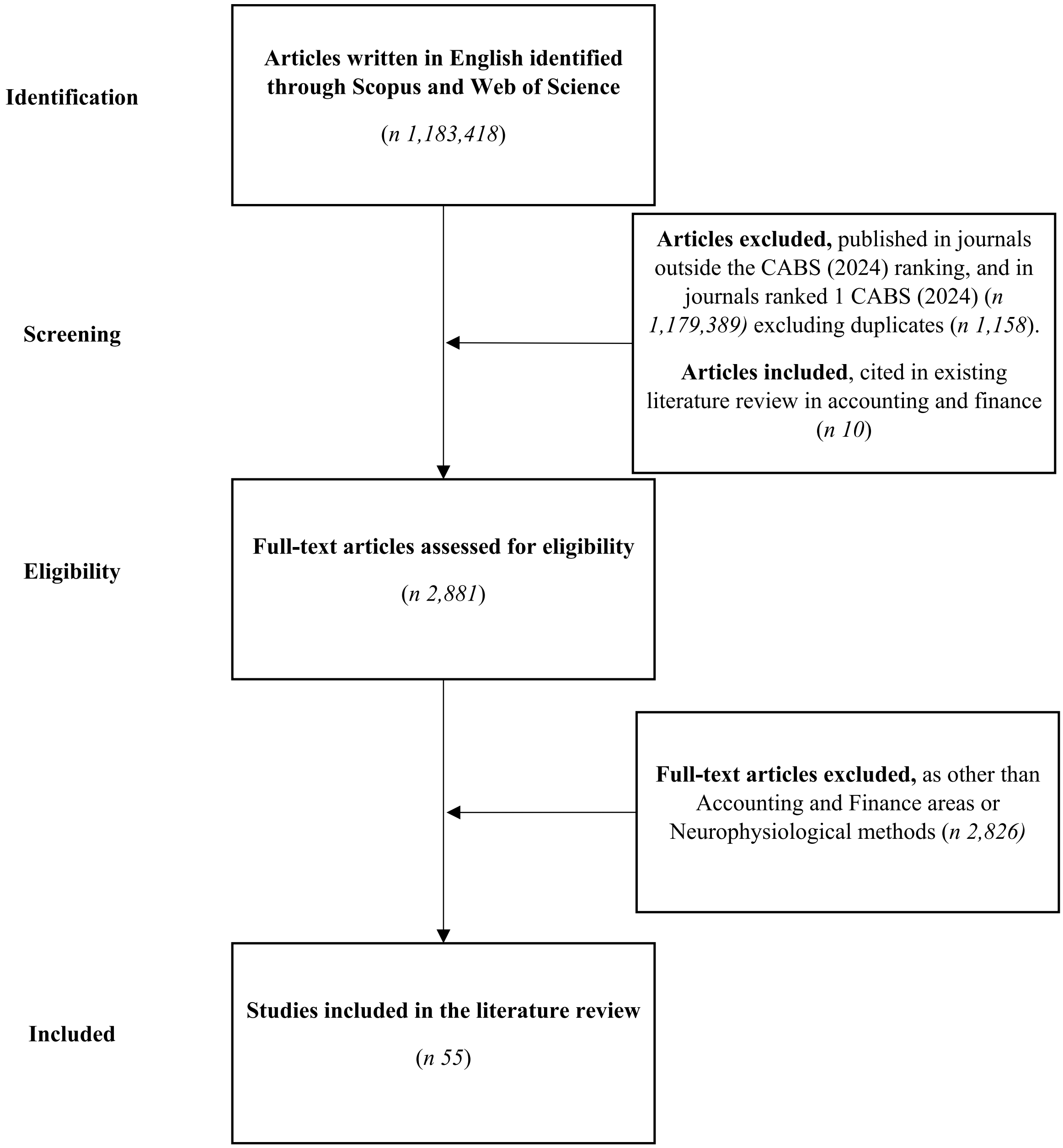

FIGURE 1 | Literature review steps.

Eye-tracking studies typically reports fixation duration and fixation count, time-to-first fixation, and dwell time within areas of interest (AOIs) (e.g., Butticè et al. 2022; Ceravolo et al. 2021; Chen et al. 2016; Fehrenbacher et al. 2018; Rose et al. 2022b). In several studies, these metrics are operationalized with clearly specified AOIs and explicit fixation thresholds, such as 200 ms in Ceravolo et al. (2021) and Kramer and Maas (2020), or 60 ms in Brink et al. (2020) and Fehrenbacher et al. (2018), which improves comparability across visual tasks and evaluation settings. More advanced eye-tracking applications extend beyond simple fixation-based metrics, including saccadic measures (e.g., Hecht et al. 2025; Toma et al. 2023) and pupillometry (e.g., Brink et al. 2020; Rose et al. 2022b; Rubaltelli et al. 2016) aligned to stimuli or decision phases. Importantly, however, operational detail varies substantially across studies. For example, Rose et al. (2022b) explicitly report a 60-s fixation-cross baseline and luminance equalization across devices, whereas several other pupillometry or eye-tracking studies do not describe luminance control, or filtering choices in comparable detail.

Facial expression analysis examines facial muscle activity, historically grounded in the Facial Action Coding System (Ekman and Friesen 1978), but increasingly implemented through computer-aided facial coding (Loijens and Krips 2018) that captures the frequency, intensity, and duration of facial expressions. Within our sample, this includes both laboratory studies using frame-by-frame emotional intensity measures (e.g., Brink et al. 2020) and archival or field-style applications using automated facial coding to infer investor or funder reactions from images or pitch videos (e.g., Jiang et al. 2019; Warnick et al. 2021). By contrast, autonomic measures remain less frequently used but are often conceptually attractive because they capture affective activation more directly. SCR

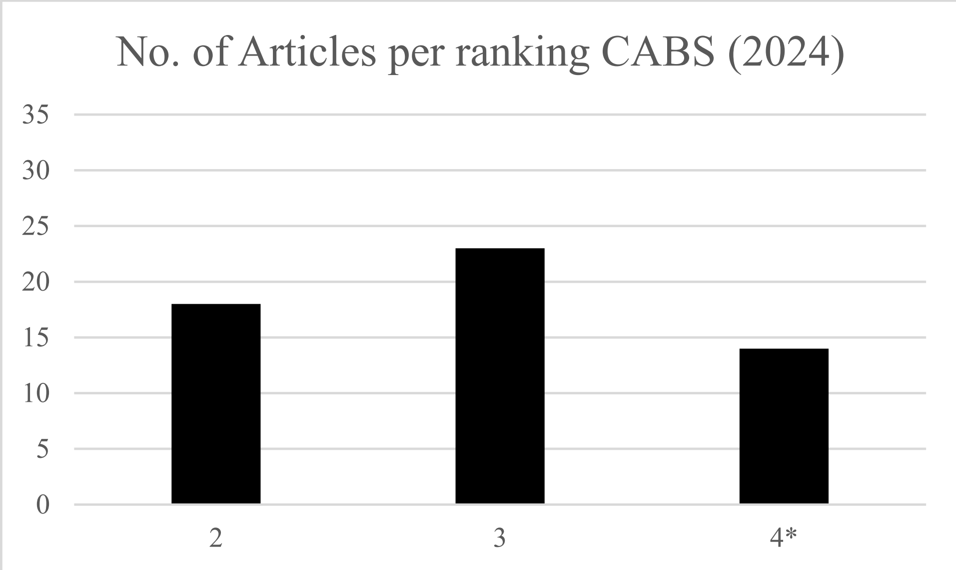

FIGURE 2 | No. of articles by CABS (2024) ranking.

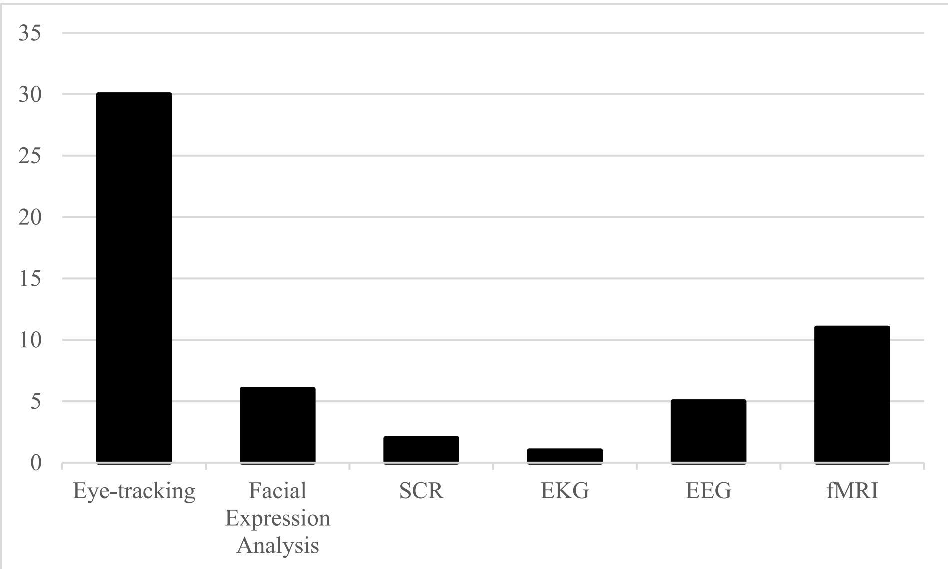

FIGURE 3 | No. of articles by the neurophysiological method.

metrics (i.e., onset, peak, amplitude) are used in different studies (e.g., Bossaerts et al. 2024; Coricelli et al. 2010; Lucarelli et al. 2015) according to reporting standards recommended by the Society for Psychophysiological Research (Boucsein et al. 2012). Heart rate variability, used in combination with SCR by Bossaerts et al. (2024), similarly draws on time-domain and frequency-domain indices, for which interpretation depends on disciplined measurement and reporting (Task Force of the European Society of Cardiology and the North American Society of Pacing Electrophysiology 1996).

EEG studies (Aslebagh et al. 2024; Eskenazi et al. 2016; H. Yang and Li 2017; Vieito et al. 2015) typically report measures including mu suppression, frequency-band power, and event-related potentials (ERP) (Picton et al. 2000). fMRI studies (e.g., Barton et al. 2014; Black et al. 2024; Farrell et al. 2014; Gibson et al. 2019; Mesly 2015; Slapničar et al. 2021) commonly report blood oxygen level-dependent (BOLD) responses, for which reporting checklists have been proposed to standardize transparency (Poldrack et al. 2008). Some studies further complement neural measures with non-neural biomarkers, such as salivary cortisol, to capture stress-related responses. At the same time, reporting quality is uneven across EEG and fMRI studies, ranging from designs that explicitly rely on standard preprocessing and contrast-based inference to studies where motion correction, smoothing, or multiple-comparison procedures are only partially described.

3.1.2 | *Interpretive Ambiguities: Why Metrics Are Not Mechanisms*

The central identification problem is that most neurophysiological metrics are many-to-one proxies: a single observed change can be consistent with multiple psychological

TABLE 1 | Mechanisms and metrics.

Neurophysiological method	Metric	Definition	Accounting illustrative papers	Finance illustrative papers
Panel A: Attention				
Eye-tracking	Fixation duration	The length of time of a single fixation. Studies also use a related measure, average fixation duration (average time of fixations within an AOI).	Brink et al. (2020); Chen et al. (2016); Fulmer and Gerard (2025); Kramer and Maas (2020); Rose et al. (2022b); Sirois et al. (2018)	Butticè et al. (2022); Ceravolo et al. (2021); Król and Król (2019b, 2019c); Münchhalfen and Gaschler (2021); Ognjanovic et al. (2019); X. Yang et al. (2024)
Eye-tracking	Number of fixations (aka fixation count)	The total count of fixations in an AOI. Studies also use a related measure, fixation rate (the number of fixations per second). Revisits (number of re-fixations per word), Recency (percentage of fixations after last visit to an AOI).	Boot et al. (2022); Brink et al. (2020); Chen et al. (2016); Dalla Via et al. (2019); Fulmer and Gerard (2025); Gajewski et al. (2025); Kramer and Maas (2020); Rose et al. (2022b); Sirois et al. (2018)	Badger et al. (2026); Ceravolo et al. (2021); Hellmann et al. (2017); Ko et al. (2024); Król and Król (2019b, 2019c); Münchhalfen and Gaschler (2021); Ognjanovic et al. (2019)
Eye-tracking	Time-to-first fixation	The time period from entering an AOI until the first fixation is made.	Gajewski et al. (2025); Sirois et al. (2018)	Ceravolo et al. (2021)
Eye-tracking	Total dwell time	The total amount of time an individual fixates within an AOI. Studies also use a related measure, relative dwell time (share of time per AOI), net dwell time, net dwell time percentage, normalized dwell time (sum of net dwell time/coverage).	Rose et al. (2022b)	Butticè et al. (2022); Ceravolo et al. (2021); Cornand et al. (2023); Duclos (2015); M. Gao et al. (2026); Hellmann et al. (2017); Ko et al. (2024); Król and Król (2019c); Shavit et al. (2010)
Eye-tracking	Number of saccades	The total number of rapid jumps of the eye between fixations to redirect the line of sight to a new location. Studies also use a related measure, saccade rate (the number of saccades per second).	n.a.	Hellmann et al. (2017); Toma et al. (2023); X. Yang et al. (2024)
Panel B: Level of processing				
Eye-tracking	Fixation duration	The length of time of a single fixation. Studies also use a related measure, average fixation duration (average time of fixations within an AOI).	Fehrenbacher et al. (2018); Fehrenbacher and Soderstrom (2025)	Hellmann et al. (2017); Ko et al. (2024); Król and Król (2019a)

(Continues)

TABLE 1 | (Continued)

Neurophysiological method	Metric	Definition	Accounting illustrative papers	Finance illustrative papers
Eye-tracking	Number of fixations (aka fixation count)	The total count of fixations in an AOI. Studies also use a related measure, fixation rate (the number of fixations per second). Revisits (number of re-fixations per word), Recency (percentage of fixations after last visit to an AOI).	Fehrenbacher et al. (2018)	n.a.
Eye-tracking	Total dwell time	The total amount of time an individual fixates within an AOI. Studies also use a related measure, relative dwell time (share of time per AOI), net dwell time, net dwell time percentage, normalized dwell time (sum of net dwell time/coverage)	n.a.	Król and Król (2019a)
Electroencephalography (EEG)	Information content per electrode	The amount of information provided by each electrode. Quantifies how much information each EEG channel provides about cognitive processing.	n.a.	Vieito et al. (2015)
Functional magnetic resonance imaging (fMRI)	Blood oxygen level-dependent (BOLD) signals	The spatial and temporal changes in blood oxygenation levels that occur as a consequence of neuronal activity.	Black et al. (2024); Farrell et al. (2014)	Gibson et al. (2019)
Panel C: Cognitive effort				
Eye-tracking	Fixation duration	The length of time of a single fixation. Studies also use a related measure, average fixation duration (average time of fixations within an AOI).	n.a.	J. Gao et al. (2023)
Eye-tracking	Total dwell time	The total amount of time an individual fixates within an AOI. Studies also use a related measure, relative dwell time (share of time per AOI), net dwell time, net dwell time percentage,	n.a.	Badger et al. (2026)

(Continues)

TABLE 1 | (Continued)

