

Fathoming fraud: unveiling theories, investigating pathways and combating fraud

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Abstract

Purpose – Although corporations exert considerable efforts to uphold ethical standards in their business operations, fraud instances persist as an enduring and formidable challenge within organisations, defying their utmost efforts. The presence of fraud poses a substantial and recurring threat to corporations, leading to significant financial losses on an annual basis. This emphasises the crucial need for a comprehensive understanding of the factors contributing to fraudulent activities and the intricate nature of fraud risk factors inherent in business operations. Therefore, this paper aims to enhance the efficacy of fraud detection and prevention measures through critical analysis and refinement of established fraud theories, drawing upon the existing literature on this subject matter.

Design/methodology/approach – This paper offers a comprehensive qualitative analysis of the existing literature, thoroughly reviewing prominent models that aim to elucidate the underlying motivations behind fraudulent behaviour. Moreover, drawing upon the existing theoretical foundation, this study conceptualises a model that enhances the understanding of the crucial factors contributing to fraudulent behaviour.

Findings – The study presents new theoretical insights concerning the role of personal integrity in fraudulent decision-making, presenting refined interventions that enhance comprehension of the underlying drivers of fraud occurrences and strategies for prevention. Furthermore, the study reveals a comprehensive three-part approach to improving organisational health through strengthening compliance mechanisms and cultivating an ethical-values-based culture.

Originality/value – The study introduces a novel conceptual framework, the personal ethic-based fraud motivation model, which offers a deeper understanding of the factors and conditions influencing individuals' propensity to engage in fraudulent activities. Furthermore, this study presents a three Cs strategy that effectively delineates the influential forces that drive individuals to surmount fraud risks.

Keywords Fraud, Fraud theories, PEFM model, 3Cs Strategy, Fraud detection, Fraud prevention

Paper type Conceptual paper

1. Introduction

The ethical responsibility of businesses is to maintain accountability towards all stakeholders while striving for success. However, fraud in a business poses a significant threat, resulting in detrimental consequences for the business and stakeholders. Fraud constitutes a severe issue in the corporate world, leading to substantial financial losses for organisations each year (Smith *et al.*, 2005; PwC, 2020; ACFE, 2022). This fraud issue can have extensive adverse impacts on individuals, businesses and society, resulting in financial

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instability. In addition to financial losses, fraud results in the depletion of financial resources for organisations and governments, the infliction of severe emotional and psychological distress on victims and the long-term erosion of trust and reputation. The Association of Certified Fraud Examiners (2022) estimates that the worldwide annual fraud loss is about US\$4.7tn based on the Gross World Product 2021. This is equivalent to a loss of around 5% of a company's annual revenue. There are numerous frauds, such as occupational, cyber, credit card and investment fraud. Fraudsters that commit fraud use misleading accounting practices such as revenue manipulation, income smoothing and spending capitalisation to deceive their victims. In other instances, fraudsters may resort to more traditional methods, such as phishing emails or stealing credit card information. Methods and tactics like these should be considered red flags or warning signs of possible fraud risks in the workplace (Elsayed, 2017). These fraud risks are vulnerable and can ultimately result in financial distress. Prior studies indicate that financial distress within organisations poses severe threats and exposes them to the possibility of fraud (Spathis, 2002; Brazel *et al.*, 2009). Therefore, it is imperative to comprehend and address such vulnerabilities within an organisation.

