Aminah AlWehaib*

Comprehensive Layered Embezzlement and Fraud Model in Financial Crime Prevention

https://doi.org/10.1515/mks-2025-0006

Abstract: This research develops the Comprehensive Layered Embezzlement and Fraud (CLEF) model as a preventative tool to examine the root cause of the offender's psychology and mitigate financial crime before its execution. Building upon an integrative theoretical analysis of the fraud triangle, fraud diamond, fraud hexagon model and crime-as-choice theory, the CLEF model outlines the foundational layers necessary for characterising the personalities and psychology of embezzlers – specifically, dark triad traits – and institutional responses to embezzlement and fraud as a proof of concept. The CLEF model explains modern embezzlement through hypothetical scenarios – functioning as case studies – that illuminate the conditions conducive to such financial malfeasance. The model addresses cross-jurisdictional variations in embezzlement patterns and establishes the foundations of preventive measures – unlike traditional reactive frameworks. By emphasising prevention rather than detection, the model contributes to reducing the social and economic costs of financial crimes, providing the foundations for effective regulatory frameworks and organisational policies. Although the model offers an innovative psychological lens to understand the embezzler's behaviour and mindset, empirical validation is essential to assess its applicability across diverse cultural and organisational contexts.

Keywords: Embezzlement, Financial crime, White-collar crime, Criminal psychology, Corporate crime, CLEF model, Fraud theory, Dark triad

1 Introduction

White-collar criminality encompasses numerous trust violations, including securities manipulation, banking irregularities, postal fraud and tax evasion (Simpson & Weisburd, 2009). Embezzlement is a subset of fraud in which fiduciaries misappropriate assets that are lawfully under their control, thereby distinguishing it from theft, which involves unlawful initial possession. Furthermore, embezzlement occurs when the property or asset is misappropriated, regardless of subsequent restitution (Ünvan, 2020). By operating within frameworks of trust, embezzlers exploit systemic vulnerabilities through incremental, calculated extractions that are designed to avoid detection by exploiting internal trust relationships rather than compromising external systems (Schuchter & Levi, 2016).

Personality is considered stable in adulthood and is influenced by numerous factors, including genetics, gender, trauma, experience, behavioural reinforcement, social expectations, identity and neurochemistry (Cleff, Naderer, & Volkert, 2011; Félix, 2015; Şenocak & Özmen, 2022). Nevertheless, personality characteristics alone are not sufficient to determine the likelihood of engaging in white-collar crime (Blickle, Schlegel, Fassbender, & Klein, 2006). This study introduces a conceptual model for understanding embezzlement and fraud that extends beyond the existing theories and individual personality characteristics, incorporating broader cognitive, organisational and contextual factors that shape criminal behaviour.

2 Theoretical Framework

2.1 Previous Models

2.1.1 Cressey's models

Cressey's (1953) fraud triangle theory delineates three precipitating factors: pressure, opportunity, and rationalisation. Pressures constitute motivations arising from financial circumstances, performance benchmarks, indebtedness, or occupational stressors (Cressey, 1953). The MICE (money, ideology, coercion, ego) model expands these dimensions (Vousinas, 2021). Opportunity correlates with internal control efficacy, which functions as prophylactic mechanism attenuating fraud capacity through enhanced oversight (Schuchter & Levi, 2016). Internal controls constrain avenues through which fraud may be perpetrated

***Corresponding author: Aminah AlWehaib**, Department of International Law and Financial Crime, University of Manchester (UOM), Department of International Law, Kuwait International Law (KiLaw), E-Mail: a.alwehaib@kilaw.edu.kw; aminah.alwehaib@postgrad.manchester.ac.uk

Open Access. © 2025 the author(s), published by De Gruyter. This work is licensed under the Creative Commons Attribution 4.0 International License.

(Homer, 2020). Rationalisation entails cognitive dissonance mitigation whereby individuals exculpate fraudulent behaviour as legitimate whilst preserving moral self-concept (Cressey, 1953). Embezzlers may justify their actions as a form of reparation for workplace injustices or reframe the theft of temporary 'loans' intended to be repaid (Schuchter & Levi, 2016). Over time, rationalisations evolve, progressively eroding moral constraints (Omar, Nawawi, & Salin, 2016).

Wolfe and Hermanson expanded Cressey's framework by introducing capability as a fourth element, transforming the triangle into a diamond. They suggested that notwithstanding pressure, opportunity and rationalisation, successful fraud execution necessitates specific skills, traits and authority (Wolfe & Hermanson, 2004). Capability encompasses confidence, knowledge and positional power, including effective deception, coercive influence and systems circumvention acumen (Dilla, Harrison, Mennecke, & Janvrin, 2013). Although the Fraud Diamond advances comprehension of the components of financial crime, it adopts a linear approach that fails to account for the interconnected nature of these influences (Kanten & Ulker, 2013). It fails to capture how organisational facilitators simultaneously affect opportunity, rationalisation and collusion (Villaescusa, 2022).

Corruption studies demonstrate contrasting approaches: criminology emphasises descriptive aspects, whilst sociological approaches contextualise social dimensions. Rational-choice has predominated as micro-sociological explanation, with non-utilitarian aspects only considered (Luna, 1999). The voluntaristic crime theory links individuals' values, social norms to delinquent behaviour. Values grounded in religion, tradition, conformity, and idealism are aligned with acceptance of legal norms and lowers propensities for criminal conduct. In contrast, materialistic, hedonistic, subcultural, and stimulation-driven values undermine legal adherence and elevate the risk of deviant behaviour (Vogt, 2023).