Neurophysiological method	Metric	Definition	Accounting illustrative papers	Finance illustrative papers
		normalized dwell time (sum of net dwell time/coverage).		
Eye-tracking	Number of saccades	The total number of rapid jumps of the eye between fixations to redirect the line of sight to a new location. Studies also use a related measure, saccade rate (the number of saccades per second).	Dalla Via et al. (2019)	n.a.
Eye-tracking	Saccade amplitude	The length or distance traveled by the eye between two fixation points.	Hecht et al. (2025)	n.a.
Eye-tracking	Saccade velocity	The speed of movement between two fixation points.	Hecht et al. (2025)	n.a.
Eye-tracking	Pupil diameter	The change in pupil size. An increase in pupil size is referred to as pupil dilation. A decrease is referred to as pupil constriction.	Hecht et al. (2025)	Król and Król (2019a); Rubaltelli et al. (2016)
Panel D: Affective/emotional arousal				
Eye-tracking	Saccade amplitude	The length or distance traveled by the eye between two fixation points.	n.a.	Toma et al. (2023)
Eye-tracking	Pupil diameter	The change in pupil size. An increase in pupil size is referred to as pupil dilation. A decrease is referred to as pupil constriction.	Brink et al. (2020); Rose et al. (2022b)	Toma et al. (2023)
Facial expression analysis	Number of facial action units indicative of expressions of emotions (e.g., anger, disgust, happiness, sadness, fear, surprise)	Facial Action Coding System describes facial movements through the use of 44 action units, defined as movement in one or more facial muscles. Discrete combinations of action units are indicative of expressions of corresponding discrete emotions.	n.a.	Davis et al. (2021); Dinçer et al. (2025); Rahadian et al. (2024); Warnick et al. (2021)
Facial expression analysis	Intensity of expressions of emotions	The "peak" moment (i.e., the moment when the intensity of an emotion is the highest).	n.a.	Jiang et al. (2019)

(Continues)

TABLE 1 | (Continued)

Neurophysiological method	Metric	Definition	Accounting illustrative papers	Finance illustrative papers
Facial expression analysis	Duration of expressions of emotions	The total length of time (in seconds) during which the facial expression reaches the peak level.	n.a.	Jiang et al. (2019)
Facial expression analysis	Number of changes in facial expressions of emotions	The total count of distinct transitions between different emotional facial expressions displayed by an individual.	n.a.	Warnick et al. (2021)
Skin conductance response (SCR)	SCR onset	The change of electrical properties of skin by a negative to positive zero crossing.	Coricelli et al. (2010)	Bossaerts et al. (2024); Lucarelli et al. (2015)
Skin conductance response (SCR)	SCR peak	The change of electrical properties of skin by a positive to negative zero crossing.	Coricelli et al. (2010)	n.a.
Skin conductance response (SCR)	SCR amplitude	The difference between the signal amplitude at the peak and the onset times.	Coricelli et al. (2010)	n.a.
Electrocardiogram (EKG)	Heart rate variability	The ability of the heart to change rates locally in time.	n.a.	Bossaerts et al. (2024)
Electroencephalography (EEG)	Frequency band, power (alpha, beta, gamma, delta, theta bands)	The amount of electrical activity (or energy) within specific ranges of brainwave frequencies. These ranges, called frequency bands, represent different types of neural oscillations associated with various cognitive and physiological states. Each band corresponds to a specific frequency range measured in Hertz (Hz), and the power within each band quantifies how strong or dominant that brainwave activity is over time.	n.a.	Aslebagh et al. (2024)

(Continues)

TABLE 1 | (Continued)

Neurophysiological method	Metric	Definition	Accounting illustrative papers	Finance illustrative papers
Functional magnetic resonance imaging (fMRI)	Levels of salivary cortisol (indirect)	The concentration of cortisol, a hormone released by the adrenal glands, in saliva samples.	n.a.	Mesly (2015); Mesly and Bouchard (2016)
Functional magnetic resonance imaging (fMRI)	Blood oxygen level-dependent (BOLD) signals	The spatial and temporal changes in blood oxygenation levels that occur as a consequence of neuronal activity.	Farrell et al. (2014); Slapničar et al. (2021)	Barton et al. (2014); Bossaerts (2009); Frydman et al. (2014); Mesly (2015); Mesly and Bouchard (2016); Shane et al. (2020)
Panel E: Learning				
Electroencephalography (EEG)	Feedback-related negativity	Time-domain measures of event-related potential (ERP) components derived from EEG data. ERPs reflect time-locked voltage changes in the EEG signal that occur in response to specific sensory, cognitive, or motor events.	n.a.	H. Yang and Li (2017)
Panel F: Moral/cognitive conflict				
Facial expression analysis	Emotional valence	The facial muscle activation regarding the type and intensity of emotions (e.g., negative, positive).	Brink et al. (2020)	n.a.
Facial expression analysis	Intensity of expressions of emotions	The "peak" moment (i.e., the moment when the intensity of an emotion is the highest).	n.a.	Zhang et al. (2023)
Functional magnetic resonance imaging (fMRI)	Blood oxygen level-dependent (BOLD) signals	The spatial and temporal changes in blood oxygenation levels that occur as a consequence of neuronal activity.		Seiler and Walden (2015); Chen and Yang (2026)
Panel G: Trust/Social cognition				
Electroencephalography (EEG)	Mu suppression	The associated weakening of the EEG signal that is due to the asynchronous firing of sensorimotor neurons.	Eskenazi et al. (2016)	n.a.

processes and multiple causal pathways. Pupillometry is the canonical example: pupil size constricts with light and near fixation and dilates with increases in arousal and cognitive effort; therefore, pupil dilation as a proxy for arousal is not warranted without design features that separate arousal from cognitive load and luminance confounds (Mathôt 2018; Kahneman and Beatty 1966). Similarly, fixation duration and dwell time can reflect attentional allocation, as well as reading difficulty, uncertainty, or strategic search; looking longer is not equivalent to processing more deeply unless supported by temporal dynamics (early orienting instead of late integration) and behavioral consequences (Holmqvist et al. 2011). For example, Chen et al. (2016) interpret longer fixation durations as greater attentional allocation, whereas Fehrenbacher and Soderstrom (2025) show that similar fixation patterns may also reflect cognitive processing, where a greater effort to process Environmental, Social, and Governance (ESG) information will result in longer fixation on the ESG information than on the financial information. Likewise, Kramer and Maas (2020) show that escalation bias in subjective performance evaluation is not mediated by differential visual attention to favorable versus unfavorable scorecard items, suggesting that attention-based explanations should not be assumed even when gaze data are available. In other words, the mere observation of more looking does not identify whether the underlying process is salience, conflict, difficulty, strategic integration, or post hoc justification.

Similar identification challenges arise for physiological arousal metrics. In Toma et al. (2023), pupil dilation is treated as an arousal indicator during trading, whereas Brink et al. (2020) explicitly combine pupillometry, eye-tracking, and facial expression analysis because pupil dilation alone cannot distinguish cognitive effort from emotional conflict. For SCR, phasic responses are closely tied to sympathetic arousal and are limited in their utility for valence inference unless paired with other measures and reported using recommended standards (Boucsein et al. 2012). Bossaerts et al. (2024) explicitly note that delayed and persistent physiological responses can confound event interpretation unless lag structures and calibration procedures are incorporated into the analysis. For EEG and fMRI, mapping from neural patterns to cognitive processes is vulnerable to multiplicity and reverse inference: inferring "process X" from activation in "region Y" is not deductively valid and depends on region selectivity and prior probabilities (Poldrack 2006). Thus, ambiguity is not an exception in this literature; it is the starting point from which credible inference must be built.

3.1.3 | *Design Features That Improved Identification: From Ambiguous Signals to Credible Inference*

Identification improves when studies do not treat neurophysiological signals as self-interpreting, but instead embed them in designs that actively separate competing explanations. Across the reviewed literature, some design features are especially important in this regard: triangulation across methods, time-locked process tracing, baselines and perceptual controls, and prespecified analysis plans. These features matter because most neurophysiological metrics remain compatible with multiple latent processes unless the research design narrows the inferential space.

A first route to stronger identification is triangulation across methods and outcomes. Studies that combine multiple neurophysiological measures with behavioral judgments are better positioned to distinguish alternative process accounts than studies relying on a single proxy. Brink et al. (2020), for example, combine eye-tracking, pupillometry, facial expression analysis, and behavioral judgments to examine how incentive conflicts shape earnings-management decisions. That design allows them to separate simple attentional allocation from heightened emotional conflict, rather than inferring both from pupil dilation alone. Rose et al. (2022b) similarly combine attention measures with pupil-based arousal responses and subsequent judgment outcomes, thereby making it possible to assess whether visualization choices alter what participants look at, how intensely they process it, and how those responses translate into evaluation quality. At the autonomic level, Bossaerts et al. (2024) strengthen identification by combining EKG- and SCR-based signals with market behavior, which allows them to distinguish anticipatory emotional engagement from reactive physiological responding. More generally, such designs improve identification because they do not ask one metric to bear the full interpretive burden.

A second feature is time-locked process tracing, which is particularly important when the same observable metric may correspond to different stages of cognition. In eye-tracking research, this means going beyond total viewing time to consider the sequence and timing of information acquisition. Early fixations may capture orienting or salience, while later refixations and transitions are more consistent with integration, conflict resolution, or verification. This distinction is visible in studies such as Gajewski et al. (2025), where time-to-first fixation, revisits, and fixation counts jointly illuminate how nudges redirect auditors' search toward diagnostic evidence, and in Badger et al. (2026), where headline placement alters the order in which investors process earnings-announcement content. More structured process tracing is also evident in Cornand et al. (2023), who examine relative dwell times across backward-looking, current, and forward-looking information in an asset-market setting, and in X. Yang et al. (2024), who separate attention to others' decisions from attention to private information in order to explain gendered herding behavior. For EEG studies, the same principle applies through event-related temporal decomposition. H. Yang and Li (2017), for instance, use ERP components tied to feedback processing to study trust cognition in venture-capital decisions, while Chen and Yang (2026) use an N400-like component to identify conflict between explicit and implicit Corporate Social Responsibility (CSR) attributions. In each case, identification is improved because the design links the timing of the neural or attentional response to a theoretically meaningful stage of the decision process.

A third feature is the use of explicit baselines and perceptual controls, which are indispensable when physiological signals are sensitive to low-level stimulus properties. This is particularly clear in pupillometry. Because pupil diameter responds not only to cognitive effort and affective arousal but also to luminance and contrast, studies that specify baseline construction and visual controls produce more credible inferences (Mathôt 2018; Mathôt et al. 2018). Rose et al. (2022b), for example, report a 60-s fixation-cross baseline and equalize luminance across devices, thereby strengthening their interpretation of pupil dilation as a response to uncertainty visualization rather than to low-level perceptual variation. Brink et al. (2020) also rely on baseline-normalized pupillary responses and pair them with facial-expression measures to better isolate conflict-induced arousal. At the autonomic level, Bossaerts et al. (2024) introduce an explicit calibration protocol before trading begins, which increases confidence that observed heart-rate variation reflects anticipatory engagement rather than arbitrary pre-task differences. Even in eye-tracking settings, perceptual discipline matters. Ceravolo et al. (2021) standardize stimulus presentation by using uniform backgrounds, font properties, and predefined AOIs, and normalize dwell time by AOI coverage, thereby improving comparability across disclosure sections. These examples illustrate that baselines and perceptual controls are not secondary technical details; they are central identification devices because they determine whether a measured response can plausibly be attributed to the intended mechanism.

A fourth feature is constrained analytical choice, including preregistration, ex ante specification of AOIs or regions of interest, and transparent reporting of exclusions and preprocessing. These features matter most for high-dimensional methods such as EEG and fMRI, but they also strengthen eye-tracking studies by limiting the scope for post hoc interpretation. Cornand et al. (2023), for example, explicitly preregister their design and behavioral conjectures, which is still unusual in this literature. X. Yang et al. (2024) improve interpretability by reporting calibration and validation thresholds for their social-attention task, while Ceravolo et al. (2021) predefine AOIs and tighten their significance threshold to account for multiple comparisons. In the neuroimaging domain, Farrell et al. (2014) use a within-subject fMRI design and then reinforce the inferential bridge through a separate behavioral replication, reducing the risk that neural contrasts are interpreted in isolation from observed choice. Barton et al. (2014) similarly link ventral striatal responses to actual earnings-surprise processing in an incentivized task, which makes the mapping from physiological activation to financial behavior more explicit. By contrast, studies that do not report baseline construction, preprocessing choices, exclusion rules, or artifact handling leave more room for interpretive ambiguity, even when their substantive contribution is potentially important. Identification is thus improved not only by sophisticated measurement, but by making analytical choices visible and theory-consistent.

Finally, sample type and setting should themselves be treated as identification-relevant design elements rather than as afterthoughts about external validity. Physiological responses observed in stylized student experiments can be informative, but their meaning may differ from similar responses observed among professionals or in higher-stakes, institutionally embedded tasks. Studies using professional participants, such as Eskenazi et al. (2016) and Slapničar et al. (2021), are particularly valuable because they tie neural or physiological responses to decisions that closely resemble real fiduciary and reporting conflicts. Likewise, studies that use realistic reporting artifacts (e.g., Ceravolo et al. 2021; Münchhalfen and Gaschler 2021; Sirois et al. 2018) enhance interpretability by embedding gaze patterns in materials that resemble actual investor or auditor information environments. Incentive-compatible tasks are equally important. Barton et al. (2014) and Bossaerts et al. (2024) are especially useful in this respect because they connect physiological responses to financially consequential behavior rather than to purely hypothetical preference statements. This does not mean that laboratory tasks with students are uninformative; rather, it means that ecological realism and incentive salience should be treated as part of the identification logic, because they affect what the physiological response is likely to mean.

3.1.4 | *Quality Appraisal Cues and Reporting Anchors: What to Code, What to Weight*

If Sections 3.1.2 and 3.1.3 clarify why neurophysiological metrics are often ambiguous and what design features strengthen identification, this subsection addresses a related question: what should readers systematically code when evaluating the strength of the evidence base? In the present review, five reporting anchors are especially important (i.e., statistical power, preprocessing transparency, inferential discipline, mechanism-relevant controls, and ecological validity) because each of them affects how much weight can reasonably be placed on a claimed link between signal and mechanism.

First, statistical power and sample structure are foundational. Low-powered neuroscience studies can yield inflated effect sizes and poor reproducibility (Button et al. 2013), and this concern is especially salient in costly methods that are often implemented with relatively small samples. In our sample, this issue is most visible in fMRI and EEG studies. Farrell et al. (2014) and Barton et al. (2014) mitigate some of this concern by using tightly structured designs and, in Farrell et al. (2014), a separate behavioral replication, whereas studies such as Mesly (2015) or Vieito et al. (2015) rely on smaller or less fully documented designs that leave more uncertainty about statistical fragility. By contrast, Lucarelli et al. (2015) show that psychophysiological research (e.g., eye-tracking, facial expression analysis, SCR) need not always be small-N, as they use a comparatively large sample to classify financial risk tolerance through SCR. What matters, therefore, is not only sample size in the abstract, but whether sample size, participant type, and design complexity are reported in ways that allow readers to judge evidential fragility.

Second, preprocessing transparency and inferential discipline are critical, particularly for EEG and fMRI. For fMRI, minimum reporting should include motion correction or exclusion criteria, multiple-comparison procedures, and a transparent preprocessing pipeline, as recommended by fMRI reporting guidelines (Poldrack et al. 2008). This matters because common cluster-based approaches can otherwise generate inflated false-positive rates under certain conditions (Eklund et al. 2016). Within the reviewed studies, Farrell et al. (2014) and Barton et al. (2014) provide relatively stronger inferential bridges between neural activation and behavioral outcomes, whereas studies such as Mesly (2015) provide more limited detail on preprocessing and correction procedures. A similar pattern appears in EEG and ERP studies. H. Yang and Li (2017) explicitly tie their interpretation to ERP components and report participant exclusions, whereas studies such as Aslebagh et al. (2024) and Vieito et al. (2015) provide more limited information about artifact handling, preprocessing, or time-window construction. Thus, for both EEG and fMRI, reporting quality is not a stylistic issue; it is central to whether the claimed cognitive interpretation can be evaluated and trusted.