Prior research has considerably contributed to our understanding of the underlying factors that contribute to fraud and has played a critical role in the theoretical formulation of “why people commit fraud” (Cressey, 1953; Wolfe and Hermanson, 2004; Dorminey *et al.*, 2012; Vousinas, 2019; Saluja *et al.*, 2021). Fraud theories include frameworks or models that elucidate the motivations underlying the engagement of individuals and organisations in fraudulent activities. These theories provide valuable insight into the psychological, sociological and economic factors contributing to fraud and the specific conditions and circumstances creating fraudulent behaviour opportunities. Some common explanations for fraud theories include the “fraud triangle (Cressey, 1953)”, “fraud scale (Albrecht *et al.*, 1984)”, “fraud diamond (Wolfe and Hermanson, 2004)”, “fraud pentagon (Marks, 2012)”, “stimulus, capability, collusion, opportunity, rationalisation and ego (SCCORE) model (Vousinas, 2019)” and “fraud square (Saluja *et al.*, 2021)”. These theories play an essential role in aiding individuals and organisations in obtaining a thorough comprehension of the intricate nature of fraud, thereby facilitating the development of practical approaches for preventing and detecting fraudulent activities. Despite numerous attempts to explain the motivations underlying fraudulent behaviour, achieving a comprehensive view incorporating all aspects of such behaviour remains challenging. The reasons behind fraudulent activities often involve multifaceted elements and can be subject to influence by various social and individual factors, including financial pressure, opportunities and rationalisation. In addition, personal integrity is crucial as it influences individuals' cognitive processes associated with committing fraudulent acts (Bakri *et al.*, 2017). In this perspective, Saluja *et al.* (2021) emphasised that individuals with high levels of integrity are unlikely or less likely to engage in fraudulent activities due to their unwavering commitment to moral and ethical values. Conversely, individuals with low levels of integrity may be more susceptible to fraud, especially when under financial pressure or perceiving the ability to rationalise their actions. Consequently, entrancing a more practical approach to understanding fraud necessitates exploring multiple theories of fraudulent behaviour and formulating a comprehensive fraudster motivation model incorporating personal integrity as a vital component.

This study presents the formulation of the “personal ethic-based fraud motivation (PEFM)” model, which investigates the factors that drive individuals to engage in fraudulent behaviour by integrating personal ethics, specifically integrity. By incorporating this variable, the model provides a more comprehensive and nuanced understanding of the underlying motives behind fraudulent behaviour. The PEFM model posits that an

individual's personal ethics, particularly their level of integrity, can influence their decision to participate in fraudulent activities. Therefore, it is imperative to comprehend fraud risks and implement preventive measures to mitigate fraud (Dorminey *et al.*, 2012). For instance, organisations can minimise their vulnerability to fraud and safeguard themselves against financial losses and reputational damage by conducting thorough risk assessments. These assessments aim to identify the areas within the organisation most susceptible to fraudulent activities while evaluating the likelihood and potential impact of fraud in each area (Vona, 2008). As a result, this study aims to identify best practices at the organisational level and conceptualise them into a comprehensive framework that can assist anti-fraud programmes in effectively mitigating fraud risks. Specifically, the study addresses two key questions:

- Q1. Which prominent theories elucidate the factors contributing to fraudulent behaviour?
- Q2. How can these factors be mitigated at the organisational level?

Lastly, the study briefly discusses the implications of these findings for combating fraud.

2. Literature background

2.1 History of fraud/white-collar crime

Sutherland (1940) marked a significant milestone in criminology with his differentiation between “street crimes” and “white-collar crimes”, which he defined as acts that violate trust. White-collar crimes represent a distinct category of criminal activity characterised by deceitful actions rather than physical violence, often perpetrated covertly by individuals in positions of high social and occupational standing (Sutherland, 1940). The criminological significance of distinguishing between these two forms of crime lies in the ability to investigate distinct offenses with unique motivations, victims and penalties. White-collar crimes are frequently referred to as fraud owing to their frequent involvement in fraudulent activities, such as the falsification of documents, the misrepresentation of financial information or the embezzlement of funds, all undertaken by individuals in positions of trust for personal financial gain. However, the concept of fraud remains elusive, lacking a definitive and universally agreed-upon definition.

2.2 Fraud definition and its relevance in accounting and auditing literature

Multiple definitions of fraud exist in the literature. For instance, Edelhertz (1970) defines fraud as “an illegal act or series of illegal acts committed by nonphysical means and by concealment or guile to obtain money or property, to avoid the payment or loss of money or property, or to obtain business or personal advantage”. Research on fraud spans various academic disciplines, including law, criminology, psychology, accounting, management, ethics and information systems. There has been an increasing focus on accounting studies about fraud in recent years. Conceptual frameworks for preventing and detecting fraudulent behaviour or misconduct have received substantial attention in fraud research. Among these frameworks, the “fraud triangle” is the most widely recognised approach for understanding the motives behind the fraud. It represents the predominant and well-known fraud theory extensively applied in auditing and fraud prevention practices. Consequently, it has been incorporated into auditing standards in the USA (SAS No. 99) and international auditing standards (ISA 240) and has gained acceptance in India (AS 240).