2.1.2 Crime-as-Choice Theory (2005)

Crime as a choice theory posits that individuals commit crimes based on free will and rational calculation, rather than being compelled by biological, psychological, or social forces. Predicated upon microeconomic assumptions, the crime-as-choice theory argues that criminal action is not invariably sensible (Shover & Hochstetler, 2005). Primary contributing factors include the existence of crime-prone individuals or organisations, the availability of incentives, perceived credibility of monitoring mechanisms, internal morality, and the accessibility of criminal opportunities (Alalehto, 2015). White-collar crime analyses often draw upon unrelated theoretical constructs (Paternoster, 2019). Empirical studies investigate justification strategies, including responsibility denial, injury denial, victim denial, condemner condemnation and appeals to higher loyalties (Apel, 2013; Reyna & Farley, 2006). Pragmatic approaches neglect substantive connections between individual factors. The Leipzig Process Model systematises connections between motives, opportunities and external circumstances (Meynhardt, Kirchgeorg, Suchanek, & Zülch, 2019). While crime-as-choice theory highlights rational deliberation in criminal behaviour, it fails to account for the emotional, social, and psychological influences that shape decision-making. In particular, it overlooks how embezzlers internalise justifications and moral disengagement strategies that enable the persistence of their misconduct.

It was contended that fraudulent conduct stems from individual psychological and systemic organisational determinants, whilst fraud risk assessments may adapt to evolving perpetrator tactics (Dorminey, Fleming, Kranacher, & Riley, 2012; Dorminey, Scott Fleming, Kranacher, & Riley, 2012).

Embezzlement and other forms of white-collar crime emerge from the intersection of personal psychological tendencies and systemic organisational dynamics, each influenced by the wider sociocultural environment and prevailing economic conditions (Cleff, Naderer, & Volkart, 2011).

The CLEF model offers a jurisprudential mapping of the interaction between internal motivational structures (e. g., ego dynamics, cognitive dissonance, behavioural conditioning) and external criminogenic stimuli (e. g., societal pressure, institutional rationalisation mechanisms, systemic vulnerabilities). Accordingly, assessments of criminal liability in financial crime adjudication should consider the offender's volitional intent, organisational complicity, and broader contextual factors that facilitate criminal conduct (Bergmann, 2016).

2.2 Personality Traits of Offenders

Criminal behaviour is influenced by the personality of the offender. Personality can be defined as a set of collective traits that influence a person's thought patterns, emotions, and behaviour. Individuals' personality traits shape their propensity to engage in fraudulent behaviour, certain behavioural tendencies are associated with greater fraud risk. However, there is no single trait or factor that can account for fraudulent behaviour, since many other factors typically influence it. This section explores the relationship between personality in the context of the dark triad.

The Dark Triad – comprising psychopathy, narcissism and Machiavellianism – provides a critical framework for understanding cognitive distortions and strategic manipulations employed by financial criminals (Stiff & Reeves, 2024). These traits are linked to a diminished capacity for empathy, an exaggerated sense of self-importance, and a calculated willingness to exploit others for personal or organisational gain. In white-collar crime, individuals exhibiting Dark Triad characteristics may rationalise unethical conduct, manipulate trust systems, and navigate hierarchical structures to conceal fraudulent activity and maintain a façade of legitimacy (Blickle, Schlegel, Fassbender, & Klein, 2006). This triad encompasses emotional detachment, entitlement, self-enhancement, and strategic manipulation (Rauthmann, 2012). It was identified that five distinct white-collar offender profiles: egocentric visionaries exhibiting exceptional intellect and calculated behaviour; frustrated visionaries with comparable intellectual attributes but altruistic motivations; narcissistic visionaries utilising financial success to reinforce grandiose self-perceptions; naive offenders demonstrating below-average cognitive abilities; and dependent offenders displaying strong interpersonal attachments prompting criminal conduct despite contravening personal morality (Cleff, Naderer, & Volkert, 2011; South, Barkus, Walter, Mendonca, & Thomas, 2023). Narcissism manifests in grandiose and vulnerable forms, sharing core characteristics including aggressive interpersonal conduct, self-importance, entitlement and hypersensitivity to criticism (Harrison, Summers, & Mennecke, 2018). Whilst grandiose narcissism features heightened self-confidence with internal validation reliance, vulnerable narcissism exhibits external validation dependence with oscillating self-perception (Sugawara & Nikaido, 2014).

Empirically, narcissism inversely correlates with financial crime, whilst Machiavellianism positively associates with such offences, involving manipulative tactics valuing expediency over principle (Sokić, 2022). Psychopathy has no significant direct impact on financial offending. Primary psychopathy features absence of guilt, elevated callousness, manipulative behaviour and superficial affect. Secondary psychopathy is characterised by impulsivity, antisocial behaviours and anxiety stemming from ineffective emotional regulation (Wu, Wang, Zheng, & Wu, 2019). Economic psychopaths operate charmingly within corporate structures, exhibiting manipulative tendencies in leadership roles. Economic downturns create optimal conditions for them, with weakened oversight facilitating system manipulation for corporate gain. Elevated testosterone levels associate with dominance and status-seeking, reinforcing psychopathy and Machiavellianism traits (South, Barkus, Walter, Mendonca, & Thomas, 2023).

Cortisol dysregulation governs psychological responses relevant to financial crime. Low cortisol levels are often associated with hypo-arousal and heightened impulsivity. Such individuals may exhibit reduced sensitivity to potential punishment or social disapproval. Whereas high cortisol levels are associated with narcissism, including heightened sensitivity to ego threats, stress reactivity, and a persistent need for validation and control. This hormonal imbalance may drive manipulative and self-serving conduct, particularly in high-pressure environments where status preservation is perceived as critical (Wagener, Schulz, & Melzer, 2024).

Summarily, psychopathic individuals demonstrate strategic deceitfulness, neutralising ethical constraints. Narcissistic personalities manifest an advanced fraud archetype characterised by intrinsic grandiosity. Machiavellian traits demonstrate calculated interpersonal approaches prioritising personal objectives through exploitation strategies (Orhan & Collisson, 2022).