Third, mechanism-relevant controls should be coded because many signals are highly sensitive to nontarget influences. For pupillometry, this means baseline construction and luminance or contrast control; for eye-tracking, it includes AOI specification, fixation thresholds, and comparability of visual stimuli; for autonomic measures such as SCR and EKG, it includes calibration, lag structure, and event linkage. Rose et al. (2022b) are especially informative in this respect because they report both a 60-s baseline and luminance equalization, while Brink et al. (2020) use baseline-normalized pupil responses and combine them with facial-expression data. Ceravolo et al. (2021) improve interpretability by standardizing stimulus presentation and defining AOIs ex ante, and Bossaerts et al. (2024) introduce an explicit calibration protocol together with conservative multiple-testing logic. By contrast, several other studies report neurophysiological outcomes with only partial information about blink handling, luminance control, filtering, or calibration. Coding these controls is therefore essential because they determine whether the observed metric can plausibly be interpreted as effort, arousal, attention, or conflict rather than as an artifact of display or measurement.

Fourth, multiple sources of triangulation should be weighted explicitly. The evidence base is more persuasive when physiological signals are linked to behavioral outcomes, self-reports, or complementary measures rather than interpreted in isolation. Brink et al. (2020), Rose et al. (2022b), Bossaerts et al. (2024), and Farrell et al. (2014) are all stronger in this respect because they connect neurophysiological responses to actual judgments, choices, or performance outcomes. By contrast, studies that rely on a single signal without behavioral validation provide weaker leverage for adjudicating between competing explanations. For review purposes, this means that triangulation should not simply be noted descriptively; it should influence how much evidential weight is assigned to a study's claims.

Finally, ecological validity cues should be coded because generalizability is particularly important in accounting and finance contexts. Professional samples, realistic reporting artifacts, incentive-compatible tasks, and field-relevant decision settings all increase confidence that measured responses correspond to mechanisms that matter outside the laboratory. Eskenazi et al. (2016) and Slapničar et al. (2021), for example, use professional participants in contexts closely connected to real fiduciary and reporting conflicts. Ceravolo et al. (2021), Münchhalfen and Gaschler (2021), and Sirois et al. (2018) use realistic disclosure or assurance materials, while Barton et al. (2014) and Bossaerts et al. (2024) link physiological responses to financially consequential behavior. These features do not automatically make a study stronger on every dimension, but they do affect the extent to which readers can generalize from measured signal to economically meaningful process.

3.2 | Neurophysiological Mechanisms in Accounting and Finance Decision-Making

This section develops a mechanism-first synthesis of the neurophysiological literature in accounting and finance by organizing prior studies around seven core mechanisms: attention, level of processing, cognitive effort, affective/emotional arousal, learning, moral/cognitive conflict, and trust/social cognition. Rather than treating neurophysiological tools as purely methodological extensions, this framework distinguishes between cases in which such evidence revises the underlying theoretical model of decision-making and cases in which it provides a more granular measurement layer for mechanisms already established in the behavioral literature.

Across these mechanisms, neurophysiological evidence is derived from multiple measurement systems, including eye tracking, EEG, fMRI, SCR, heart rate variability, facial expression analysis, and hormonal indicators. These systems generate specific metrics, such as fixation duration, pupil dilation, BOLD activation, ERP components, and facial action units, that are used to operationalize latent cognitive and affective processes.

Table 1 makes explicit the mechanisms identified across the 55 articles included in the literature review, together with the measurement systems and corresponding metrics used to capture them. By mapping each mechanism to the specific systems (e.g., eye tracking, EEG, fMRI) and metrics (e.g., fixation duration, pupil dilation, BOLD activation), the table provides a structured overview of how neurophysiological evidence has been operationalized in prior research and clarifies the empirical basis underlying the mechanism-first synthesis developed in this study.

The following sections examine each mechanism in turn, emphasizing both its theoretical role in decision-making and the extent to which neurophysiological evidence contributes to refining or revising existing models.

3.2.1 | *Attention*

The attention mechanism captures the selective allocation of visual resources across available information (e.g., dashboards, disclosures, reports, interfaces) and represents one of the clearest cases in which neurophysiological evidence revises, rather than merely refines, traditional behavioral models. In standard accounting and finance frameworks, decision makers are typically assumed to process available information in a relatively uniform manner, with differences in judgment attributed to weighting schemes or preferences. However, eye-tracking evidence fundamentally challenges this assumption by demonstrating that information must first enter the attentional field to influence decisions.

Attention is primarily inferred from eye-tracking metrics computed from gaze traces, including fixation duration and count, time-to-first fixation, total dwell time, and the number of saccades. Studies such as Chen et al. (2016) show that managerial judgments in balanced scorecard settings depend on the distribution of visual attention across strategically linked measures, while Sirois et al. (2018) document that key audit matters redirect users' attention and reshape information acquisition processes. Similarly, research in financial decision-making contexts (e.g., J. Gao et al. 2023; X. Yang et al. 2024; Duclos 2015) shows that incentives, presentation formats, and social information influence where attention is directed, which in turn alters downstream choices. Attention is also central for diagnosing trading mechanisms such as herding, where experimental incentives can shift gaze toward others' actions and thereby help explain observed convergence of choices (J. Gao et al. 2023).

Eye tracking is further used to study attention allocation processes underlying anchoring and sequence effects in investment decisions (Duclos 2015), while X. Yang et al. (2024) demonstrate how fixation and saccade patterns operationalize social-attention allocation that predicts trading choices. Evidence from Ognjanovic et al. (2019) shows that environmental factors, such as display clutter, modify the distribution of attention and impair the consistency of judgment.

Across these studies, attention emerges not simply as a descriptive measure of information search, but as a binding cognitive constraint that determines which information is processed at all. Thus, neurophysiological evidence in these studies revises the theoretical model by introducing attention as a necessary intermediate mechanism between information availability and decision outcomes. Importantly, because fixation-based metrics may also reflect deeper processing or cognitive effort, attention inferences are strongest when studies isolate selection effects through design features such as AOI analysis, temporal sequencing, or mediation structures (Chen et al. 2016).

3.2.2 | Level of Processing

The level of processing mechanism captures the depth and mode of cognitive elaboration applied to information, ranging from superficial scanning to deliberate, analytical reasoning. Using eye-tracking and brain imaging systems, such as EEG and fMRI, this mechanism is operationalized through metrics including fixation duration, fixation count, dwell time (as proxies for elaborative reading/encoding), and neural activation patterns such as BOLD signals or EEG-derived measures associated with information integration.

In contrast to attention, neurophysiological evidence in this domain primarily serves to refine and validate existing dual-process theories, rather than fundamentally altering them. Behavioral literature has long distinguished between intuitive (System 1) and deliberative (System 2) processing; neurophysiological methods make these processes observable and measurable. For example, in accounting, Farrell et al. (2014) show using fMRI that performance-based incentives induce greater engagement of deliberative processing in affective decision contexts, while Black et al. (2024) demonstrate that increased neural activation and longer response times are associated with reduced surrogation, indicating deeper cognitive engagement with strategic objectives.

Eye-tracking studies in finance (e.g., Hellmann et al. 2017; Ko et al. 2024) further reveal how presentation formats influence the depth of processing by shaping how individuals integrate financial and nonfinancial information (Ko et al. 2024). Additional evidence strengthens this perspective: Fehrenbacher et al. (2018) use eye-tracking-derived measures to examine how decision-modes moderate subjective performance evaluation, while Gibson et al. (2019) combine fMRI with experimental trading settings to highlight how neural activity reflects deeper cognitive engagement with gain/loss structures and realization utility processes.

These studies provide unprecedented granularity in observing cognitive processes, but they largely confirm and operationalize pre-existing theoretical distinctions. Accordingly, neurophysiological evidence enhances mechanism validity and measurement precision in this mechanism without fundamentally revising its theoretical foundations.

3.2.3 | Cognitive Effort

The cognitive effort mechanism captures the intensity of mental resources deployed during decision-making tasks and is operationalized through eye-tracking and pupillometry metrics that are sensitive to processing demands, including fixation duration, dwell time, number of saccades, saccade amplitude/velocity, and pupil diameter.

Similar to the level of processing, neurophysiological evidence in this domain primarily enhances measurement rather than revising theory, although it introduces important refinements in how effort is conceptualized and observed. Traditional accounting and behavioral theories conceptualize effort as a latent mechanism inferred indirectly from performance or self-reports. Recent studies provide direct physiological proxies, most notably pupillometry. Hecht et al. (2025) explicitly position pupil dilation as a direct measure of effort intensity in management accounting and show that it mediates the relationship between incentives and performance.

Complementary finance evidence from J. Gao et al. (2023) indicates that reduced readability increases processing difficulty and alters visual search behavior, while Dalla Via et al. (2019) show that accountability structures influence information search effort. Eye-tracking studies, such as those by Król and Król (2019a), further demonstrate that effort varies systematically with information congruence and bias, highlighting the dynamic nature of cognitive resource allocation.

Because pupil diameter is also a classic marker of affective arousal, studies focusing on effort provide the strongest interpretations when task manipulations primarily target cognitive demand and when mediation or temporal patterns are consistent with resource mobilization rather than emotional activation (Hecht et al. 2025). These findings do not overturn existing theoretical frameworks but provide direct, real-time measurements of effort dynamics, allowing researchers to disentangle effort intensity from other cognitive processes, such as attention or affect.

3.2.4 | *Affective/Emotional Arousal*

The affective and emotional arousal mechanism captures the intensity of affective activation (e.g., emotions, stress, and engagement) accompanying financial and accounting decisions. It is operationalized using multisystem physiological measures, including eye-tracking-derived pupil diameter, facial expression metrics (i.e., FACS action unit counts, intensity, duration, changes), SCR (i.e., timing/peak/amplitude), EKG-derived heart rate variability, EEG frequency bands, salivary cortisol, and fMRI-based neural activation.

This mechanism represents a domain in which neurophysiological evidence substantially revises theoretical models of decision-making. Traditional economic and accounting models often treat preferences as stable and exogenous, whereas behavioral models incorporate affect only in limited or indirect ways. Neurophysiological evidence demonstrates instead that emotional arousal is a core mechanism shaping behavior, particularly through its timing and intensity.

For instance, in trading environments, Bossaerts et al. (2024) show that anticipatory physiological responses (e.g., heart rate changes) are associated with improved trading performance, whereas reactive responses are detrimental. Coricelli et al. (2010) demonstrate that emotional arousal, measured via skin conductance, predicts tax evasion behavior and reactions to enforcement policies. Using an fMRI system, Barton et al. (2014) show that neural reward-system activation explains market reactions to earnings announcements, finding asymmetric reactions to positive versus negative surprises and associations with market outcomes such as risk-adjusted returns and abnormal trading.

Research on facial expressions (e.g., Warnick et al. 2021; Jiang et al. 2019; Davis et al. 2021) shows that emotional displays influence funding outcomes in entrepreneurial finance settings, while Shane et al. (2020) demonstrate that founder passion increases neural engagement and investment interest. In accounting, Brink et al. (2020) further illustrate that incentive conflicts heighten arousal and negative emotions, which subsequently affect earnings management decisions.

These findings shift the theoretical perspective from static preference models to dynamic, state-dependent decision processes in which physiological activation plays a causal role. Methodologically, because arousal measures are physiologically broad, mechanism validity is strongest when studies combine arousal metrics with theoretically grounded task manipulations (e.g., earnings surprises, sanctions/public exposure, passion displays) and use temporal modeling to separate anticipatory from reactive activation (Bossaerts et al. 2024).

3.2.5 | *Learning*

The learning mechanism captures feedback-driven updating processes and represents a domain in which neurophysiological evidence extends and deepens existing theoretical models. While learning has long been modeled behaviorally through reinforcement and belief updating, neurophysiological measures provide direct evidence of the underlying mechanisms, particularly through neural responses to prediction errors.

ERPs, such as the feedback-related negativity (FRN), capture neural responses to discrepancies between expected and realized outcomes. H. Yang and Li (2017) integrate EEG evidence with behavioral learning models in a venture capital context, showing that investment decisions evolve through feedback, trust cognition, and experience, particularly under conditions of ambiguity or uncertainty.

This mechanism is conceptually distinct from attention and arousal, as it focuses on dynamic updating over time rather than momentary allocation or activation. Neurophysiological evidence links feedback processing directly to learning-model parameters, allowing researchers to observe how decision makers adjust beliefs and strategies across repeated interactions. Although the current evidence base is relatively limited compared to other mechanisms, it provides direct biological validation of reinforcement learning processes and strengthens existing theoretical frameworks.

3.2.6 | *Moral/Cognitive Conflict*

The moral and cognitive conflict mechanism is one of the strongest examples of mechanism-revising evidence, as it introduces latent conflict processes (e.g., tensions between moral norms and financial incentives or between implicit and explicit cognition) that are not directly observable through behavior alone. Traditional models of ethical decision-making typically assume stable preferences or conscious trade-offs. Neurophysiological evidence instead reveals that decisions often involve implicit conflicts between automatic and controlled processes.

Chen and Yang (2026) identify an N400-like ERP component that reflects conflict between implicit and explicit CSR motive attributions, demonstrating that such conflict arises even when individuals report consistent explicit judgments. Zhang et al. (2023) show that prior CSR can either aggravate or buffer emotional and moral reactions depending on whether corporate misconduct is intentional or accidental. Seiler and Walden (2015) provide fMRI evidence that strategic mortgage default decisions involve cognitive dissonance between financial incentives and moral norms, while Brink et al. (2020) show that conflicting incentives generate negative emotional responses that influence managerial decisions.

These findings emphasize that conflict is not merely a manifestation of negative emotion, but a representational mismatch and motivational tension that mediate downstream judgments and choices (Chen and Yang 2026). As such, this mechanism involves simultaneous, competing representations that fundamentally enrich theoretical models by introducing implicit conflict as a core driver of decision-making.

3.2.7 | *Trust/Social Cognition*

The trust or social cognition mechanism centers on social-perceptual processes that support empathy, mimicry, and susceptibility to interpersonal influence. It is operationalized through brain imaging measures such as EEG-based mu suppression, which indexes activity in the human mirror neuron system, as well as through facial perception and neural activation patterns associated with social evaluation.

This mechanism represents a hybrid case in which neurophysiological evidence both refines measurement and extends theory. Traditional models conceptualize trust as a belief about others' intentions or characteristics; neurophysiological evidence reveals how such beliefs are formed through automatic social-cognitive processes. Eskenazi et al. (2016) show that mirror neuron system activity predicts susceptibility to managerial pressure and misreporting, particularly when that pressure serves the manager's personal interests rather than organizational interests. In this sense, this mechanism is not a broad attitudinal trust mechanism; it is a neurobiologically grounded account of social susceptibility and of interpersonal influence pathways that can undermine adherence to fiduciary roles, thereby extending existing theoretical frameworks.