2.3 Evaluation of fraud theory in accounting and auditing literature

Fraud theory (see [Table 1](#)) elucidates the role of forensic accounting practices in detecting financial fraud originating from a company's financial accounting process. The theory posits that individuals and/or organisations possess the capacity to assess the potential benefits linked to involvement in fraudulent activities. When the perceived benefits of committing fraud surpass the associated costs, it may prompt a decision to engage in fraudulent behaviour.

2.4 Theories mostly adapted in fraud studies

2.4.1 Fraud triangle. The fraud triangle (see [Figure 1](#)), developed by [Cressey \(1953\)](#), is extensively used by fraud investigators, auditors and forensic accountants in contemporary times to identify and prevent fraud. This model explains the three fundamental factors prevalent when an individual engages in fraud. The fraud triangle's three elements are pressure, opportunity and rationalisation.

2.4.2 Fraud scale. The fraud scale (see [Figure 2](#)), developed by [Albrecht et al. \(1984\)](#), is a valuable implement for assessing the risk of fraud within organisations. Since its inception, it has garnered extensive adoption among organisations and auditors, providing them with a means to evaluate their fraud risk comprehensively. By leveraging the fraud scale, organisations can proficiently identify the precise level of risk and implement appropriate controls and procedures to prevent fraud effectively. Additionally, this scale empowers organisations to continuously monitor fluctuations in their fraud risk over time, facilitating the necessary adjustments to their fraud prevention strategies when required.

2.4.3 Fraud diamond. The fraud diamond (see [Figure 3](#)), a model developed by [Wolfe and Hermanson \(2004\)](#), aims to understand the factors influencing fraudulent behaviour expansively. This model extends upon [Cressey's \(1953\)](#) fraud triangle model by introducing a fourth element: capability.

2.4.4 Fraud pentagon. [Marks \(2012\)](#), a partner-in-charge at the accounting and consulting firm Crowe Horwath, created the "fraud pentagon" model (see [Figure 4](#)). This model identifies five essential elements frequently observed in cases of occupational fraud: "pressure, opportunity, rationalisation, competence and arrogance". By understanding these five elements and proactively resolving any vulnerabilities, organisations can effectively mitigate occupational fraud risk and reduce its negative impact.

2.4.5 "Stimulus, capability, collusion, opportunity, rationalisation and ego" model. The SCCORE model (see [Figure 5](#)), designed by [Vousinas \(2019\)](#), provides a conceptual framework to improve the knowledge of fraud and its intricate components. Each component of this model represents an important facet of fraud: "Stimulus, Capability, Collusion, Opportunity, Rationalisation and Ego".

3. Theoretical framework

According to [Michael and Adler \(1971\)](#), prior research on fraud risk factors has primarily concentrated on fraud detection and prevention strategies. As a result, they proposed an expansion of fraud research to explore additional spheres of influence. The fraud theory suggests that individuals and organisations assess the anticipated benefits of participating in fraudulent behaviour. If individuals or organisations perceive that the benefits outweigh the associated costs, they may devise a strategy to engage in fraud. Thus, the subsequent phase of the model elucidates the development of this fraudulent strategy. [Figure 6](#) illustrates the model's pathways, initiating with an individual characterisation of the fraudster, encompassing four key risk factors: individual and business pressure, opportunity, capability and rationalisation. The concept of personal ethics, including