3 Distinguishing Occupational and Corporate Crime

Occupational crime involves individuals exploiting their professional roles to illicitly appropriate organisational resources for personal financial gain. In contrast, corporate crime occurs at the organisational level and is typically oriented toward enhancing shareholder value or advancing institutional objectives. Although this distinction may suggest a binary classification, both forms of misconduct operate along a continuum defined by the extent of organisational embeddedness and the identity of the beneficiaries. Occupational offenders often act independently within institutional frameworks, using their positional authority to circumvent internal controls while distinguishing between personal gain and corporate interests. By comparison, corporate crime is characterised by collective decision-making processes, frequently legitimised through formal governance structures, wherein unethical conduct may become routinised and embedded within organisational procedures.

Corporate crime is increasingly recognised in contemporary legal scholarship as a complex phenomenon marked by dispersed accountability within hierarchical structures and incentive systems that prioritise financial performance over regulatory compliance (Von Bergmann, 2016).

Contemporary legal developments increasingly acknowledge the concept of corporate legal personality while strengthening vicarious liability doctrines, thereby expand-

ing prosecutorial frameworks to hold both organisations and individual actors accountable for corporate misconduct. (Kölbel, 2025). Corporate criminal capabilities emerge through institutional mapping of professional behaviours, wherein organisational mechanisms systematically shape potential misconduct through intricate indicator systems (Von Bergmann, 2016). Performance metrics tracking individual productivity, reward structures incentivising aggressive financial strategies, and implicit professional norms valuing technical innovation over ethical constraints collectively establish pathways for normalised deviance within organisations (Anand, Ashforth, & Joshi, 2005).

Criminal potential may develop through gradual institutional normalisation rather than individual predisposition, with corporate contexts providing legitimisation frameworks that systematically erode ethical boundaries through incremental policy adjustments and procedural exceptions (Körtl & Chbib, 2024). Institutional pressures, including quarterly performance expectations, competitive market positioning requirements, and regulatory arbitrage opportunities, create environmental conditions wherein technical compliance becomes disaggregated. Occupational crime fundamentally differs in its perpetrator-benefit orientation, with individual actors exploiting institutional vulnerabilities whilst maintaining clear separation between personal financial advantage and organisational interests (Smith & Lilienfeld, 2013). The embezzler's methodological approach frequently involves systematic micro-diversions, exploiting audit limitations and internal control weaknesses whilst maintaining outward professional conformity. Psychologically, occupational offenders exhibit heightened self-interest maximisation, with limited organisational identification beyond career advancement, whereas corporate criminals frequently demonstrate strong institutional affiliation through psychological mechanisms of groupthink and collective rationalisation. Corporate crime prevention, conversely, requires structural interventions addressing systemic incentive misalignments, governance limitations, accountability diffusion, ethical culture development and compliance internalisation beyond technical regulatory adherence.

3.1 Fraudsters and Embezzlers for Criminal Laws

Financial instability engenders optimal conditions for fraudulent activities, as exemplified in the Hanbo Steel Scandal ("Hanbogate"), wherein systematic fraud through collusive lending arrangements valued at £3.2 billion led to bankruptcy and prosecution (Quah, 2011). Not only in South Korea, in Kuwait, oversight is administered through multiple ex ante auditing bodies, with State Audit Bureau (SAB) and Central Agency for Public Tenders which operates under Public Tenders Act 49/2016 and SAB Act 30/1964. However, effective fraud prevention demands more than mechanical oversight; it requires addressing root psychological and structural enablers. Embezzlement methodology typically manifests in three distinct stages: falsification of contracts; to gain access to public or institutions funds; abuse of official authority by facilitating fund diversion; and concealment through substandard work delivery or price differential misappropriation (Al-Rashidi, 2024). The United Kingdom, prosecutions under The Financial Services and Markets Act 2000 section 397 and Fraud Act 2006 section 4, have addressed major cases such as the falsification of ETF records (King & Van Vuuren, 2016). Bernie Madoff's 'Ponzi scheme' involved prosecution under 18 U.S.C. § 1343, § 1341, § 1957 and § 371 (Mohammad I. Azim & Saiful Azam, 2016). Prominent cases in the UK include the Joyti De-Laurey case at Goldman Sachs and Nick Leeson's role in the collapse of Barings Bank, prosecuted under the FSMA 2000, Fraud Act 2006, and Extradition Act 1989 (Drummond, 2002; Greener, 2006).

Despite regulatory advances, fraud persists essentially due to monopolistic control and unchecked discretion within corporate structures, whilst weak accountability mechanisms fail as effective deterrents. Madoff's case demonstrated how institutional trust obscured ongoing fraud (Iheme, 2023). Governmental structures frequently enable rationalisations, particularly when individuals hold trust positions with unlimited financial resource access. Organisational trust fosters entitlement, allowing offenders to justify actions as rightful compensation (Asokan, Huq, Smith, & Stevenson, 2022). Fraudulent schemes rely on intelligence and strategic deception, including legal loophole knowledge and financial engineering techniques (Mohammad I. Azim & Saiful Azam, 2016)

4 Comprehensive Layered Embezzlement and Fraud (CLEF) Model.

Fraud perpetrators do not simply act out of greed or opportunism; rather, their behaviour is shaped by a converging social, organisational, and cognitive influence. In order to bridge this gap in understanding, there is a need for a more comprehensive framework that exceeds the full complexity of white-collar crime and goes beyond reductionist explanations. Section 2 explained how existing theories are deficient in explaining and predicting embezzlers' behav-