3.3 | Decision Contexts and International Boundary Conditions

The mechanism-first synthesis developed in the previous section does not imply that neurophysiological evidence accumulates independently of context. Rather, the reviewed studies show that the same mechanisms (i.e., attention allocation, level of processing, cognitive effort, affective arousal, learning, moral/cognitive conflict, and trust or social cognition) become salient in recurring decision environments and may operate differently depending on the institutional setting. Accordingly, we reorganize the evidence into four broader decision contexts that are more directly aligned with international financial management and accounting, and identify the international boundary conditions likely to shape their operation. A first context concerns "disclosure and reporting environments," where users interpret accounting-generated information under varying levels of complexity, salience, and comparability. Across the reviewed studies, visual attention and processing effort are shaped by disclosure format, readability, sequencing, and the relative salience of financial and nonfinancial (e.g., ESG) cues. For example, Hellmann et al. (2017) show that presentation order and graphical display influence how nonprofessional investors process management-report information, while Badger et al. (2026) show that the presence of key financial information in the headline section of earnings announcements anchors subsequent reading and valuation. Similarly, J. Gao et al. (2023) show that CSR readability changes reading strategies and earning estimates, and Fehrenbacher and Soderstrom (2025) show that ESG metrics attract longer visual processing than financial metrics, particularly when users are less familiar with how those disclosures should be interpreted. Other studies further indicate that document structure and interface design matter: Ceravolo et al. (2021) and Münchhalfen and Gaschler (2021) show how standardized investor disclosure documents channel attention toward specific sections, Ko et al. (2024) demonstrate that presentation format influences how nonprofessional investors allocate attention across financial and nonfinancial information, and Fulmer and Gerard (2025) show that misdirecting visual cues and alternative terminology impair digital financial statement search efficiency. Concluding, these studies indicate that disclosure effects should not be treated as purely technical presentation issues. In international settings, however, these effects are unlikely to be stable. Reporting regimes differ in standardization, enforcement, language, disclosure traditions, and the degree to which narrative and nonfinancial reporting are integrated into statutory reports. As a result, the same neurophysiological pattern, such as longer fixations, may indicate different underlying processes across International Financial Reporting Standards and United States settings, across mandatory and voluntary ESG environments, or across single-language and translation-heavy disclosure contexts. This context is therefore especially important for international financial management and accounting, as it allows researchers to examine whether neurophysiological mechanisms explain documented cross-country differences in disclosure use, comparability, and investor responses.

A second context concerns "assurance, control, and managerial evaluation settings," where accounting information is used to evaluate subordinates, allocate resources, design incentives, or support audit judgments. Here, the dominant mechanisms are attention allocation, level of processing, and cognitive effort. Chen et al. (2016) show that managers who allocate more attention to strategically linked balanced-scorecard measures make judgments that are more consistent with strategic objectives. Fehrenbacher et al. (2018) show that more deliberate decision modes reduce spillover bias in subjective performance evaluations, while Dalla Via et al. (2019) show that process accountability changes information-search effort and improves decision quality in balanced-scorecard-based investment settings. In auditing, Rose et al. (2022b) show that uncertainty visualization changes both psychophysiological responses and audit judgments, and Gajewski et al. (2025) show that nudges can redirect auditors' visual attention toward diagnostic evidence and strengthen professional skepticism. Yet, these mechanisms are also likely to depend on boundary conditions such as governance structures, accountability regimes, cultural norms regarding authority and dissent, audit inspection intensity, and the technological sophistication of organizational control systems. Cross-country variation in these institutional features is therefore likely to influence not only how much attention is paid to specific cues, but also whether such attention translates into better judgment. This context offers a particularly strong bridge between accounting and finance by linking internal control, evaluation, and assurance processes to broader institutional variation in monitoring and credibility. This bridge can be illustrated through the attention mechanism. In finance-oriented disclosure settings, salience manipulations such as presentation order, headline prominence, and visual format affect which information investors attend to first and how subsequent judgments are formed. In accounting-oriented evaluation settings, the same mechanism helps explain why managers and auditors allocate attention selectively across strategically linked or diagnostically relevant cues, with downstream effects on performance evaluation and professional judgment. If the two domains truly share the same underlying mechanism, comparable manipulations of salience, ordering, or cue prominence should generate similar attentional and judgment patterns across contexts; if they do not, differences should emerge once institutional roles, incentives, or decision environments change.

A third context concerns "taxation, ethics, and compliance," where neurophysiological methods help reveal how decision makers experience emotional arousal, moral conflict, and trust/social cognition. Coricelli et al. (2010) show that tax-evasion decisions are associated with stronger emotional arousal, particularly when public exposure is possible, indicating that compliance is shaped not only by expected penalties but also by anticipatory and experienced emotions. Eskenazi et al. (2016) show that controllers' susceptibility to managerial pressure is associated with variation in mirror-neuron-system functionality, while Slapničar et al. (2021) show that willingness to violate fiduciary duties correlates with neural activity in regions associated with cognitive empathy rather than affective empathy. Brink et al. (2020) add that conflicting compensation structures generate higher arousal and stronger negative emotions, which in turn reduce willingness to engage in real earnings management. In financial-advisory and debt contexts, Seiler and Walden (2015) interpret strategic mortgage default through neural patterns associated with cognitive dissonance and self-reflection. These studies suggest that ethical and compliance choices are not adequately explained by incentive payoffs alone.

Moreover, these processes are inherently sensitive to cross-country differences in tax morale, legal enforcement, social norms, corruption perceptions, and the legitimacy attributed to regulatory institutions. Public exposure, shaming mechanisms, peer accountability, and institutional trust are therefore not merely contextual details; they are theoretically important moderators of the mechanism–behavior link. This makes taxation and compliance a particularly promising area for extending neurophysiological research into explicitly international designs.

A fourth context concerns "investment, risk, and financial intermediation," where the reviewed studies show that attention, emotional arousal, level of processing, and learning shape investor behavior, market decisions, and funding outcomes. Several studies in finance focus on risk-taking and trading performance. Toma et al. (2023) show that eye-tracking-based arousal and attention measures predict returns in a simulated bubble market; Lucarelli et al. (2015) show that anticipatory skin conductance outperforms self-reports in classifying financial risk tolerance; Aslebagh et al. (2024) and Vieito et al. (2015) show that EEG patterns vary with investor experience, personality, and market regime; and X. Yang et al. (2024) show that social attention helps explain gendered herding patterns under different incentive schemes. Other studies emphasize emotional engagement and valuation. Bossaerts et al. (2024) show that anticipatory heart-rate dynamics and skin conductance are associated with trading performance, while Barton et al. (2014), Frydman et al. (2014), and Gibson et al. (2019) show that neural valuation processes react to earnings news, realized gains and losses, and skewed risk profiles. Intermediation is also central in entrepreneurial and venture-finance settings. Butticè et al. (2022) show that equity crowdfunders do not attend uniformly to observable campaign signals; Davis et al. (2021) and Warnick et al. (2021) show that facial emotional displays affect micro-lending and crowdfunding outcomes; Jiang et al. (2019) link the intensity and timing of displayed joy to funding success; and Shane et al. (2020) show that founder passion increases neural engagement and investor interest. However, these relationships are unlikely to generalize uniformly across settings. Market development, investor protection, financial literacy, disclosure infrastructure, and platform design vary across jurisdictions and are likely to influence whether the same physiological signal indicates confidence, confusion, trust, or speculative engagement.

Taken together, these decision contexts should be treated as the applied surface on which mechanisms operate, not as independent literatures. This distinction matters because it clarifies the structure of the review. Section 3.1 established what can be measured and with what inferential limits. Section 3.2 synthesized what those measures reveal about underlying mechanisms. This section shows where those mechanisms become consequential for international financial management and accounting, and why international and institutional variation is not peripheral but central to future theory development. Figure 4 illustrates a mechanism-based framework for neurophysiological research in international financial management and accounting.

4 | A Prioritized Research Agenda for International Financial Management and Accounting

Based on the studies reviewed, Table 2 presents a prioritized agenda organized around eight high-impact research programs, ordered according to their theoretical leverage, their ability to exploit international and institutional variation for identification, and their likely publishability in accounting and finance outlets. These programs are ordered by their potential to generate mechanism-level insight, exploit international or institutional variation, and produce publishable contributions at the intersection of accounting and finance. In each case, the central issue is not simply whether neurophysiological methods can be applied, but whether they can adjudicate between competing explanations in ways that materially shift the field's theoretical stance.

4.1 | Disclosure Comparability Across Reporting Regimes

A first high-priority program concerns whether standardized reporting regimes actually improve comprehension, comparability, and judgment quality, or merely alter the sequence and salience of information acquisition. Existing work shows that format, readability, visualization, and ordering affect attention and processing effort, but it remains unclear whether these effects reflect improved understanding or only more efficient cue extraction. Cross-country comparisons between different disclosure regimes (e.g., IFRS-based environments, US reporting formats, and emerging ESG labeling regimes) would provide especially strong tests. Neurophysiological methods can identify whether standardization reduces cognitive load, shifts attention toward more diagnostic cues, or instead creates superficial fluency

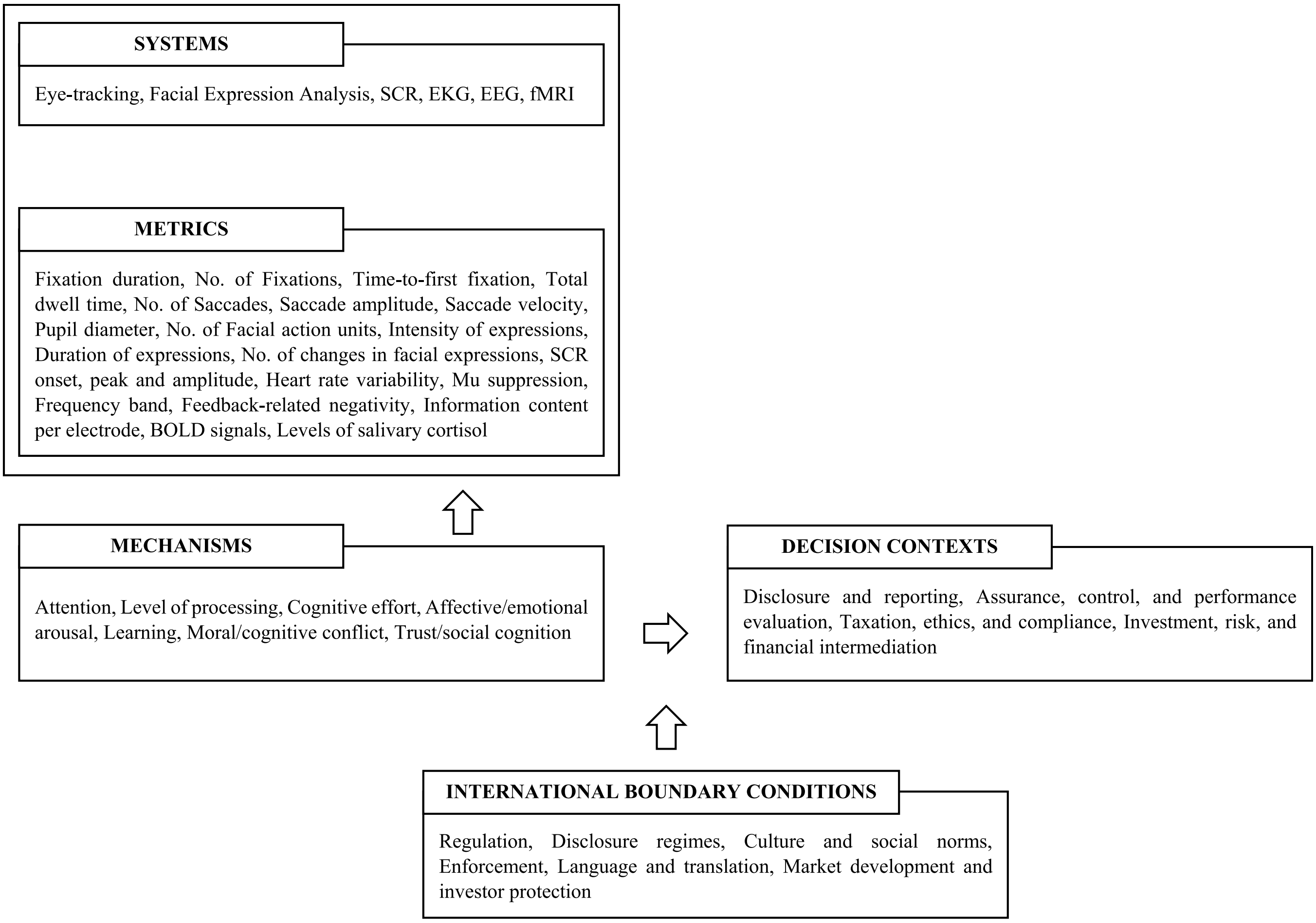

FIGURE 4 | A mechanism-based framework for neurophysiological research in international financial management and accounting.

without deeper integration. Findings from such designs would matter theoretically because they would clarify whether disclosure standardization changes the decision process itself or merely changes the ease with which existing heuristics are applied.

4.2 | Language, Translation, and Cognitive Accessibility in International Reporting

A second high-impact program concerns the role of language and translation in international financial communication. Multinational reporting environments often require users to process disclosures in a second language or in translated form, yet existing accounting and finance research rarely observes the cognitive mechanisms through which translation affects judgment. Neurophysiological measures could be used to distinguish language-related processing costs from substantive information effects. For instance, eye-tracking and pupillometry can reveal whether translation changes early orienting, re-reading, or cognitive effort, while behavioral judgments can show whether those changes matter for valuation, risk assessment, or credibility. This program is theoretically important because it would move beyond treating language as a background feature and instead model it as a mechanism-relevant source of heterogeneity in international reporting outcomes.

4.3 | Enforcement and Assurance as Credibility Mechanisms

A third program should examine how enforcement intensity, audit strength, and assurance design shape the neurophysiological processing of credibility signals. The current literature shows that users respond to key audit matters, managerial narratives, and social signals from evaluators or superiors, but it remains unresolved whether such responses reflect genuine updating, threat monitoring, reputational concern, or deference to authority. Cross-jurisdictional variation in enforcement quality, inspection regimes, litigation risk, and assurance traditions provides a powerful identification opportunity. Neurophysiological methods could test whether stronger enforcement environments attenuate emotional uncertainty, increase diagnostic attention, or reduce susceptibility to persuasive framing. Such work would extend both accounting and finance theory by clarifying whether institutional credibility operates primarily through trust, conflict reduction, or more deliberate processing.

4.4 | ESG Standardization, Metric Ambiguity, and Investor Interpretation

A fourth program should focus on ESG information, where the reviewed evidence already suggests higher processing effort and interpretive ambiguity. The unresolved issue is whether ESG

TABLE 2 | A prioritized research agenda for international financial management and accounting.

Research program	Unresolved issue	International/institutional leverage	Suitable neurophysiological design	Expected theoretical contribution
1. Disclosure comparability across reporting regimes	Does disclosure standardization improve genuine comprehension or merely change salience and search efficiency?	IFRS or US formats; mandatory or voluntary ESG reporting; differing disclosure templates	Eye-tracking and pupillometry and behavioral valuation/forecast tasks across matched disclosure regimes	Clarifies whether standardization changes decision processes or only lowers search costs
2. Language, translation, and cognitive accessibility	Do translated or second-language disclosures alter attention, effort, and judgment quality?	Native-language or translated reports; multilingual reporting environments; cross-country investor samples	Eye-tracking, re-reading patterns, pupil dilation, forecast/valuation outcomes	Positions language as a mechanism-relevant determinant of international reporting effects
3. Enforcement and assurance as credibility mechanisms	Do strong assurance and enforcement environments reduce uncertainty through trust, conflict reduction, or more deliberate processing?	High or low enforcement jurisdictions; differing audit oversight regimes; litigation environments	Eye-tracking and EEG/fMRI and behavioral assurance-use judgments	Explains how institutional credibility affects cognitive processing of accounting information
4. ESG standardization and metric ambiguity	When does ESG information become cognitively integrated rather than merely attended to?	Jurisdictions with different ESG mandates, assurance requirements, and metric regimes	Eye-tracking and pupillometry and post-task comprehension and weighting judgments	Distinguishes novelty, difficulty, and materiality explanations in ESG processing
5. Digital reporting interfaces and AI summarization	Do dashboards, digital filings, and AI summaries reduce overload or intensify anchoring and superficial processing?	Different technological infrastructures; platform-based disclosure access; AI-assisted reporting environments	Eye-tracking, pupillometry, clickstream/search-path analysis, judgment accuracy	Extends disclosure theory to digital intermediation and human–AI information processing
6. Incentives, accountability, and organizational design	Do incentive systems work by increasing effort, shifting attention, or heightening internal conflict?	Cross-country differences in compensation norms, accountability cultures, and control systems	Pupillometry and eye-tracking and behavioral choice under varying incentive/accountability regimes	Moves incentive research from outcome effects to mechanism-based organizational design
7. Ethics, taxation, and public exposure	Does compliance respond primarily to fear, shame, moral conflict, or more deliberate reasoning?	Variation in tax morale, public exposure norms, legal legitimacy, and corruption perceptions	SCR/EKG and facial expression and behavioral compliance tasks and cross-country comparisons	Integrates accounting ethics and compliance research with mechanism-level emotional evidence
8. Risk perception, trust, and market development	Are physiological responses to risk and trust stable traits or context-sensitive states shaped by institutions?	Differences in investor protection, market development, financial literacy, and advisory regimes	SCR/EKG/fMRI and behavioral risk tasks and disclosure manipulations	Strengthens the bridge between accounting information, perceived risk, and market behavior

disclosures become decision-useful through standardization and familiarity, or whether they remain cognitively costly because they combine heterogeneous metrics, weakly shared benchmarks, and nonfinancial units of analysis. This question is particularly suited to international designs because ESG mandates and assurance requirements are evolving unevenly across jurisdictions. Neurophysiological methods can help identify whether the same disclosure feature triggers attention because it is novel, because it is difficult, or because it is perceived as consequential. Theoretical progress in this area would not come from showing that ESG matters, which is already known, but from isolating the conditions under which ESG information becomes cognitively integrated rather than merely attended to.