Sl. No.	Fraud model	Year	Source	Summary
1	Fraud triangle	1950	Cressey (1953)	The fraud triangle depicts the three elements of fraudulent activities: “pressure, opportunity and rationalisation”
2	Fraud scale	1984	Albrecht <i>et al.</i> (1984)	The fraud scale has extended the fraud triangle theory by replacing “rationalisation” with “personal integrity”
3	Fraud cube	1990	Doost (1990)	The fraud cube expands the fraud triangle theory by introducing three dimensions of crime: “relationship, expertise and motivation”
4	3-C	2002	Rezaee (2002)	The 3Cs model illustrates the three factors – “conditions, choice and corporate structure”. that assist in understanding financial statement fraud
5	Fraud diamond	2004	Wolfe and Hermanson (2004)	The concept of the fraud diamond was developed by adding “capability” as a fourth element to the fraud triangle
6	Fishbein and Ajzen’s theory of planned behaviour (TPB)	2005	Carpenter and Reimers (2005)	This study aims to explain any planned, intentioned action of fraudulent acts using four dimensions: “attitude toward fraud, subjective norms, perceived behavioural control and moral obligation”
7	Organisational fraud triangle	2007	Free <i>et al.</i> (2007)	At the organisational level, the three points of the organisational fraud triangle are “leadership, organisational culture and management control systems”
8	ABCs of white-collar crime	2009	Ramamoorti <i>et al.</i> (2009)	ABC analysis specifies “A” as the “Bad Apple” (individual characteristic to commit fraud), “B” as the “Bad Bushel” (group of collusive attitudes towards the fraud) and “C” as the “Bad Crop” (environment of the organisation of doing some wrongful activities)
9	Fraud pentagon (II)	2010	Goldmann (2010)	“Personal greed and employee disenfranchisement” are included as elements in the fraud pentagon theory, which expands upon the fraud triangle theory
10	The crime triangle	2010	Sampson <i>et al.</i> (2010)	The crime triangle consists of three triangles: “the inner triangle symbolizes the offender, the target and the place; the middle triangle represents the handler, the target and the manager; and the outer triangle consists of the super-controller who regulates the supervisors in the middle triangle”
11	Fraud pentagon	2012	Marks (2012)	The five elements of the fraud pentagon include the three core elements of the fraud triangle theory: “pressure, opportunity, rationalisation, competence and arrogance”

Table 1.
Evaluation of fraud theory

(continued)

Sl. No.	Fraud model	Year	Source	Summary
12	MICE	2012	Dorminey et al. (2012)	“Money, ideology, coercion and ego” are elements of MICE. MICE modifies and updates the pressure element, providing additional factors beyond enterprises’ non-shareable financial pressures
13	Triangle of fraud action	2012	Albrecht et al. (2006)	The three components of the triangle of fraud action are “the act (crime), concealment and conversion”
14	META model	2012	Dorminey et al. (2012)	The META model presents a framework for addressing the intended influence of individual anti-fraud efforts and a model for building a cohesive and coordinated anti-fraud environment. It includes “pressure, opportunity, rationalisation, anti-fraud measures, concealment, conversion and the act (crime)”
15	The new fraud triangle model	2012	Kassem and Higson (2012)	The new fraud triangle model is an extension of the fraud triangle that integrates all models into one, including “motivation (MICE model), opportunity (fraud triangle), personal integrity (fraud scale) and the fraudster’s capabilities (fraud diamond)”
16	Fraud square	2012	Cieslewicz, (2012)	This research expands the fraud model by including societal influences on fraud, such as philosophical and religious traditions, culture, social norms and societal conditions, such as “the rule of law, political climate and socioeconomic factors”
17	The Auditor’s model with respect to fraud	2013	Trompeter et al. (2013)	The model integrates auditors’ use of the fraud triangle, their assessment of the existence and effectiveness of the client’s anti-fraud measures and their consideration of possible fraud schemes and concealment techniques when assessing the client’s overall fraud risk
18	Fraud scale (II)	2013	Mackevičius and Giriūnas (2013)	The study presents a theoretical analysis of fraud scales that transform the fraud triangle into a square based on “motives, conditions, possibilities and performance”
19	Symbiosis of fraud triangle and crime triangle	2015	Mui and Mailley (2015)	The crime triangle enhances the perpetrator-centric perspective of the fraud triangle by evaluating the environment in which fraud occurs and the essential parties who play their role in preventing or failing to do so, thereby enabling fraud to occur
20	A disposition-based fraud model	2016	Raval (2018)	The disposition-based fraud model discusses the role of human motivations, intentions and actions in committing acts of financial fraud or resisting it