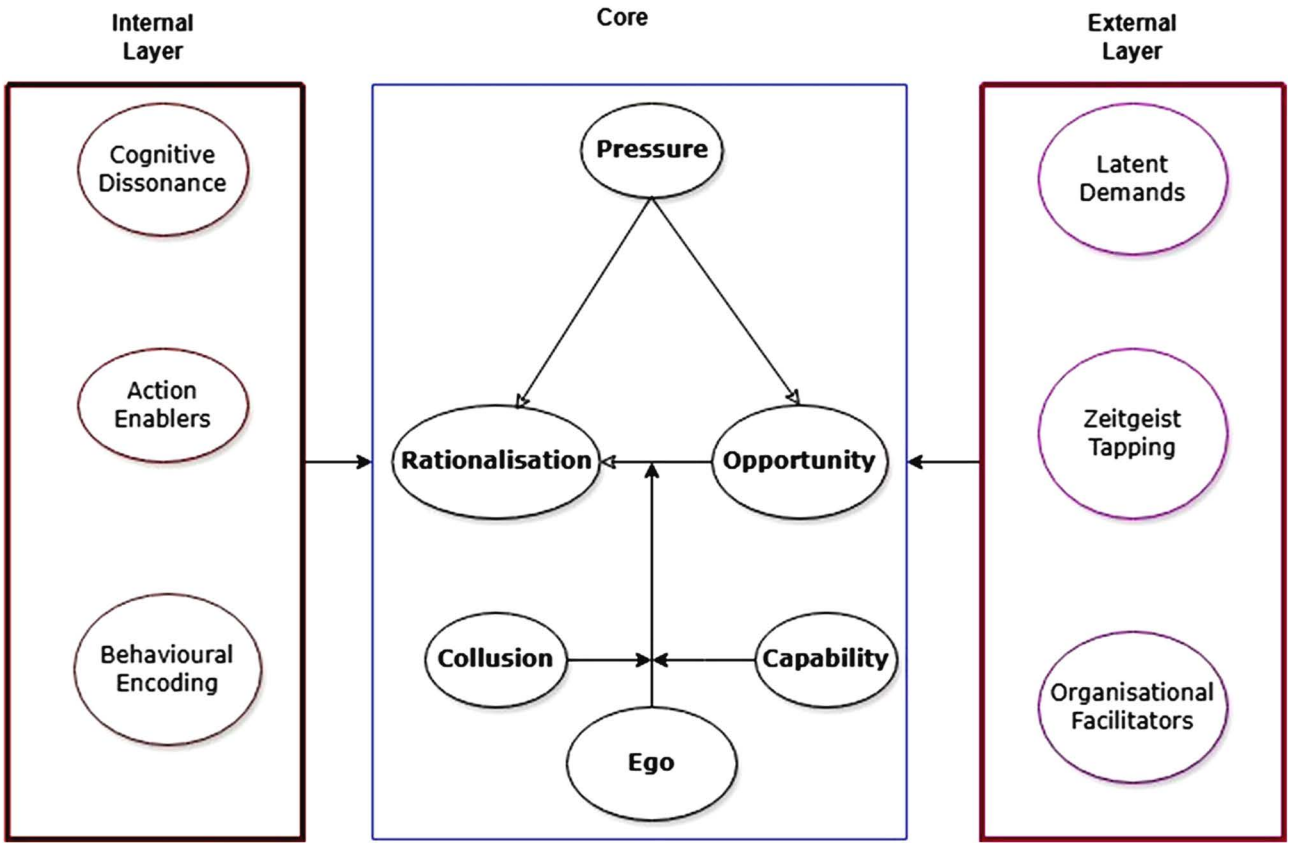

Figure 1: Main architecture of the Comprehensive Layered Embezzlement and Fraud (CLEF) Model by AlWehaib

iour. Therefore, a broader framework is proposed for understanding criminal actions through interconnected layers of criminogenic influences and both external and internal motivations.

The CLEF model does not focus on individual traits or systemic failings in isolation but incorporates the mechanisms by which external influences shape the internal motivations for criminal action to support more effective forensic investigations, regulatory interventions and organisational safeguards. The elements of the external layer interact differently based on a person's hierarchical position, with those in senior positions more influenced by industry-wide practices and lower-level employees more impacted by immediate workplace culture.

4.1 CLEF Description

Criminal behaviour is the culmination of conflicting and merging socio-psychological forces operating at different levels, so the new model's structure is a deliberate move away from linear causation, instead embracing a network of interdependent factors that collectively contribute to criminal decision-making and action. Figure 2 demonstrates the hierarchical relationships between the societal, organisational and psychological factors that influence the six core elements of criminal conduct, with directional arrows representing causal and influential pathways.

The external layer of the model encompasses societal pressure, organisational facilitators and structural opportunities. The first – latent demands – manifests through cultural expectations, economic disparities and social norms that may encourage or legitimise criminal behaviour, influencing an individual's rationalisation, ego formation and response to pressures. Organisational facilitators are the institutional or systemic elements that can enable criminal behaviour, such as weak oversight mechanisms, corrupt organisational cultures and ineffective regulatory frameworks, which create pathways to criminal opportunities while providing contexts for rationalisation and collusion. The third component – structural opportunities – emerges from the inherent vulnerabilities within social, economic and legal systems, interacting with an individual's capabilities and their ability to recognise and exploit situational weaknesses.

Within the external factors, latent societal demands can manifest through status-led pressures, which create sta-

tus-driven expectations and social comparisons. For example, corporate officers that embezzle company funds to maintain luxury lifestyles to match their perceived peer expectations; they exhibit heightened sensitivity to social comparison and status anxiety. Similar patterns of pressure can also be seen in accounting fraud schemes, where executives manipulate financial statements to preserve their professional standing, or in insider trading schemes, in which executives exploit privileged information about mergers or earnings.

Perpetrators can also exploit systemic vulnerabilities that create fraud opportunities, such as regulatory gaps and oversight deficiencies, particularly in complex financial environments; because the specific vulnerabilities and opportunities may only be temporary before they are corrected, this is termed *zeitgeist tapping*. Current examples include cryptocurrency pump-and-dump schemes, in which fraudsters exploit technical complexity, regulatory gaps and control circumvention (e. g., stolen credentials and synthetic identities, which require the adaptive intelligence typical of white-collar criminals). When an organisation's ethical climate and an individual's financial misconduct propensity match, organisational facilitators can facilitate the process of normalising and incentivising fraud by mediating external pressures and internal rationalisations.