4.5 | Digital Reporting Interfaces, AI Summarization, and Information Overload

A fifth program concerns the increasing digitization of accounting and financial information. Investors, analysts, auditors, and managers now interact not only with annual reports and formal disclosures, but also with dashboards, structured data platforms, machine-generated summaries, and AI-mediated interfaces. Existing evidence suggests that visual-semantic interference, formatting, and cue salience already shape information search. The next step is to test how digital intermediation changes mechanism-level processing. Do AI summaries reduce overload while preserving diagnostic attention, or do they intensify anchoring and discourage deeper processing? Do interactive interfaces improve selective search, or do they fragment attention across competing information streams? Neurophysiological methods are well-suited to these questions because they can observe the trade-off between efficiency and processing depth in real time. This program has high practical relevance and strong publication potential because it links emerging technology directly to decision-usefulness and governance.

4.6 | Incentives, Accountability, and Organizational Design Across Institutional Settings

A sixth program should revisit incentives and accountability, but in a more explicitly comparative way. Current evidence indicates that performance-based incentives, accountability structures, and compensation design affect effort, attention, and emotional conflict. What remains unresolved is whether these relationships are stable across institutional environments with different compensation norms, labor protections, internal control systems, and managerial cultures. Neurophysiological methods can reveal whether incentives alter decision-making by increasing effort, shifting attentional priorities, suppressing affect-driven responding, or heightening internal conflict. Cross-country and cross-organization designs would help identify whether these mechanisms differ in settings where incentive intensity, authority relations, and social accountability norms vary. This would move incentive research beyond outcomes and toward a more process-based and institutionally contingent theory of managerial effort and control.

4.7 | Ethics, Taxation, and Public Exposure Under Varying Regulatory Salience

A seventh program should develop a more comparative neurophysiological literature on ethics, taxation, and compliance. Current studies show that cheating, tax evasion, and fiduciary compromise are associated with emotional and cognitive conflict, but the field still lacks a sharper account of how institutional context changes those responses. A particularly promising direction is to examine public exposure, reputational sanctions, and enforcement salience across countries with different tax morale, legal legitimacy, and social norms. Neurophysiological evidence could adjudicate whether deterrence operates through fear, moral conflict, anticipated shame, or more deliberative cost–benefit processing. This is theoretically consequential because it would integrate behavioral public finance, accounting ethics, and neurophysiological evidence into a single framework of compliance under institutional heterogeneity.

4.8 | Risk Perception, Trust, and Market Development

An eighth program should connect neurofinance findings on risk and trust more explicitly to accounting-generated information in different market-development contexts. The reviewed evidence indicates that physiological and neural responses predict aspects of risk tolerance, trading performance, and trust in advisory settings. Yet the open question is whether these responses are stable traits, context-dependent states, or interactions between the two. Cross-country variation in investor protection, market sophistication, disclosure infrastructure, and advisory credibility provides an ideal setting to examine this issue. Neurophysiological methods can distinguish whether reported risk attitudes diverge from physiological responses due to misclassification, institutional framing, or altered perceived uncertainty in disclosure environments. This line of work would materially strengthen the bridge between accounting and finance by showing how accounting information becomes translated into trust, perceived risk, and ultimately market behavior.

4.9 | Implications for Cumulative Research Design

Across all eight programs, one principle is central: future research should be designed not merely to document another physiological correlate, but to adjudicate between competing mechanism-level explanations. This requires stronger use of triangulation, pre-specification, institutional contrasts, and theoretically disciplined operationalization of mechanisms such as attention, effort, arousal, and trust. In practical terms, the most persuasive studies will be those that combine neurophysiological evidence with behavioral outcomes, exploit cross-country or cross-regime variation, and clearly specify what pattern of evidence would support one mechanism rather than another. This is where neurophysiological research can deliver its strongest scholarly value to international financial management and accounting.

4.10 | A More Selective Agenda

This prioritized agenda is intentionally narrower than the current menu-style formulation. That narrowing is a strength, not a limitation. The field no longer needs a long list of conceivable applications; it needs a smaller number of research programs that can produce cumulative evidence, stronger identification, and clearer theoretical payoffs. By positioning international and institutional variation as a source of leverage rather than as a background complication, neurophysiological research can move from novelty-driven application to theory-building contribution.

The value of this agenda lies not in adding more applications of neurophysiological methods, but in designing studies that can adjudicate between competing explanations. In this sense, future research should treat international and institutional variation not as background noise, but as a source of identification that helps clarify when neurophysiological signals reveal stable mechanisms and when they reflect context-specific responses.

5 | Conclusion

This paper positions neurophysiological methods as a central analytical resource for research in accounting and finance rather than as a peripheral or purely methodological innovation. By systematically reviewing 55 high-quality studies and organizing them around mechanisms and decision contexts, we show how neurophysiological evidence can be used not only to observe otherwise latent processes but also to sharpen theory across core domains of international financial management and accounting. Our review yields three overarching insights. More specifically, the review advances research on judgment and decision-making, disclosure design and processing, incentives and control, ethics and compliance, and investor behavior by showing when neurophysiological evidence merely refines measurement and when it changes the underlying theoretical explanation. Practically, the review suggests that disclosure formats, digital interfaces, and incentive systems should be evaluated not only in terms of outcomes, but also in terms of the attention, effort, and emotional responses they induce.

First, existing research relies heavily on psychophysiological methods—particularly eye-tracking—to study attention allocation and information processing, reflecting a pragmatic emphasis on methods that balance validity and feasibility. At the same time, brain imaging techniques such as EEG and fMRI remain comparatively underutilized, despite their demonstrated ability to inform theory by revealing neural processes related to valuation, learning, social influence, and moral reasoning. This imbalance suggests that methodological choices in the literature are driven more by accessibility than by theoretical fit.

Second, the evidence reviewed in this paper shows that accounting and financial decisions are systematically shaped by attention constraints, information processing limits, emotional responses, and ethical tension. Neurophysiological methods make these mechanisms observable and measurable, offering insights that are difficult to obtain through self-reports or outcome-based behavioral measures alone. Importantly, these mechanisms operate across traditional disciplinary boundaries: the same attentional and emotional processes underlie how information is prepared, disclosed, interpreted, and acted upon. This finding reinforces the view that accounting and finance share a common behavioral foundation that can be fruitfully studied using a unified methodological lens.

Third, by organizing prior studies around recurring mechanisms and broader decision contexts, and by articulating a more selective forward-looking agenda, this paper moves beyond synthesis toward theory-guided research design. The proposed agenda identifies where neurophysiological methods can most productively advance theory, how they can be combined with traditional experimental and archival approaches, and why they are especially well suited to addressing unresolved questions in international financial management and accounting, including information overload, disclosure heterogeneity, institutional credibility, incentive design, compliance, and risk perception.

Overall, this article advances research on judgment and decision-making, disclosure design and processing, incentives and control, ethics and compliance, and investor behavior by showing when neurophysiological evidence merely refines measurement and when it changes the underlying theoretical explanation. In this sense, neurophysiological methods function as theory-enabling tools not because they add technical novelty per se, but because they help identify mechanisms that are often only inferred indirectly in conventional accounting and finance research.

Practically, this research suggests that disclosure formats, digital interfaces, assurance designs, and incentive systems should be evaluated not only in terms of outcomes, but also in terms of the attention, effort, and emotional responses they induce. At the same time, the review has limitations: the evidence base is methodologically heterogeneous, the reviewed studies differ widely in tasks and outcomes, and the journal-quality filter improves rigor at the cost of excluding some potentially relevant work.

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Research involving human participants and/or animals: not applicable.

Consent

Informed consent is not applicable.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that have been used are confidential.

Endnotes

[1] To ensure domain relevance, all neuroscience-related keywords were systematically combined with Boolean operators, with accounting-, finance-, and entrepreneurial finance-related terms derived from the official keyword lists and aims and scope of leading journal that matches the accounting and finance fields (i.e., *Journal of International Financial Management & Accounting* and *Journal of Venture Capital*). This approach balances methodological rigor with disciplinary coverage and reduces the risk of omitting pertinent studies. The detailed search strategy is the following: TITLE-ABS-KEY((“Neuro” OR “Psychophysiological” OR “Brain Imaging” OR “eye tracking” OR “eye-tracking” OR “eye movement” OR “eye-movement” OR “pupillometry” OR “SCR” OR “Skin Conductance Response” OR “Facial Expression Analysis” OR “fEMG” OR “Facial Electromyography” OR “EKG” OR “Electrocardiogram” OR “GSR” OR “Galvanic Skin Response” OR “HRV” OR “heart rate variability” OR “fMRI” OR “Functional magnetic resonance imaging” OR “PET” OR “Positron Emission Tomography” OR “EEG” OR “Electroencephalogram” OR “MEG” OR “Magnetoencephalography”) AND (“account*” OR ”audit*” OR “tax*” OR “financ*” OR “bank*” OR “derivative*” OR “risk*” OR “profitability” OR “forecast*” OR “venture capital*” OR “private equity” OR “crowdfund*” OR “fundrais*” OR “investment*” OR “investor*”)).

[2] The excluded studies primarily addressed psychology (1798 articles), microeconomics (284), information systems (135), marketing and communication (110), medicine and well-being (59), education (20), tourism (14), supply chain and transport (19), entrepreneurship (11), and human relations (8). An additional 36 studies employed neurophysiological methods but focused on domains unrelated to accounting or finance. We also exclude studies that used acronyms for non-neuroscientific concepts (194) and research focused on specific terms, such as neuroticism (75), neural networks (53), and neurodiversity (10), that do not employ neurophysiological methods.

[3] For the sake of clarity in classification, each study has been assigned to a single primary method. However, some studies employ multiple neurophysiological techniques. In particular, Bossaerts et al. (2024) is classified under EKG, although it also includes an analysis based on SCR, and Brink et al. (2020) is categorized as an eye-tracking study, while it additionally incorporates facial expression analysis.

References

Aslebagh, P., A. B. Naeini, and M. Moeeni. 2024. “Investigating the Effect of Three Different Factors Including Experience, Personality and Color on the Decision-Making Process in Stock Markets Using EEG.” *Journal of Behavioral and Experimental Economics* 109: 102163.

Badger, A., S. Li, and S. W. Shi. 2026. “In the Eyes of Investors: The Role of Attention in Nonprofessional Investors' Reaction to Earnings Announcements.” *Accounting Forum* 50: 298–330. https://doi.org/10.1080/01559982.2025.2488905.

Barton, J., G. S. Berns, and A. M. Brooks. 2014. “The Neuroscience Behind the Stock Market's Reaction to Corporate Earnings News.” *Accounting Review* 89, no. 6: 1945–1977.

Birnberg, J. G., and A. R. Ganguly. 2012. “Is Neuroaccounting Waiting in the Wings? An Essay.” *Accounting, Organizations and Society* 37: 1–13.

Black, P. W., C. B. Kirwan, T. O. Meservy, W. B. Tayler, and J. Williams. 2024. “An fMRI Investigation of the Neurocognitive Processing of Measures and Strategic Objectives.” *Management Science* 70: 6740–6760.

Boot, W. R., C. L. Dunn, B. P. Fulmer, G. J. Gerard, and S. V. Grabski. 2022. “An Eye Tracking Experiment Investigating Synonymy in Conceptual Model Validation.” *International Journal of Accounting Information Systems* 47: 100578.

Borozan, M., C. Loreta, and P. Riccardo. 2022. “Eye-Tracking for the Study of Financial Decision-Making: A Systematic Review of the Literature.” *Journal of Behavioral and Experimental Finance* 35: 100702.

Bossaerts, P. 2009. “What Decision Neuroscience Teaches Us About Financial Decision Making.” *Annual Review of Financial Economics* 1: 383–404.

Bossaerts, P., F. Fattinger, K. Rotaru, and K. Xu. 2024. “Emotional Engagement and Trading Performance.” *Management Science* 70, no. 6: 3381–3397.

Boucsein, W., D. C. Fowles, S. Grimnes, et al. 2012. “Publication Recommendations for Electrodermal Measurements.” *Psychophysiology* 49: 1017–1034.

Brink, A. G., A. Gouldman, J. M. Rose, and K. Rotaru. 2020. “Effects of Superiors' Compensation Structures on Psychophysiological Responses and Real Earnings Management Decisions of Subordinate Managers.” *Management Accounting Research* 8: 100691.

Butticè, V., V. Collewaert, S. Stroe, T. Vanacker, S. Vismara, and X. Walthoff-Borm. 2022. “Equity Crowdfunders' Human Capital and Signal Set Formation: Evidence From Eye Tracking.” *Entrepreneurship Theory and Practice* 46, no. 5: 1317–1343.

Button, K. S., J. P. A. Ioannidis, C. Mokrysz, et al. 2013. “Power Failure: Why Small Sample Size Undermines the Reliability of Neuroscience.” *Nature Reviews Neuroscience* 14: 365–376.

Camerer, C., G. Loewenstein, and D. Prelec. 2005. “Neuroeconomics: How Neuroscience Can Inform Economics.” *Journal of Economic Literature* 43, no. 1: 9–64.

Cappa, F., C. Acciarini, R. Oriani, and P. Boccardelli. 2026. “Big Data and Innovation: The State of the Art and Future Research Directions.” *R&D Management* 56: 3–36.

Cappa, F., F. Rosso, L. Giustiniano, and M. Porfiri. 2020. “Nudging and Citizen Science: The Effectiveness of Feedback in Energy-Demand Management.” *Journal of Environmental Management* 269: 110759.

Ceravolo, M. G., V. Farina, L. Fattobene, L. Leonelli, and G. Raggetti. 2021. “Gender-Related Variability in Information Processing of Disclosure Documents.” *Journal of Consumer Policy* 44, no. 2: 217–233.

Chen, Y., J. Jermias, and T. Panggabean. 2016. “The Role of Visual Attention in the Managerial Judgment of Balanced-Scorecard Performance Evaluation: Insights From Using an Eye-Tracking Device.” *Journal of Accounting Research* 54, no. 1: 113–146.

Chen, Y., and N. D. Yang. 2026. “Investor's Explicit and Implicit Attributions for CSR Motives: Neuroscientific Insights.” *Journal of Business Ethics* 205: 109–137. https://doi.org/10.1007/s10551-025-06101-x.

Coricelli, G., M. Joffily, C. Montmarquette, and M. C. Villeval. 2010. “Cheating, Emotions, and Rationality: An Experiment on Tax Evasion.” *Experimental Economics* 13, no. 2: 226–247.