*(continued)***Table 1.**

Sl. No.	Fraud model	Year	Source	Summary
21	SCORE model	2019	Vousinas (2019)	The ego is introduced as a new variable in the model analysis of fraud elements, resulting in the SCORE model: “stimulus, capability, opportunities, rationalisation and ego”
22	SCCORE model	2019	Vousinas (2019)	The SCCORE model added collusion to the existing SCORE model, resulting in “stimulus, capability, collusion, opportunity, rationalisation and ego”
23	Fraud square (II)	2021	Saluja et al. (2021)	Integrity is added to the fraud triangle theory to form the fraud square, encompassing the three aspects of fraud: “pressure, opportunity and rationalisation”

Table 1. Source: Table created by Author



Source: Figure Courtesy of Cressey (1953)

Figure 1.
Fraud triangle by
Cressey (1953)

integrity, significantly impacts the decision-making process concerning engaging in fraudulent behaviour. The subsequent section delves into using anti-fraud measures to prevent or deter fraudulent activities within the organisational context. Finally, the last section provides a detailed explanation of the decision-making process underlying the execution of fraudulent actions by the fraudster within the organisational setting. The subsequent section will present a precise explanation of the model.

3.1 First step: individual characterisation

Any crime ultimately traces back to the actions or decisions of an individual. In the context of fraud, a fraudster is an individual who has either already committed fraud or is planning to engage in fraudulent activities. Fraudsters use deceiving tactics, intentionally misleading



Source: Figure Courtesy of Albrecht *et al.* (1984)

Figure 2.
Fraud scale by
Albrecht *et al.* (1984)



Source: Figure Courtesy of Wolfe and Hermanson (2004)

Figure 3.
Fraud diamond by
Wolfe and
Hermanson (2004)

individuals or organisations for personal gain or benefits. These tactics may comprise misrepresentation, false claims and other forms of deceit intended to acquire money, assets or other valuable resources from their victims. During the initial phase, the *Individual Characteristics* encompass fraudsters' behavioural and ethical decisions. These decisions demonstrate the psychological (involve cognitive) processes contributing to financial pressure, opportunity, capability and rationalisation. This study shows fraudsters' cognitive processes by relying on various components of fraud theories and models, including the fraud scale, comparing predator and accidental fraudsters, and the fraud diamond. By using these components, researchers can develop a more comprehensive understanding beyond the traditional fraud triangle.

3.2 First factor: pressure

The fraud triangle is the most extensively recognised theory for understanding “why people commit fraud”. One side of the fraud triangle, known as pressure, represents the perception



Source: Figure Courtesy of Marks (2012)