The internal layer comprises cognitive dissonance, action enablers and behavioural encoding. Cognitive dissonance emerges from individuals – especially narcissists – seeking to manage the contradictions between their capabilities, technical competence, ego-driven motivations, power needs and risk-tolerance thresholds. Such dissonance is obvious in financial Ponzi schemes, whose operators must maintain public persona of a legitimate investment manager even whilst running a scheme they know is fraudulent and destined for failure.

Action enablers include technical competence and opportunity recognition, which can enable fraudulent schemes that use complex devices of concealment and conversion and networks of collusion; an example is wire fraud schemes in which the perpetrators create elaborate networks of shell companies and false documentation. Behavioural encoding and the associated reframing mechanisms manage the individual's cognitive justifications and changing ethical thresholds, allowing the erosion of their personal integrity and moral obligations, such as the gradual normalisation of offshore accounts in tax evasion schemes or the reframing of corporate bribes as 'consulting fees' or 'facilitation payments'. The CLEF model integrates occupational crime and corporate crime. Occupational crime involves individuals acting in self-serving ways within their employment context, while corporate crime encompasses wrongdoing that directly benefits the organisation.

Criminal conduct emerges when individual personality predispositions converge with favourable contextual conditions. Traits such as reduced empathy, increased entitlement, and manipulation become criminogenic within organisational environments characterised by weak oversight, complex financial systems, and a culture of ethical compromise. In such settings, individuals in positions of trust may exploit structural vulnerabilities. Perceived status threats and relative deprivation can then trigger criminal acts, both with and without dark triad traits: some embezzlers may have no dark triad features yet still respond criminally to situational pressures. This lock-and-key causation explains why identifying and avoiding the coincidence of situational, managerial and technical factors are instrumental in preventing and detecting financial crime.

The internal layer of the model characterises how external influences mediate internal triggers that activate criminal tendencies, which then work in concert with ego structures and rationalisation processes to generate criminal actions. Thus, removing opportunities or increasing penalties may be insufficient if societal pressures and psychological catalysts remain unaddressed. Such catalysts may include personal grievances, perceived injustices or emotional states predisposing individuals to criminal behaviour.

Behavioural rationalisation comprises the cognitive processes individuals use to justify their actions, often involving moral disengagement or neutralisation techniques. This component explains why otherwise law-abiding citizens might engage in criminal conduct. The final internal component, action enablers, encompasses the psychological mechanisms that facilitate the transition from criminal intent to criminal action, including risk assessment, decision-making processes and behavioural control.

Similar to previous theories, the core elements collectively represent the fundamental components necessary for criminal behaviour to occur, comprising pressure (triggering event or condition), capability (skills or resources needed), collusion (supporting network or relationships), opportunity (practical possibilities for action), rationalisation (internal justification) and Freudian ego (self-concept that permits the behaviour). These core elements interact with the external and internal layers, amplifying or inhibiting criminal tendencies, with the interaction between organisational facilitators and psychological rationalisation especially conspicuous. The model's value thus lies in its explanatory power and its potential practical applications in contemporary forensics.

The CLEF model does not focus on either individual traits or systemic failings in isolation but incorporates the mechanisms by which external influences shape the inter-

nal motivations for criminal action in order to support more effective forensic investigations, regulatory interventions and organisational safeguards. The elements of the external layer interact differently based on a person's hierarchical position, with those in senior positions more influenced by industry-wide practices and lower-level employees more impacted by immediate workplace culture.

The CLEF model thus reveals how societal pressures interact with the limits of a person's organisational power. At the entry-level, employees typically exploit basic operational opportunities, with behavioural rationalisation centering on 'temporary borrowing' and the action enablers being a detailed knowledge of routine procedures. The pressure usually arises from immediate financial needs, with capabilities limited to basic transaction manipulation and collusion, often involving peer-level relationships. Organisational facilitators are usually more important than system access or authority, and rationalisation often involves 'deserved compensation' or complaints about perceived organisational injustice. Ego-driven motivations can be intensified by status consciousness and professional identity investment.

While entry-level employees exploit system access within narrow operational domains, executives can do more with automated systems by optimising position-specific opportunities and constraints. 'Corporate necessity' or 'shareholder value' justifications can then emerge, with societal pressure manifesting as public expectations and legacy considerations. Structural opportunities arise from systemic oversight gaps and institutional deference, with capabilities enhanced by access to financial instruments and advisory networks.

Criminal capabilities emerge through a complex institutional mapping of professional behaviours, where organisational mechanisms systematically shape potential misconduct through intricate indicator systems (performance metrics tracking individual productivity, reward structures incentivising aggressive financial strategies, implicit professional norms valuing technical innovation over ethical constraints). Criminal potential may develop through gradual institutional normalisation rather than individual predisposition. Thus, Cressey's trust violation interact with specific situational pressures (financial constraints, competitive environments, asymmetric information access) to enable strategic legal boundary transgressions, rather than professional identity formation, organisational learning mechanisms, regulatory environment plasticity).

A strong integrity-driven culture can deter fraud, whereas high-pressure performance metrics can unintentionally incentivise it. The model therefore also incorporates organisational feedback loops, enabling continuous adaptation of policies in response to observed behaviours, such as unethical practices emerging from incentive structures. Additionally, the model emphasises the creation of a 'cognitive climate' that encourages ethical self-regulation through ethical training, and it highlights how legislative changes, economic conditions and industry norms shape fraud risk, thereby promoting proactive regulatory engagement and adaptive compliance strategies.

Finally, the model addresses globalisation and emerging technologies, accepting that innovations like cryptocurrency and decentralised finance can create novel fraud opportunities that require advanced detection tools, such as blockchain verification and AI-driven analytics. Empirically, the 2022 collapse of FTX revealed regulatory blind spots in crypto asset oversight and demonstrated how decentralised systems can obscure accountability. In such contexts, advanced detection tools – such as blockchain forensic analytics (e. g., Chainalysis), smart contract auditing, and AI-based wallet risk scoring – can offer granular visibility and early intervention capabilities. However, effective implementation hinges on cross-border regulatory coordination and sector-specific standards to prevent fragmented enforcement regimes.