Cornand, C., M. A. Erazo Diaz, and A. Zylbersztejn. 2023. “Trading and Cognition in Asset Markets: An Eye-Tracking Experiment.” *Journal of Economic Behavior & Organization* 216: 711–732.

Dalla Via, N., P. Perego, and M. van Rinsum. 2019. “How Accountability Type Influences Information Search Processes and Decision Quality.” *Accounting, Organizations and Society* 75: 79–91.

Davis, B. C., B. J. Warnick, A. H. Anglin, and T. H. Allison. 2021. "Gender and Counterstereotypical Facial Expressions of Emotion in Crowdfunded Microlending." *Entrepreneurship Theory and Practice* 45, no. 6: 1339–1365.

Denyer, D., and D. Tranfield. 2009. "Producing a Systematic Review." In *The Sage Handbook of Organizational Research Methods*, edited by D. Buchanan and A. Bryman, 671–689. Sage.

Dimoka, A., R. D. Banker, I. Benbasat, et al. 2012. "On the Use of Neurophysiological Tools in IS Research: Developing a Research Agenda for NeuroIS." *MIS Quarterly* 36, no. 3: 679–702.

Dinçer, H., S. Yüksel, A. Mikhaylov, and V. Ivanyuk. 2025. "An Integrated Analysis for Digital Financial Assets and Artificial Intelligence-Based Financial Management Using AI-Based Neuro Quantum Picture Fuzzy Rough Sets and Econometric Modeling." *Financial Innovation* 11: 122. https://doi.org/10.1186/s40854-025-00793-w.

Duclos, R. 2015. "The Psychology of Investment Behavior: (De)biasing Financial Decision-Making One Graph at a Time." *Journal of Consumer Psychology* 25: 317–325.

Eklund, A., T. E. Nichols, and H. Knutsson. 2016. "Cluster Failure: Why fMRI Inferences for Spatial Extent Have Inflated False-Positive Rates." *Proceedings of the National Academy of Sciences* 113: 7900–7905.

Ekman, P., and W. Friesen. 1978. *Facial Action Coding System: A Technique for the Measurement of Facial Movement*. Consulting Psychologists.

Eskenazi, P. I., F. G. H. Hartmann, and W. J. R. Rietdijk. 2016. "Why Controllers Compromise on Their Fiduciary Duties: EEG Evidence on the Role of the Human Mirror Neuron System." *Accounting, Organizations and Society* 50: 41–50.

Farrell, A. M., J. O. Goh, and B. J. White. 2014. "The Effect of Performance-Based Incentive Contracts on System 1 and System 2 Processing in Affective Decision Contexts: fMRI and Behavioral Evidence." *Accounting Review* 89: 1979–2010.

Fehrenbacher, D. D., A. K.-D. Schulz, and K. Rotaru. 2018. "The Moderating Role of Decision Mode in Subjective Performance Evaluation." *Management Accounting Research* 41: 1–10.

Fehrenbacher, D. D., and N. S. Soderstrom. 2025. "Does ESG Information Draw More Visual Attention Than Financial Information?." *Australian Journal of Management* 51: 416–437.

Frydman, C., N. Barberis, C. Camerer, P. Bossaerts, and A. Rangel. 2014. "Using Neural Data to Test a Theory of Investor Behavior: An Application to Realization Utility." *Journal of Finance* 69, no. 2: 907–946.

Fulmer, B. P., and G. J. Gerard. 2025. "The Influence of Misdirecting Visual Cues and Alternative Terminology on Digital Financial Statement Search Efficiency: Evidence From an Eye Tracking Experiment." *International Journal of Accounting Information Systems* 56: 100753.

Gajewski, J.-F., M. Heimann, P.-M. Léger, and P. Teye. 2025. "Enhancing Auditors' Professional Skepticism Through Nudges: An Eye-Tracking Experiment." *Accounting and Business Research* 55, no. 4: 426–444.

Gao, M., X. Fang, X. Yang, L. F. Ackert, and L. Qi. 2026. "Visual Attention, Incentives, and Herding: Insights From a Laboratory Asset Trading Game." *Journal of Behavioral Finance*. https://doi.org/10.1080/15427560.2025.2609639.

Gao, J., F. G. H. Hartmann, M. Zhang, and Y. Chen. 2023. "The Impact of CSR Performance and CSR Disclosure Readability on Investors' Earnings Estimates." *Accounting & Finance* 63: 1157–1186.

Gibson, S., M. J. Seiler, and E. Walden. 2019. "Using Experimental and Neurological Data to Gain a Deeper Understanding of Realization Utility Theory." *Real Estate Economics* 47, no. 4: 1119–1162.

Hecht, G., K. Rotaru, A. K.-D. Schulz, K. L. Towry, and A. Webb. 2025. "Decoding Effort: Toward a Measure – and a Better Understanding – of Effort Intensity in Accounting Research." *Management Accounting Research* 66: 100926.

Hellmann, A., C. Yeow, and L. De Mello. 2017. "The Influence of Textual Presentation Order and Graphical Presentation on the Judgements of Non-Professional Investors." *Accounting and Business Research* 47, no. 4: 455–470.

Holmqvist, K., M. Nyström, R. Andersson, R. Dewhurst, H. Jarodzka, and J. van de Weijer. 2011. *Eye Tracking: A Comprehensive Guide to Methods and Measures*. Oxford University Press.

Jiang, L., D. Yin, and D. Liu. 2019. "Can Joy Buy You Money? The Impact of the Strength, Duration, and Phases of an Entrepreneur's Peak Displayed Joy on Funding Performance." *Academy of Management Journal* 62, no. 6: 1848–1871.

Kahneman, D., and J. Beatty. 1966. "Pupil Diameter and Load on Memory." *Science* 154: 1583–1585.

Ko, J. C. W., M. M. Cheng, and W. J. Green. 2024. "Stakeholder Focus or Strategy Focus? An Eye-Tracker Study on the Effect of Presentation Format on Nonprofessional Investors' Information Processing Patterns." *European Accounting Review* 33, no. 4: 1521–1548.

Kramer, S., and V. S. Maas. 2020. "Selective Attention as a Determinant of Escalation Bias in Subjective Performance Evaluation Judgments." *Behavioral Research in Accounting* 32: 87–100.

Król, M., and M. Król. 2019a. "A Valence Asymmetry in Pre-Decisional Distortion of Information: Evidence From an Eye Tracking Study With Incentivized Choices." *Journal of Experimental Psychology: Learning, Memory, and Cognition* 45: 2209–2223.

Król, M., and M. Król. 2019b. "Learning From Peers' Eye Movements in the Absence of Expert Guidance: A Proof of Concept Using Laboratory Stock Trading, Eye Tracking, and Machine Learning." *Cognitive Science* 42, no. 2: e12716. https://doi.org/10.1111/cogs.12716.

Król, M., and M. Król. 2019c. "Simple Eye Movement Metrics Can Predict Future Decision Making Performance: The Case of Financial Choices." *Judgment and Decision Making* 1: 223–233.

Loijens, L., and O. Krips. 2018. *Face Reader Methodology Note. A White Paper by Noldus Information Technology*. Noldus.

Lucarelli, C., P. Uberti, and G. Brighetti. 2015. "Misclassifications in Financial Risk Tolerance." *Journal of Risk Research* 18, no. 4: 467–482.

Lynch, E. J., and L. M. Andiola. 2019. "If Eyes Are the Window to Our Soul, What Role Does Eye-Tracking Play in Accounting Research?." *Behavioral Research in Accounting* 31, no. 2: 107–133.

Mathôt, S. 2018. "Pupillometry: Psychology, Physiology, and Function." *Journal of Cognition* 1: 1–23.

Mathôt, S., J. Fabius, E. Van Heusden, and S. Van der Stigchel. 2018. "Safe and Sensible Preprocessing and Baseline Correction of Pupil-Size Data." *Behavior Research Methods* 50: 94–106.

Meißner, M., and J. Oll. 2019. "The Promise of Eye-Tracking Methodology in Organizational Research: A Taxonomy, Review, and Future Avenues." *Organizational Research Methods* 22, no. 2: 590–617.

Mesly, O. 2015. "Wealth Maximization in the Context of Blind Trust – A Neurobiological Research." *Journal of Behavioral Finance* 16, no. 3: 250–266.

Mesly, O., and S. Bouchard. 2016. "Predatory-Prey Decision Making During Market Bubbles: Preliminary Evidence From a Neurobiological Study." *Journal of Behavioral Finance* 17: 293–308.

Miendlarzewska, E. A., M. Kometer, and K. Preuschoff. 2019. "Neurofinance." *Organizational Research Methods* 22, no. 1: 196–222.

Münchhalfen, P., and R. Gaschler. 2021. “Attention Distribution of Current Key Investor Documents: Standardization as a Long-Term Goal of the PRIIP Regulation.” *Journal of Consumer Policy* 44, no. 1: 73–94.

Ognjanovic, S., M. Thüring, R. O. Murphy, and C. Hölscher. 2019. “Display Clutter and Its Effects on Visual Attention Distribution and Financial Risk Judgment.” *Applied Ergonomics* 80: 168–174.

Okumus, O., S. Stroe, and C. Sirén. Forthcoming. “Neurophysiological Methods in Entrepreneurial Finance: A Deep Dive Into EEG and Eye-Tracking.” In *Field Guide to Entrepreneurial Finance*, edited by S. Dutta, I. Paeleman, T. Vanacker, and S. Vismara. Edward Elgar.

Picton, T. W., S. Bentin, P. Berg, et al. 2000. “Guidelines for Using Human Event-Related Potentials to Study Cognition: Recording Standards and Publication Criteria.” *Psychophysiology* 37: 127–152.

Poldrack, R. A. 2006. “Can Cognitive Processes Be Inferred From Neuroimaging Data?.” *Trends in Cognitive Sciences* 10: 59–63.

Poldrack, R. A., P. C. Fletcher, R. N. Henson, K. J. Worsley, M. Brett, and T. E. Nichols. 2008. “Guidelines for Reporting an fMRI Study.” *NeuroImage* 40: 409–414.

Rahadian, D., A. Firli, H. Dinçer, S. Yüksel, A. Mikhaylov, and F. Ecer. 2024. “A Hybrid Neuro Fuzzy Decision-Making Approach to the Participants of Derivatives Market for Fintech Investors in Emerging Economies.” *Financial Innovation* 10: 37. https://doi.org/10.1186/s40854-023-00563-6.

Riedl, R., and P.-M. Léger. 2016. *Fundamentals of NeuroIS: Information Systems and the Brain*. Springer.

Rose, A. M., J. M. Rose, K. Rotaru, K.-A. Sanderson, and J. C. Thibodeau. 2022a. “Effects of Data Visualization Choices on Psychophysiological Responses, Judgment, and Audit Quality.” *Journal of Information Systems* 36: 53–79.

Rose, A. M., J. M. Rose, K. Rotaru, K.-A. Sanderson, and J. C. Thibodeau. 2022b. “Effects of Uncertainty Visualization on Attention, Arousal, and Judgment.” *Behavioral Research in Accounting* 34, no. 1: 113–139.

Rotaru, K., J. M. Rose, O. Ganbold, A. M. Rose, J. Loveridge, and A. Stamatelatos. 2025. “Neuroaccounting: Integrating Neurophysiological Techniques Into Accounting and Accounting Information Systems Research.” *Journal of Information Systems* 39, no. 3: 85–130.

Rubaltelli, E., S. Agnoli, and L. Franchin. 2016. “Sensitivity to Affective Information and Investors' Evaluation of Past Performance: An Eye-Tracking Study.” *Journal of Behavioral Decision Making* 29: 295–306.

Seiler, M. J., and E. Walden. 2015. “A Neurological Explanation of Strategic Mortgage Default.” *Journal of Real Estate Finance and Economics* 51, no. 2: 215–230.

Shane, S., W. Drover, D. Clingingsmith, and M. Cerf. 2020. “Founder Passion, Neural Engagement and Informal Investor Interest in Startup Pitches: An fMRI Study.” *Journal of Business Venturing* 35, no. 4: 105949.

Shavit, T., C. Giorgetta, Y. Shani, and F. Ferlazzo. 2010. “Using an Eye Tracker to Examine Behavioral Biases in Investment Tasks: An Experimental Study.” *Journal of Behavioral Finance* 11: 185–194.

Sirois, L.-P., J. Bédard, and P. Bera. 2018. “The Informational Value of Key Audit Matters in the Auditor's Report: Evidence From an Eye-Tracking Study.” *Accounting Horizons* 32, no. 2: 141–162.

Slapničar, S., M. Ličen, F. G. H. Hartmann, A. S. Ozimič, and G. Repovš. 2021. “Management Accountants' Empathy and Their Violation of Fiduciary Duties: A Replication and Extension Study Using fMRI.” *Behavioral Research in Accounting* 33, no. 1: 21–42.

Smith, V. L., G. L. Suchanek, and A. W. Williams. 1988. “Bubbles, Crashes, and Endogenous Expectations in Experimental Spot Asset Markets.” *Econometrica* 56, no. 5: 1119–1151.

Tank, A. K., and A. M. Farrell. 2022. “Is Neuroaccounting Taking a Place on the Stage? A Review of the Influence of Neuroscience on Accounting Research.” *European Accounting Review* 31, no. 1: 173–207.

Task Force of the European Society of Cardiology and the North American Society of Pacing Electrophysiology. 1996. “Heart Rate Variability: Standards of Measurement, Physiological Interpretation, and Clinical Use.” *Circulation* 93: 1043–1065.

Toma, F.-M., C.-O. Cepoi, M. N. Kubinschi, and M. Miyakoshi. 2023. “Gazing Through the Bubble: An Experimental Investigation Into Financial Risk-Taking Using Eye-Tracking.” *Financial Innovation* 9, no. 1: 28.

Tranfield, D., D. Denyer, and P. Smart. 2003. “Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review.” *British Journal of Management* 14, no. 3: 207–222.

Vieito, J. P., A. F. da Rocha, and F. T. Rocha. 2015. “Brain Activity of the Investor's Stock Market Financial Decision.” *Journal of Behavioral Finance* 16, no. 3: 220–230.

Warnick, B. J., B. C. Davis, T. H. Allison, and A. H. Anglin. 2021. “Express Yourself: Facial Expression of Happiness, Anger, Fear, and Sadness in Funding Pitches.” *Journal of Business Venturing* 36, no. 4: 106109.

Yang, H., and H. Li. 2017. “Trust Cognition of Entrepreneurs' Behavioral Consistency Modulates Investment Decisions of Venture Capitalists in Cooperation.” *Entrepreneurship Research Journal* 8, no. 3: 20170084.

Yang, X., X. Fang, M. Gao, L. F. Ackert, and L. Qi. 2024. “Follow the Gaze: How Social Attention Shapes Gendered Trading Choices.” *China Economic Review* 88: 102301.

Zhang, Z., M. Gong, S. Zhang, and M. Jia. 2023. “Buffering or Aggravating Effect? Examining the Effects of Prior Corporate Social Responsibility on Corporate Social Irresponsibility.” *Journal of Business Ethics* 183, no. 1: 147–163.