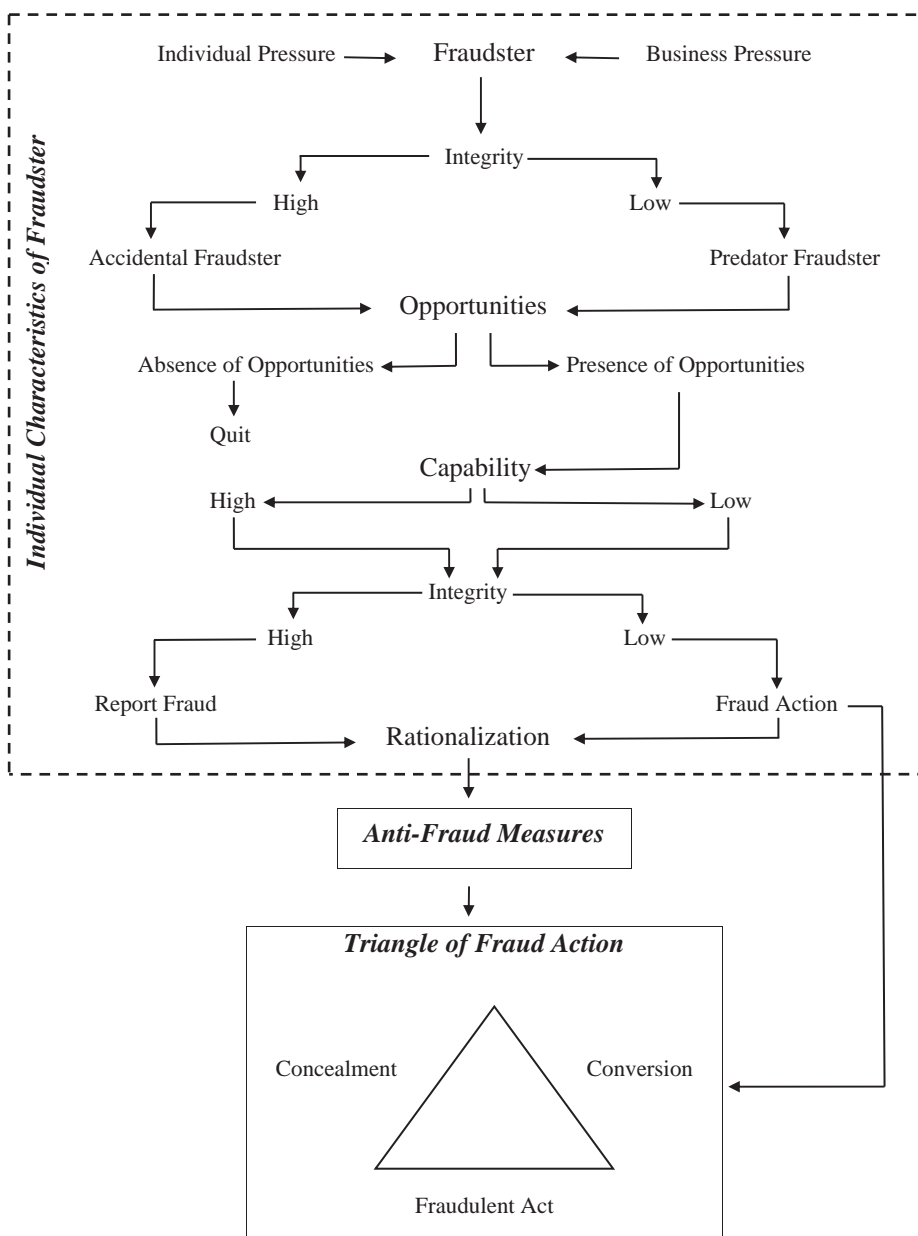
Figure 4.
Fraud pentagon by
Marks (2012)



Source: Figure Courtesy of Vousinas (2019)

Figure 5.
Fraud hexagon
(SCORE Model) by
Vousinas (2019)

of an individual facing a non-shareable financial need or problem that motivates them to commit fraud (Cressey, 1953). According to Cressey (1953), trusted individuals can become trust violators once they perceive a problem with trust. Furthermore, individuals under financial pressure are more likely to resort to fraudulent activities. *Individual Characteristics*, the model's first step of pathways, identifies individual and business pressure as potential motivators for fraudulent behaviour (Vona, 2008). Individual pressure may produce a sense of urgency or desperation, which can encourage fraudsters to behave in unethical or illegal



Source: Authors' contribution

Figure 6. Pathways of the personal ethic-based fraud motivation model

activities (Hooper and Pornelli, 2010). Numerous sources of individual pressure have been identified, including personal gain, financial difficulties, gambling or addiction, job security and high expectations (Vona, 2008; Bonny *et al.*, 2015). Identifying these pressures and seeking assistance is crucial for individuals vulnerable to fraud. Nonetheless, business pressure can motivate individuals to commit fraud due to several factors in the business world, including investor pressure, unrealistic targets, the need for financing, intense competition, a culture of greed, rewards, job security concerns and a lack of oversight and controls (Vona, 2008; Cohen *et al.*, 2010). Thus, it is crucial for businesses to be aware of these factors and take preventative and detective measure to combat fraud.