The next phase should focus on pilot validation through expert elicitation, cognitive interviewing, and structured case comparisons to test construct relevance and item interpretability. This should be followed by field-level deployment using a sequential mixed-methods design. We developed a structured survey to empirically validate the CLEF model, with theoretically oriented architecture covering three strata: foundational elements, individual psychological drivers, and broader institutional frameworks. For instance, the "Pressure" section presents four elaborately framed scenarios that dissect status anxiety's role in misconduct, with matters such as one positing that a materialistic value orientation exacerbates perceived pressure from conspicuous consumption norms – illustrated by an associate misappropriating funds to emulate the luxury lifestyle of senior partners – and another asserting that individuals with an external locus of control experience heightened strain under performance-contingent remuneration regimes.

The "Organisational Facilitators" section interrogates institutional structures, with focus on procedural complexity, technological stratification, information asymmetries between system administrators and oversight entities. The "Zeitgeist Tapping" section examines how evolving institutional norms – such as regulatory inertia in the face of financial innovation or escalating compensation benchmarks –. However, insufficient response rate garnered from the intended expert cohort, comprising legal practitioners,

academics, and forensic professionals. This shortfall precluded the attainment of including results here. Instead, we offer a scenario for clarification.

4.2 Hypothetical Scenario

Consider Marcus, a stock exchange chairman running an investment advisory firm, who perpetrated a $65 billion Ponzi scheme over 4 years by exploiting his dual regulatory investment position. Using a segregated office with trusted family members, he maintained parallel books showing fictitious trades and actual money movements, employing antiquated systems to control documentation. The scheme involved cycling newer investments to pay earlier investors' redemptions while maintaining false records of non-existent trading activity, enabled by his institutional authority and expertise.

In the external layer, latent demands manifested through intense societal pressure to maintain his public image as a market leader and philanthropist, driving his luxurious lifestyle and the scheme's perpetuation. Organisational facilitators emerged from his unique dual position, allowing him to exploit regulatory gaps while controlling documentation and compliance. Structural opportunities arose from the complex financial environment and his ability to leverage his exchange position to create an aura of legitimacy around his investment operations.

The internal layer revealed cognitive dissonance in managing contradictory roles as both regulator and fraudster, requiring sophisticated behavioural encoding to maintain the deception. Action enablers included his technical market expertise, institutional knowledge, and extensive professional networks that facilitated the fraud's complexity and longevity. His behavioural encoding evolved to normalise the deception, mainly through systematically creating false records and maintaining separate operational spaces.

Within the core elements, the pressures likely originated from early success in attracting investments through his reputation, creating pressure to maintain impossible returns. His capability was exceptional, combining market expertise with institutional authority. Collusion was achieved through a trusted family-based inner circle that maintained the deception. The opportunity was unprecedented due to his dual position and authority. His rationalisation likely centred on self-perceived market genius and the belief in eventual legitimisation, while his ego was reinforced by his status as a trusted market leader.

The CLEF model mainly illuminates how his position created unique interactions between organisational facilitators and psychological rationalisation, enabling him to establish sophisticated concealment mechanisms while maintaining a façade of legitimacy. The feedback loops between external validation (through continued investment and social acclaim) and internal justification strengthened the behavioural encoding sustaining the fraud, demonstrating how position-specific opportunities, societal status, and psychological mechanisms coalesced to enable this massive fraud within the financial system's core.

The zeitgeist tapping was evident in his exploitation of trust in institutional authority and complex trading strategies, combined with investors' desire for consistent above-market returns in increasing financial sophistication.

That said, regulatory frameworks and evidentiary standards must evolve to accommodate the forensic application of multi-layered models like CLEF, allowing courts and investigative bodies to account for the non-linear, interactive, and incremental development of white-collar offences. The practical import lies in recognising that deterrence and detection are insufficient under current prosecutorial and compliance regimes unless reinforced by structural interventions addressing both offender psychology and the institutional environments that incubate fraud. It is recommended that legislative bodies amend existing fraud statutes to incorporate a presumption of institutional complicity where demonstrable patterns of internal control deficiencies, repeated compliance failures, or incentive structures rewarding unethical conduct are present.

5 Conclusion

White-collar crime occurs at the intersection of individual psychological predispositions and systemic organisational facilitators, each operating within broader sociocultural and economic contexts. While models based on linear causality, such as the traditional Fraud Triangle, have contributed to foundational understandings of occupational fraud, they offer limited explanatory power when applied to the multifaceted nature of embezzlement behaviour.

The CLEF model offers a jurisprudentially significant framework by tracing the interplay between internal motivational architecture (e. g., ego structure, cognitive dissonance, behavioural encoding) and external criminogenic stimuli (e. g., latent societal demands, institutional rationalisation opportunities, structural vulnerabilities). This reconceptualisation aligns with evolving legal doctrines of culpability and institutional liability, particularly where corporate complicity or systemic oversight failures are demonstrable.

Criminal liability assessments for all financial crimes should therefore consider the offender's volitional intent in the context of contributary organisational complicity and situational enablers. Regulatory and evidentiary standards must also evolve to accommodate the forensic application of multi-layered models like CLEF to allow courts and investigative bodies to account for the non-linear, interactive and incremental development of white-collar offences.

The practical importance of this model lies in its recognition that deterrence and detection are insufficient under current prosecutorial and compliance regimes unless reinforced by structural interventions that address offender psychology and the institutional environments that can incubate fraud, including embezzlement. It is recommended that legislative bodies amend existing fraud statutes to incorporate a presumption of institutional complicity when there are demonstrable patterns of internal control deficiencies, repeated compliance failures or conspicuous incentive structures that reward unethical conduct.