Appendix 1

Methodological Details of Reviewed Studies

Publication brief reference	Neuro-physiological methods	Metrics	Sample (no. and type)	Key controls	Accounting/ finance
Aslebagh et al. (2024)	EEG	Frequency band, power	No sample size. Sample includes two groups: experienced investors (≥ 1 year, active in the Iranian stock market) and inexperienced investors (< 1 year, part-time).	– Triangulation using other measures alongside those listed in the third column: behavioral decisions, and personality questionnaire (introversion/ extroversion)	Finance
Badger et al. (2026)	Eye-tracking	Number of fixations, total dwell time	169 graduate students participated.	– Triangulation using other measures alongside those listed in the third column: behavioral (valuation judgments). – Behavioral correlates: pre/post valuation judgments, mediation analysis linking attention (valuation change).	Finance
Barton et al. (2014)	fMRI	BOLD	35 MBA students with relevant accounting and investing experience.	– Multiple comparison correction is implied. Standard fMRI cluster-level or voxel-wise correction is implied but not explicitly named. – No formal power analysis (sample justification): sample size justified by typical fMRI standards: 35 participants. – Motion correction/exclusion: standard fMRI motion correction applied, preprocessing implied. – Triangulation using other measures alongside those listed in the third column: behavioral measures (EPS forecasts, investment positions, personality traits). – Behavioral correlates: forecast errors, long/short positions, personality traits (sensitivity to reward/aversion). – Incentives: real monetary incentives tied to investment outcomes.	Finance
Black et al. (2024)	fMRI	BOLD	38 participants (28 men and 10 women), average age 23.2 years, average of 2.9 courses in accounting/ strategy.	– Triangulation with other measures alongside those listed in the third column: Behavioral measures (response times, surrogation decisions). – Behavioral correlates: response time, surrogation vs. nonsurrogation decisions.	Accounting
Boot et al. (2022)	Eye-tracking	Number of fixations	34 upper-division undergraduate accounting students enrolled in an accounting information systems course at a large public university.	– Blink/missing data handling: exclusion of trials with missing or invalid gaze patterns. – Triangulation with other measures alongside those listed	Accounting

(Continues)

Publication brief reference	Neuro-physiological methods	Metrics	Sample (no. and type)	Key controls	Accounting/ finance
				in the third column: behavioral accuracy, cognitive ability (Raven's Progressive Matrices). – Incentives: course credit.	
Bossaerts (2009)	fMRI	BOLD	No sample size. The study references macaque monkeys and human subjects in different experiments.	– Triangulation using other measures alongside those listed in the third column: conceptual triangulation across fMRI, electrophysiology, lesion studies, and behavioral experiments. – Behavioral correlates: Discusses behavioral correlates from prior literature (risk perception, reward prediction error, choice under uncertainty).	Finance
Bossaerts et al. (2024)	SCR, EKG	SCR onset, heart rate variability	128 participants (8 per session × 16 sessions) were recruited from Monash Business School, Monash University, through on-site advertisements. They were recruited for a continuous double auction trading experiment. No repeated participation.	– Multiple comparison correction: extremely conservative family-wise error rate (FWE) corrections applied. Effective p level ≈ 0.0001 after correction. Necessary due to multiple lag structures × multiple market variables × multiple participants. – Power analysis/sample justification: no formal power analysis. Sample size justified by reference to the canonical Smith et al. (1988) design (8 traders per session). 16 sessions total (10 with ECP, 6 without). – Triangulation using other measures alongside those listed in the third column: behavioral trading performance (earnings), market-based variables (mispricing, order timing). – Behavioral correlates: trading performance (final earnings), order submission timing, price deviations from fundamental value, portfolio value dynamics: – Incentives: earnings converted to AUD at 1:10 rate. Expected earnings ≈ 45 AUD; capped at 55 AUD, floor at 25 AUD. 10 AUD show-up fee.	Finance
Brink et al. (2020)	Eye-tracking, facial expression analysis	Fixation duration, number of fixations, pupil diameter, emotional valence	93 graduate accounting students (Experiment 2) from a large public university. Average age 24 years (SD = 1.91). On average, the participants had 1 year (SD = 2.0) of professional business experience. All participants had normal or corrected-to-normal vision.	– Luminance/contrast control (implicit via design): pupillometry uses baseline correction to control for light reflex. – Blink/missing data handling (partial): participants with unusable facial data excluded. – Triangulation is very strong among the different measures	Accounting

(Continues)

Publication brief reference	Neuro-physiological methods	Metrics	Sample (no. and type)	Key controls	Accounting/ finance
				listed in the third column, plus behavioral judgments. – Behavioral correlates: decision outcomes (earning management), likelihood judgments. – Incentives: hypothetical incentives (explicitly stated), grade bonus (~2%) in Experiment 2.	
Butticè et al. (2022)	Eye-tracking	Fixation duration, total dwell time	515 equity crowdfunders, the majority of whom evaluated 2 campaigns, resulting in 915 usable data points. Of these respondents, 69% were male, and they were on average 34 years old (SD = 12).	– Triangulation using other measures alongside those listed in the third column: survey measures of human capital (education, experience). – Behavioral correlates: time to form signal set; number of signals attended; composition.	Finance
Ceravolo et al. (2021)	Eye-tracking	Fixation duration, number of fixations, time-to-first fixation, total dwell time	36 university students (18 men and 18 women), from Medicine and Economics faculties of a major university. All were noninvestors, screened for financial inexperience and gaming habits.	– Multiple comparison correction by ANOVA with a significant threshold adjusted to $p < 0.01$ "to account for multiple comparisons." And dwell time normalized by AOI size. – Luminance/contrast control: white background, black text, gray graphics; constant font size; controlled to avoid color effects. – Triangulation using other measures alongside those listed in the third column: behavioral ratings of attractiveness used alongside eye-tracking. – Behavioral correlates: product attractiveness ratings ("Low/ Medium/High").	Finance
Chen et al. (2016)	Eye-tracking	Fixation duration, number of fixations	No sample size and type.	– Triangulation using other measures alongside those listed in the third column: behavioral (promotion decision). – Behavioral correlates: decision to promote one of the two managers; consistency of evaluation with strategic objectives.	Accounting
Chen and Yang (2026)	EEG	BOLD	25 MBA students (13 men and 12 women) from a Chinese university serve as appropriate proxies for nonprofessional investors in tasks requiring basic accounting and investment knowledge. Age range 26–35 ($M = 29.56$, SD = 2.72).	– Triangulation using other measures alongside those listed in the third column: explicit and implicit attributions. Emotional responses inferred from N400-like amplitude. – Behavioral correlates: explicit motive ratings (altruistic vs. egoistic).	Finance
Coricelli et al. (2010)	SCR	SCR onset, SCR peak,	48 (30 men and 18 women) undergraduate participants	– Incentives: monetary earnings based on two randomly selected	Accounting

(Continues)

Publication brief reference	Neuro-physiological methods	Metrics	Sample (no. and type)	Key controls	Accounting/ finance
		SCR amplitude	(8 per session), recruited from undergraduate courses in the local business and engineering schools via ORSEE.	periods, show-up fee = 3€, average earnings ≈ 19.33€, no redistribution of tax revenue (goes to research funds), public exposure (picture) acts as a nonmonetary sanction. – Triangulation using other measures alongside those listed in the third column: self-reported arousal and valence, behavioral measures (evasion amount, audit outcomes). – Behavioral correlates: decision to cheat, proportion of income evaded, reaction to audit, effect of sanctions, and public exposure.	
Cornand et al. (2023)	Eye-tracking	Total dwell time	182 students (123 men and 59 women), the average age is 21 years.	– Preregistration: The design and behavioral conjectures have been preregistered at AsPredicted (#106714). – Triangulation using other measures alongside those listed in the third column: behavioral data (trading orders, predictions), Cognitive Reflection Test, and social-demographic questionnaire. – Behavioral correlates: classification of traders through behavioral regressions, analysis of trading strategies, and forecasting. – Incentives: payment is randomly based on one of the two tasks (forecasting or trading) and on one of the two markets. Forecast: 250 ECU per forecast within ±25 of the realized price. Trading: profits from transactions and dividends.	Finance
Dalla Via et al. (2019)	Eye-tracking	Number of fixations, number of saccades	71 undergraduate students (26 men and 45 women) from a Western European business school. On average, our subjects are 23.2 years old and have 1.4 years of work experience.	– Triangulation using other measures alongside those listed in the third column: behavioral measures (decision quality, written justifications, process condition). – Behavioral correlates: decision quality, search effort (fixations), attention to relevant cues. – Incentives: Evaluation-based incentives (process justification vs. outcome optimality).	Accounting
Davis et al. (2021)	Facial expression analysis	Number of facial action units	43,210 photographs of entrepreneurs from Kiva microloan appeals.	– Blink/missing data handling (implicit): images without identifiable faces were excluded. – Triangulation using other measures alongside those listed	Finance

(Continues)

Publication brief reference	Neuro-physiological methods	Metrics	Sample (no. and type)	Key controls	Accounting/finance
				in the third column: behavioral outcome (whether the loan was funded "funded = 1"). Controls (gender, loan size, sector, country, etc.). – Behavioral correlates: loan funded or not (binary), probability of meeting funding goal, gender-specific effects of emotional expressions. – Incentives: microlenders receive no financial return; loans are repaid without interest. Entrepreneurs receive microloans if campaigns reach funding goals.	
Dinçer et al. (2025)	Facial expression analysis	Number of facial action units	Three decision makers, who are experts in international financial markets and digital finance.	– Triangulation using other measures alongside those listed in the third column: triangulation between econometric modeling and multicriteria decision-making fuzzy-quantum analysis.	Finance
Duclos (2015)	Eye-tracking	Total dwell time	50 undergraduate students.	– Triangulation using other measures alongside those listed in the third column: behavioral measures. – Behavioral correlates: predicted price, investment amount, mediation analyses linking predictions --> investment. – Incentives: 1.000 USD endowment, 100 USD prize for best performance.	Finance
Eskenazi et al. (2016)	EEG	Mu suppression	29 professional controllers (24 men and 5 women, mean age 34.7 years; SD age 7.8 years) from executive master's programs. Experienced in a controller role, ranging from 2 to 25 years, with an average of 8.9 years.	– Triangulation using other measures alongside those listed in the third column: behavioral scenario responses. – Behavioral correlates: likelihood of misreporting (1–7 scale), separate analysis for self-interest vs. organizational-interest scenarios. – Incentives: participation compensated with 50 EUR.	Accounting
Farrell et al. (2014)	fMRI	BOLD	Experiment 1: 27 healthy full-time graduate business students (18 master's of accountancy students, 9 MBA students) as a proxy for practicing managers. Right-handed, male, native English-speaking. Experiment 2: 96 graduate business students from 4 master's programs who did not participate in Experiment 1, of whom 28 had full-time work	– Multiple comparisons correction (partial/unclear): fMRI threshold ($p < 0.001$ uncorrected, cluster threshold). – Blink/missing data handling (implicit): participants excluded for excessive movement or unusable scans. – Motion correction/exclusion: participants excluded for excessive movement, standard fMRI preprocessing implied.	Accounting

(Continues)

Publication brief reference	Neuro-physiological methods	Metrics	Sample (no. and type)	Key controls	Accounting/ finance
			experience averaging 25 months.	– Triangulation with other measures alongside those listed in the third column: behavioral experiment, and within-subject and between-subject validation. – Behavioral correlates: investment choices, proportion of economically optimal decisions. – Incentives: fixed wage and performance-based bonus.	
Fehrenbacher et al. (2018)	Eye-tracking	Fixation duration, number of fixations	123 second-year undergraduate students with accounting majors took part in the study.	– Triangulation using other measures alongside those listed in the third column: behavioral measures (subjective performance rating), time-based measures (time on screen). – Behavioral correlates: subjective performance evaluation score (0–10). – Incentives: Participants received course credit (two credit points).	Accounting
Fehrenbacher and Soderstrom (2025)	Eye-tracking	Fixation duration	100 graduate business students, evenly split across roles (Investor vs. Environmental Regulator) and order conditions (ESG first vs. Financial first).	– Blink/missing data handling is implicitly present. Six participants were excluded due to calibration or head-movement issues. – Triangulation using other measures alongside those listed in the third column: self-reported ESG familiarity, self-reported difficulty ratings for financial and ESG evaluation, and behavioral performance evaluation scores. – Behavioral correlates: performance evaluation of the company, self-reported difficulty, and ESG familiarity.	Accounting
Frydman et al. (2014)	fMRI	BOLD	28 Caltech subjects (22 men, 6 women, age range 18–60, mean age 25.6, std. of age 7.6). All subjects were right-handed and had no history of psychiatric illness, and none were taking medications that interfere with fMRI.	– Multiple comparisons correction: cluster-level or voxel-level corrections are typical for fMRI (method not explicitly stated in the excerpt). – Motion correction exclusion: standard SPM motion correction applied. – Triangulation using other measures alongside those listed in the third column: behavioral trading data, neural data (vmPFC vSt), individual-level correlation between neural signals and behavioral disposition effect. – Behavioral correlates: disposition effect (PGR, PLR), trading decisions, capital gains/ losses, reaction to price changes.	Finance

(Continues)

Publication brief reference	Neuro-physiological methods	Metrics	Sample (no. and type)	Key controls	Accounting/ finance
				– Incentives: participants receive monetary compensation based on trading performance. Realized gains/losses directly affect final earnings. The design ensures that rational risk-neutral traders should sell losers more often than winners, creating a strong test of the disposition effect.	
Fulmer and Gerard (2025)	Eye-tracking	Fixation duration, number of fixations	26 participants (13 high-ADK enrolled in a graduate accounting program, 13 low-ADK were psychology undergraduates).	– Luminance/contrast control is partially present. Stimuli presented in a controlled laboratory setting with standardized digital income-statement tables. No explicit luminance calibration reported. – Blink/missing data handling: six participants were excluded due to calibration problems or head movement. – Triangulation using other measures alongside those listed in the third column: behavioral (search time), self-report (perceived difficulty, familiarity with ESG/financial terminology). – Behavioral correlates: search time (ms), fixation count, and learning curves across trials.	Accounting
Gajewski et al. (2025)	Eye-tracking	Number of fixations, time-to-first fixation	Lab experiment (eye-tracking): 20 auditors (6 men and 14 women) working in Canada, aged 21–25, with 3–12 months of experience.	– Triangulation using other measures alongside those listed in the third column: behavioral skepticism. – Behavioral correlates: professional skepticism scores.	Accounting
M. Gao et al. (2026)	Eye-tracking	Total dwell time	62 participants produced a data set of 7823 binary decisions under two conditions: disparate (7017) and congruent information (806).	– Luminance/contrast control: Room with no windows, LED light panel system, even distribution of light. – Triangulation using other measures alongside those listed in the third column: behavioral decisions (buy/sell), self-reported usefulness ratings after each trial, Drift Diffusion Model (DDM) parameters. – Behavioral correlates: buy/sell choice, response times (used in DDM), self-reported usefulness of each information source. – Incentives: within-subject manipulation (72 rounds with linear incentives, 72 with tournament incentives); linear (earn 20% of trading payoff), tournament (earn 35 RMB if payoff > median of market;	Finance

(Continues)

Publication brief reference	Neuro-physiological methods	Metrics	Sample (no. and type)	Key controls	Accounting/ finance
				otherwise 5 RMB), final payment determined by random draw from incentive blocks.	
J. Gao et al. (2023)	Eye-tracking	Fixation duration	88 part-time MBA students. Age range: 25–40 years. Background: average of 2.4 accounting and 2.6 finance courses; 88.6% had prior investment experience.	– Blink/missing data handling is implicitly present. Nine participants excluded for failing manipulation check; no explicit blink-handling description. – Triangulation using other measures alongside those listed in the third column: behavioral earnings estimates, self-reported perceived fluency. – Behavioral correlates: earnings estimate, reading strategies (time allocation, sequence, repeated reading), perceived processing fluency.	Finance
Gibson et al. (2019)	fMRI	BOLD	22 participants (19 men and 3 women), mean age 25.8, 19 right-handed, recruited from a mid-sized city in the Southwest United States.	– Triangulation using other measures alongside those listed in the third column: behavioral trading choices. – Behavioral correlates: self/hold decisions, disposition effect strength. – Incentives: subjects were told compensation depended on performance, but actually, payouts were fixed at 25 USD. This deception was necessary because outcomes were experimentally manipulated.	Finance
Hecht et al. (2025)	Eye-tracking	Saccade amplitude, saccade velocity, pupil diameter	92 participants (43 men and 49 women), aged 21 years, were recruited from the experimental subject pool maintained where one of the study's co-authors is employed.	– Triangulation using other measures alongside those listed in the third column: behavioral performance (correct decodings). – Behavioral correlates: performance = number of correctly decoded letters. – Incentives: piece-rate: payment increases with the number of correct decodings. Flat wage (fixed payment regardless of performance).	Accounting
Hellmann et al. (2017)	Eye-tracking	Fixation duration, number of fixations, total dwell time, number of saccades	66 final-year business and economics students from an Australian university were used as proxies for nonprofessional investors. Grouped into three conditions (approx. 22 per group); 23 participants underwent eye-tracking.	– Triangulation using other measures alongside those listed in the third column: behavioral judgment ratings, self-reported cue importance. – Behavioral correlates: performance rating, cue ranking, qualitative justification statements. – Incentives: participants entered a draw for 3 AUD 50 gift cards.	Finance
Jiang et al. (2019)	Facial expression analysis	Intensity of expressions of	1460 entrepreneurial pitch videos.	– Triangulation using other measures alongside those listed	Finance