Acknowledgements: None
Conflict of Interest: None.
Funding: None.
Informed consent: Not applicable.
Author's contribution: AA is the sole author.
Data Availability Statement: Available unreasonable request from the author.

References

Al-Rashidi, K. S. (2024). Controlling embezzlement in Kuwait through situational crime prevention. *Journal of Economic Criminology, 6*, 100094. https://doi.org/10.1016/j.jeconc.2024.100094

Alalehto, T. (2015). Integrated criminology and biological related criminology facing white collar crime. In Guzman, J. (Ed.), *Advances in Criminology Research* (pp. 41–72. Nova Science Publishers.

Anand, V., Ashforth, B. E., & Joshi, M. (2005). Business as usual: The acceptance and perpetuation of corruption in organizations. *Academy of Management Perspectives, 19* (4). https://doi.org/10.5465/AME.2005.19417904

Apel, R. (2013). Sanctions, Perceptions, and Crime: Implications for Criminal Deterrence. *Journal of Quantitative Criminology, 29* (1), 67–101. https://doi.org/10.1007/s10940-012-9170-1

Asokan, D. R., Huq, F. A., Smith, C. M., & Stevenson, M. (2022). Socially responsible operations in the Industry 4.0 era: post-COVID-19 technology adoption and perspectives on future research. *International Journal of Operations & Production Management*, 42(13), 185–217. https://doi.org/10.1108/IJOPM-01-2022-0069

Bergmann, J. (2016). Corporate crime, criminological theory and sociology of organizations. *Monatsschrift für Kriminologie und Strafrechtsreform, 99* (1), 3–22. https://doi.org/10.1515/mkr-2016-0103

Blickle, G., Schlegel, A., Fassbender, P., & Klein, U. (2006). Some personality correlates of business white-collar crime. *Applied Psychology, 55* (2). https://doi.org/10.1111/j.1464-0597.2006.00226.x

Cleff, T., Naderer, G., & Volkert, J. (2011). Motives of white-collar crime: Results of a quantitative and qualitative study. *Monatsschrift für Kriminologie und Strafrechtsreform, 94* (1), 4–16. https://doi.org/10.1515/mks-2011-940102

Cressey, D. R. (1953). The Criminal Violation of Financial Trust. *American Sociological Review, 15* (6), 738. https://doi.org/10.2307/2086606

Dilla, W. N., Harrison, A. J., Mennecke, B. E., & Janvrin, D. J. (2013). The assets are virtual but the behavior is real: An analysis of fraud in virtual worlds and its implications for the real world. *Journal of Information Systems, 27* (2), 131–158. https://doi.org/10.2308/isys-50571

Dorminey, J., Fleming, A. S., Kranacher, M.-J., & Riley, R. A. (2012). Financial Fraud: A New Perspective on an Old Problem Financial Fraud. *The CPA Journal, 82* (6).

Dorminey, J., Scott Fleming, A., Kranacher, M. J., & Riley, R. A. (2012). The evolution of fraud theory. *Issues in Accounting Education, 27* (2). https://doi.org/10.2308/iace-50131

Drummond, H. (2002). Living in a fool's paradise: the collapse of Barings' Bank. *Management Decision, 40* (3). https://doi.org/10.1108/00251740210420183

Félix, J. (2015). Profit, embezzlement, restitution. The role of the traitants in the Nine Years War and Chamillart's tax on financial benefits. *Revue Historique, 676* (4), 831–874. https://doi.org/10.3917/rhis.154.0831

Greener, I. (2006). Nick Leeson and the Collapse of Barings Bank: Socio-Technical Networks and the 'Rogue Trader'. *Organization, 13* (3). https://doi.org/10.1177/1350508406063491

Harrison, A., Summers, J., & Mennecke, B. (2018). The Effects of the Dark Triad on Unethical Behavior. *Journal of Business Ethics, 153* (1), 53–77. https://doi.org/10.1007/s10551-016-3368-3

Homer, E. M. (2020). Testing the fraud triangle: a systematic review. *Journal of Financial Crime, 27* (1). https://doi.org/10.1108/JFC-12-2018-0136

Iheme, W. C. (2023). Rethinking the effectiveness of consumer protection policies and measures in the financial marketplace. *Juridicas*, 19(2), 165–185. https://doi.org/10.17151/jurid.2022.19.2.9

Kanten, P., & Ulker, F. (2013). The Macrotheme Review. *A Multidisciplinary Journal of Global Macro Trends, 2* (4), 144–160.

King, J., & Van Vuuren, G. W. (2016). Flagging potential fraudulent investment activity. *Journal of Financial Crime, 23* (4). https://doi.org/10.1108/JFC-09-2015-0051

Kölbel, R. (2025). Corporate delinquency and corporate sanctions: A dilemma for the criminological critique of criminal law?. Monatsschrift für Kriminologie und Strafrechtsreform, in press https://doi.org/10.1515/mks-2025-0020

Körtl, C., & Chbib, I. (2024). Illicit enrichment in Germany: An evaluation of the reformed asset recovery regime's ability to confiscate proceeds of crime. International Review of Law and Economics, 80, 106230. https://doi.org/10.1016/j.irle.2024.106230

Luna, F. (1999). Corruption and research. Bioethics, 13(3-4), 262–271. https://doi.org/10.1111/1467-8519.00155

Meynhardt, T., Kirchgeorg, M., Suchanek, A., & Zülch, H. (2019). Powerful or powerless? Beyond power and powerlessness: the Leipzig Leadership Model provides some answers. *Leadership, Education, Personality: An Interdisciplinary Journal, 1* (1–2). https://doi.org/10.1365/s42681-020-00007-0

Mohammad I. Azim, & Saiful Azam (2016). Bernard Madoff's 'Ponzi Scheme': Fraudulent Behaviour and The Role of Auditors. *Accountancy Business and the Public Interest, 15* (1), 122–137.