(Continues)

Publication brief reference	Neuro-physiological methods	Metrics	Sample (no. and type)	Key controls	Accounting/ finance
		emotions, duration of expressions of emotions		in the third column: Control variables (project characteristics, the entrepreneur, other emotions). Not physiological triangulation. – Behavioral correlates: funding performance. – Incentives reported: present a pitch to secure funding.	
Ko et al. (2024)	Eye-tracking	Fixation duration, number of fixations, total dwell time	104 participants comprise 25 graduate students and 79 undergraduate students; 96 participants were enrolled in a Business degree.	– Blink/missing data handling (implicit): Eye-tracking data processed using standard fixation metrics; the article does not detail blink removal procedures. – Triangulation using other measures alongside those listed in the third column: behavioral judgments (EPS forecasts). – Behavioral correlates: EPS forecasts, attention allocation patterns, bias in forecasts.	Finance
Kramer and Maas (2020)	Eye-tracking	Fixation duration, number of fixations	95 participants (45 men and 50 women), with an average age of 21.79 years and 3.05 years of work experience.	– Blink/missing data handling (partial): participants with failed eye-tracking excluded. – Behavioral correlates: performance ratings. – Incentives: fixed participation fee (5 EUR).	Accounting
Król and Król (2019a)	Eye-tracking	Fixation duration, total dwell time, pupil diameter	Experiment 1: 100 students (42 men and 58 women), mean age 27.9, with normal or corrected-to-normal eyesight, from a large private university. Experiment 2: 103 students (37 men and 66 women), mean age 26.7, with normal or corrected-to-normal eyesight, from a large private university, and did not take part in Experiment 1.	– Preregistration: OSF preregistration link provided https://osf.io/t8mbc/.... – Luminance/contrast control: light intensity equalized using a luxometer. – Blink/missing data handling: trials with no fixations on words removed ($< 5\%$). – Triangulation using other measures alongside those listed in the third column: behavioral decisions, anticipatory gaze. – Behavioral correlates: investment choice, gaze duration, and anticipatory gaze-based belief measure. – Incentives: Participants started with 1000 points. Paid \$3 per 1000 points at the end. Average payoff ≈ \$7. Real monetary incentives tied to investment outcomes.	Finance
Król and Król (2019b)	Eye-tracking	Fixation duration, number of fixations	Experiment 1: 100 students (44 men and 56 women) were recruited at a large private university, excluding	– Power analysis/sample justification (partial): authors noted sample size larger than prior comparable studies.	Finance

(Continues)

Publication brief reference	Neuro-physiological methods	Metrics	Sample (no. and type)	Key controls	Accounting/ finance
			students of economics or finance. Average age was 22.3 (SD = 3.59), and all had normal or corrected-to-normal eyesight. Experiment 2: 100 (41 men and 59 women) subjects from the same student population (mean age 22.8, SD = 3.25), excluding subjects who took part in Experiment 1.	– Blink/missing data handling: trials where participants failed to decide within the time limit were dropped. Fixations outside AOIs removed. No explicit blink-interpolation procedure is described. – Triangulation using other measures alongside those listed in the third column: decision type (good/bad), reaction to feedback, and learning effects across trials. – Incentives: monetary payoff based on portfolio value and an 8 USD show-up fee (participants start with 200 points, portfolio value converted to money).	
Król and Król (2019c)	Eye-tracking	Fixation duration, number of fixations, total dwell time	56 students (29 men and 27 women), with a mean age of 22.14, SD = 2.07, were recruited at the University of Social Sciences and Humanities in Wroclaw, Poland.	– Blink/missing data handling: trials with no fixations (< 1%) were removed. – Triangulation using other measures alongside those listed in the third column: behavioral performance, eye-metrics linked to ex-ante correctness, ex-post correctness, disposition effect (PGR, PLR). – Behavioral correlates: ex-ante correctness, ex-post correctness, disposition effect (PGR, PLR), choice (sell/hold). – Incentives: monetary payoff based on portfolio value and an 8 USD show-up fee (participants start with 200 points, portfolio value converted to money).	Finance
Lucarelli et al. (2015)	SCR	SCR onset	445 participants (bank customers, traders, advisors, asset managers), voluntarily recruited. Large sample size for SCR-based financial decision analysis.	– Justification for not conducting a formal power analysis: unusually large sample for psychophysiological research ($n = 445$), compared to prior studies with $n = 10–33$. – Triangulation using other measures alongside those listed in the third column: behavioral, IGT choices (risk-averse vs risk-seeking); psychometric (Financial Risk Tolerance Questionnaire – PDFRT). – Behavioral correlates: frequency of choices from advantageous vs. disadvantageous decks; classification of risk-averse vs. risk-seeking behavior.	Finance
Mesly (2015)	fMRI	BOLD, levels of salivary cortisol (indirect)	20 participants (10 men and 10 women), selected based on moderate fear of snakes (SNAQ), excluding those	– Snake images from IAPS were used, but no luminance control was reported.	Finance

(Continues)

Publication brief reference	Neuro-physiological methods	Metrics	Sample (no. and type)	Key controls	Accounting/ finance
			with extreme phobia or claustrophobia, all aged between 18 and 25 years.	– Standard fMRI motion correction is implied but not described. – Triangulation using other measures alongside those listed in the third column: self-reported questionnaires (fear of snakes SNAQ), behavioral measures (reaction time, path choices). – Behavioral correlates: path choices in maze, reaction times, avoidance vs. pursuit behavior. – Incentives: fixed 50 CAD payment.	
Mesly and Bouchard (2016)	fMRI	BOLD, levels of salivary cortisol (indirect)	20 participants (10 men and 10 women) were chosen out of the 47 who initially signed in. We selected those who displayed moderate fear of snakes on the SNAK questionnaire to avoid having participants with too low fears or unmanageable phobias. Participants ranged from 18 to 25 years of age, which is a range of age where sensitivity or phobias of animals have been noted.	– Triangulation using other measures alongside those listed in the third column: State-Trait Anxiety Inventory (STAI Y1/ Y2), Snake Anxiety (SNAQ), behavioral performance (money earned/lost, wall hits). – Behavioral correlates: errors (wall hits), time spent in each scenario, money earned/lost. – Incentives: participants earned/ lost money depending on performance. They received 50 USD compensation plus gains/ losses from a randomly selected trial.	Finance
Münchhalfen and Gaschler (2021)	Eye-tracking	Fixation duration, number of fixations	20 banking and finance students of the University of Hagen (Germany), mostly working professionals. Mean age = 31.75 years (SD = 8.03). High heterogeneity in age and investment experience. The majority had prior experience with funds, ETFs, and shares.	– Blink/missing data handling: not reported. Standard SMI fixation detection was used; no mention of blink removal. – Triangulation using other measures alongside those listed in the third column: post-task questionnaire (on: prior investment experience, perceived comprehensibility, perceived importance of product attributes). – Behavioral correlates: self-reported: important ratings (max yield, risk/return, costs, issuer, discount), comprehensibility ratings (risk/ return scenarios, costs, product description).	Finance
Ognjanovic et al. (2019)	Eye-tracking	Fixation duration, number of fixations	98 students, of whom 50 belonged to the expert group (37 men and 13 women), with an average age of 25 years old (SD = 2.3); 48 belonged to the novice group (27 men and 21 women), and were	– Luminance/contrast control (visual stimuli): luminance controlled with a lux meter to standardize display brightness. – Triangulation using other measures alongside those listed in the third column: behavioral (risk judgment consistency –	Finance

(Continues)

Publication brief reference	Neuro-physiological methods	Metrics	Sample (no. and type)	Key controls	Accounting/finance
			on average 24.2 years old (SD = 2.9).	transitivity, group concordance, and confidence). – Behavioral correlates: related to clutter and expertise factors (consistency coefficient K (circular triads) as individual performance; Kendall's τ concordance between individual and group ranking; confidence ratings (50%–100%)). – Incentives: flat payment of 30 CHF for participation.	
Rahadian et al. (2024)	Facial expression analysis	Number of facial action units	Three decision-makers who are experts in the field of fintech and capital markets.	– No formal power analysis: because typical expert-based MCDM studies use three experts. – Triangulation using other measures alongside those listed in the third column: expert linguistic judgments, quantum spherical fuzzy numerical transformation.	Finance
Rose et al. (2022b)	Eye-tracking	Fixation duration, number of fixations, total dwell time, pupil diameter	89 (27 men and 62 women) undergraduate business students (Australia), average age of 20.74 years [...] 0.66 years of professional business experience.	– Luminance/contrast control: the luminance of the screens was approximately 17 lux. – Triangulation using other measures alongside those listed in the third column: behavioral judgment outcomes. – Behavioral correlates: judgment accuracy, integration of uncertainty. – Incentives: students received bonus credit in their course for participation.	Accounting
Rubaltelli et al. (2016)	Eye-tracking	Pupil diameter	41 undergraduate students (20 men and 21 women), mean age = 22.6 years, SD = 2.00, ranging between 19 and 27 years, enrolled at the University of Padova, Italy. Participants had normal or corrected-to-normal vision and completed the study individually.	– Triangulation using other measures alongside those listed in the third column: Trait Emotional Intelligence questionnaire (TEIQue-SF). – Behavioral correlates: investment choice (sell/hold/buy), transitions.	Finance
Seiler and Walden (2015)	fMRI	BOLD	20 mortgage-holding homeowners, average age 44.9, demographically representative of US homeowners (gender, marital status, education) from a mid-sized southwestern city.	– Motion correction/exclusion: motion correction via MCFLIRT. No exclusion reported. – Behavioral correlates: Likelihood-of-default ratings (1–9 scale). – Incentives: Flat 25 USD participation payment. No performance-based incentives (to avoid confounding moral/emotional components).	Finance

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Publication brief reference	Neuro-physiological methods	Metrics	Sample (no. and type)	Key controls	Accounting/ finance
Shane et al. (2020)	fMRI	BOLD	No sample size. Sample type: informal investors	– Triangulation using other measures alongside those listed in the third column: behavioral ratings of investor interest. – Behavioral correlates: investor interest ratings, effect sizes (high passion --> +26% investor interest; high passion --> +39% neural engagement; +1 SD neural engagement --> +8% investor interest).	Finance
Shavit et al. (2010)	Eye-tracking	Total dwell time	27 students (12 men and 15 women), ages 22–26, at a major university.	– Blink/missing data handling: blinks and irrelevant areas excluded; fixation % used to reduce failures. – Behavioral correlates: allocation decisions (how much to invest). – Incentives: participants receive course credit.	Finance
Sirois et al. (2018)	Eye-tracking	Fixation duration, number of fixations, time-to-first fixation	98 graduate accounting students (Canada).	– Triangulation using other measures alongside those listed in the third column: behavioral decisions (loan approval, credit risk score) collected in addition to eye-tracking. – Behavioral correlates: loan decisions, credit risk assessments, recommended loan amount, and interest rate.	Accounting
Slapničar et al. (2021)	fMRI	BOLD	30 accounting and finance professionals (15 men and 15 women) working in Slovenia, aged from 24 to 52, with an average of 12.8 years of experience, mostly holding master's degrees in accounting, finance, or economics.	– Triangulation using other measures alongside those listed in the third column: behavioral misreporting scenarios. – Behavioral correlates: misreporting likelihood (1–7 scale).	Accounting
Toma et al. (2023)	Eye-tracking	Number of saccades, saccade amplitude, Pupil diameter	27 in Round 1, 26 in Round 2, economics/finance graduates or master's students in Romania. Mean age = 26 years; some had trading experience.	– Blink/missing data handling: partial. Two subjects were excluded due to artifacts, and no detailed blink-handling procedure. – Triangulation using other measures alongside those listed in the third column: EEG was recorded simultaneously (reported in other papers by the authors) and not analyzed in this article. – Behavioral correlates: trading decisions, payoffs (log returns), and learning effects across rounds. – Incentives: real monetary payoff of about 10 EUR.	Finance

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Publication brief reference	Neuro-physiological methods	Metrics	Sample (no. and type)	Key controls	Accounting/ finance
Vieito et al. (2015)	EEG	Information content per electrode	40 undergraduate students (20 men and 20 women), average age 27. All had basic financial education.	– - Behavioral correlates: buy/sell/ hold decisions, market condition (bull vs. volatile), learning effects across sessions.	Finance
Warnick et al. (2021)	Facial expression analysis	Number of facial action units, number of changes in facial expressions of emotions	489 funding pitches of Kickstarter campaigns that launched between 2009 and 2016.	– Triangulation using other measures alongside those listed in the third column: qualitative and quantitative mixed methods. – Behavioral correlates: funding amount raised.	Finance
H. Yang and Li (2017)	EEG	Feedback-related negativity	20 male venture capitalists (aged 25–40 years) from a Chinese incubator. Split into experienced and inexperienced groups based on cumulative investment rounds.	– Qualitative power analysis/ sample justification: authors justify sample size by referencing ERP literature norms (16–20 participants adequate). – Luminance/contrast control is partially present. Entrepreneur photos selected from the standardized Chinese Facial Affective System. Neutral expressions used to reduce attractiveness bias. – Blink/missing data handling: participants with excessive eye movement excluded (two removed). No detailed blink correction method is described. – Motion correction/exclusion (EEG): exclusion of participants with excessive movement. No algorithmic motion correction is described. – Triangulation using other measures alongside those listed in the third column: behavioral decisions (keep/share), credibility ratings, and reinforcement learning model. – Behavioral correlates: investment decisions (keep/ share), learning model parameters, credibility ratings. – Incentives: monetary rewards tied to investment outcomes.	Finance
X. Yang et al. (2024)	Eye-tracking	Fixation duration, number of saccades	62 students (31 women and 31 men) from a Chinese university. No significant difference in financial literacy across genders.	– Calibration accuracy emphasized, but no blink interpolation or missing-data protocol described. – Triangulation using other measures alongside those listed in the third column: behavioral (buy/sell decisions, herding), self-report (competitiveness, risk aversion, overconfidence, financial literacy, demographics).	Finance

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Publication brief reference	Neuro-physiological methods	Metrics	Sample (no. and type)	Key controls	Accounting/ finance
				– Behavioral correlates: herding (binary), gaze difference (relative fixation time difference), trade imbalance, incentive preferences. – Incentives: linear vs. tournament incentives; real monetary payoff.	
Zhang et al. (2023)	Facial expression analysis	Intensity of expressions of emotions	60 undergraduate and graduate business students (29 men, 31 women, $M_{age} = 22.76$) with investment experience from a large university in China, as the proxy for investors.	– Triangulation using other measures alongside those listed in the third column: behavioral self-reports (anger, moral, judgment, investment). – Behavioral correlates: moral judgment, investment decision.	Finance