Omar, M., Nawawi, A., & Salin, A. S. A. P. (2016). The causes, impact and prevention of employee fraud: A case study of an automotive company. *Journal of Financial Crime, 23* (4), 1012–1027. https://doi.org/10.1108/JFC-04-2015-0020

Orhan, M. A., & Collisson, B. (2022). Who said there's no such thing as a free lunch? Customers' dark triad traits predict abuse of food refund policies. *Personality and Individual Differences*, 190, 111527. https://doi.org/10.1016/j.paid.2022.111527

Paternoster, R. (2019). How much do we really know about criminal deterrence? In Brooks, T. (Ed.), *Deterrence* (pp. 57–115). https://doi.org/10.4324/9781315258089-2

Paulhus, D. L., & Williams, K. M. (2002). The Dark Triad of personality: Narcissism, Machiavellianism, and Psychopathy. *Journal of Research in Personality, 36* (6), 556–563. https://doi.org/10.1016/S0092-6566(02)00505-6

Quah, J. S. T. (2011). South Korea. In Quah, J. S. T., *Curbing Corruption in Asian Countries: An Impossible Dream?* (pp. 307–340). https://doi.org/10.1108/s0732-1317(2011)0000020016

Rauthmann, J. F. (2012). The Dark Triad and Interpersonal Perception: Similarities and Differences in the Social Consequences of Narcissism, Machiavellianism, and Psychopathy. *Social Psychological and Personality Science, 3* (4). https://doi.org/10.1177/1948550611427608

Reyna, V. F., & Farley, F. (2006). Risk and rationality in adolescent decision making: Implications for theory, practice, and public policy. *Psychological Science in the Public Interest, Supplement, 7* (1), 1–44. https://doi.org/10.1111/j.1529-1006.2006.00026.x

Schuchter, A., & Levi, M. (2016). The Fraud Triangle revisited. *Security Journal, 29* (2). https://doi.org/10.1057/sj.2013.1

Şenocak, E., & Özmen, F. (2022). The Analysis of Anecdotes of Nasreddin Hodja in The Context of the Concepts Crime and Punishment. *Milli Folklor, 134*, 106–118.

Shover, N., & Hochstetler, A. (2005). *Choosing white-collar crime*. Cambridge University Press. https://doi.org/10.1017/CBO9780511803482

Simpson, S. S., & Weisburd, D. (2009). *The Criminology of White-Collar Crime*. Springer New York. https://doi.org/10.1007/978-0-387-09502-8

Smith, S. F., & Lilienfeld, S. O. (2013). Psychopathy in the workplace: The knowns and unknowns. *Aggression and Violent Behavior, 18* (2), 204–218. https://doi.org/10.1016/j.avb.2012.11.007

South, A. J., Barkus, E., Walter, E. E., Mendonca, C., & Thomas, S. J. (2023). Dark Triad personality traits, second-to-forth digit ratio (2D:4D) and circulating testosterone and cortisol levels. *Biological Psychology, 179* (1). https://doi.org/10.1016/j.biopsycho.2023.108567

Stiff, C., & Reeves, M. (2024). Careful When You Click? How the Dark Triad of Personality Can Influence the Likelihood of Online Crime Victimization. *Journal of Psychology, 158* (3), 238–256. https://doi.org/10.1080/00223980.2023.2286451

Sokić, K. (2022). Effect of the dark tetrad on emotional intelligence. *Primenjena psihologija*, 15(1), 29–50. https://doi.org/10.19090/pp.v15i1.2366

Sugawara, E., & Nikaido, H. (2014). Properties of AdeABC and AdeIJK efflux systems of Acinetobacter baumannii compared with those of the AcrAB-TolC system of Escherichia coli. *Antimicrobial Agents and Chemotherapy, 58* (12), 7250–7257. https://doi.org/10.1128/AAC.03728-14

Ünvan, Y. A. (2020). Financial Crime: A Review of Literature. In Grima, S., Boztepe, E., & Baldacchino, P. J. (Eds.), *Contemporary Studies in Economic and Financial Analysis* (Vol. 102, pp. 265–272). https://doi.org/10.1108/S1569-375920200000102019

Villaescusa, N. (2022). The Fraud Triangle: Assessing Fraud Risk. In Kamwani, S. S. et al. (Eds.), *Handbook of Research on the Significance of Forensic Accounting Techniques in Corporate Governance* (pp. 85–101). Business Science Reference.

Vogt, D. C. (2023). The Natural Meaning of Crime and Punishment: Denying and Affirming Freedom. *Criminal Law and Philosophy, 17* (2). https://doi.org/10.1007/s11572-021-09624-2

Von Bergmann, J. (2016). Corporate crime, criminological theory and sociology of organizations. *Monatsschrift für Kriminologie und Strafrechtsreform, 99* (5), 3–22. https://doi.org/10.1515/mks-2016-990503

Vousinas, G. L. (2021). Understanding the Financial Fraud: An Extended Model. In A. Rafay, *Handbook of Research on Theory and Practice of Financial Crimes* (pp. 1–20). https://doi.org/10.4018/978-1-7998-5567-5.ch001

Wagener, G. L., Schulz, A., & Melzer, A. (2024). Games, hormones, and "dark" personalities: Dark tetrad and the effects of violent gaming on aggression, cortisol, and testosterone. *Physiology and Behavior, 274*. https://doi.org/10.1016/j.physbeh.2023.114421

Wolfe, D. T., & Hermanson, D. R. (2004). The Fraud Diamond: Considering the Four Elements of Fraud. *CPA Journal, 74* (12), 38–42.

Wu, W., Wang, H., Zheng, C., & Wu, Y. J. (2019). Effect of Narcissism, Psychopathy, and Machiavellianism on Entrepreneurial Intention – The Mediating of Entrepreneurial Self-Efficacy. *Frontiers in Psychology, 10* (F). https://doi.org/10.3389/fpsyg.2019.00360