3.3 Integrity quotient-1: assessing high and low integrity levels in ethical decision-making

When individuals are confronted with the option to commit fraud, we assume that their moral and ethical perspectives influence their decision-making. In essence, individuals tend to evaluate fraudulent behaviour based on their own ethical beliefs. According to our model's pathways, individuals who prioritise integrity highly are less likely to participate in fraudulent activities. In contrast, those who assign a lower value to integrity may be more inclined to engage in such behaviour across various dimensions of fraud. This disparity can be attributed to individuals with strong personal ethics being more likely to perceive fraudulent behaviour as morally wrong, consequently decreasing their likelihood of involvement. Conversely, individuals with weaker personal ethics may be more open to engaging in fraudulent behaviour if they perceive the potential benefits to outweigh the ethical costs. Hence, this inclination could be influenced by factors such as financial pressures or a lack of perceived consequences for their actions. Furthermore, individuals use cognitive processes to make decisions based on their integrity, contrasting with the motivation for engaging in fraudulent behaviour. These cognitive processes involve considering personal ethics and making decisions regarding fraudulent behaviour. Individuals with high levels of integrity are less likely to participate in fraudulent behaviour intentionally and may colloquially label them as "accidental fraudsters". However, they may inadvertently become involved in fraudulent activities when they find themselves in circumstances that exert pressure and offer opportunities for fraud. In contrast, individuals with lower levels of integrity may actively seek opportunities to commit fraud for personal gain, even if it means engaging in illegal or unethical actions. Such individuals can be classified as "predator fraudsters", as their intentional actions often involve manipulating and deceiving others for financial or personal benefits.

3.4 Second factor: opportunity

Opportunities for fraud arise from specific conditions that enable individuals to carry out fraudulent acts. These conditions encompass weak internal controls, a lack of oversight, inadequate work monitoring and a scarcity of audits or disciplinary checks (Montgomery *et al.*, 2002). Essentially, when the opportunity for fraud presents itself, individuals with the motivation to engage in fraudulent behaviour may exploit weak internal controls, thereby facilitating the manipulation of financial information or the commission of fraudulent acts undetected. Additionally, the lack of effective management or supervisory oversight can create an environment conducive to fraud. Employees without sufficient training in ethical behaviour are more susceptible to involvement in fraudulent activities. Furthermore, when employees have access to company assets such as cash or inventory, their inclination towards fraud, including theft or embezzlement, tends to increase. This key exemplification is a well-established connection between poor corporate governance and the perceived opportunity for corporate fraud (Beasley, 1996; Beasley *et al.*, 2000). Moreover,

Darby and Karni (1973) emphasised that incomplete information within an organisation facilitates fraudulent actions. In the next step of *Individual Characteristics*, individuals may become enticed to engage in opportunistic behaviour by actively seeking and exploiting opportunities to commit fraudulent acts as they arise. Individuals are prone to commit fraud when presented with opportunities, using their organisational position to manipulate financial records, fabricate information or embezzle funds for personal gain. In contrast, in the absence of opportunities to commit fraud, individuals may experience a sense of dissatisfaction and might even search for alternative avenues that afford them the chance to partake in fraudulent activities.

3.5 Third factor: capability

The term “capability” refers to the combination of innate characteristics and learned skills that enable individuals to engage in fraudulent behaviour. In essence, capability refers to characteristics and skills that substantially influence the likelihood of perpetrating fraud. Furthermore, fraudulent behaviour frequently necessitates specific cognitive and interpersonal abilities. For instance, individuals with high intelligence, creativity and problem-solving abilities are more capable of devising complex fraudulent schemes than those with lower cognitive abilities. Numerous frauds, including financially devastating instances of fraudulent financial statements, could have been prevented if individuals lacking the necessary capabilities to execute such intricate schemes were absent. According to this view, previous studies argue that opportunity and pressure alone may not be sufficient to motivate individuals to engage in fraudulent behaviour; they must also possess the necessary skills to engage in such activities (Wolfe and Hermanson, 2004; Marks, 2012). Also, from this perspective, capability highlights the significance of personal traits and abilities in understanding fraud. By identifying the importance of capability, organisations can better identify and mitigate the risk of fraud by screening employees for relevant traits and behaviours, instituting effective internal controls and providing training on ethical decision-making. This section of the framework specifies that individuals intending to commit fraud must be capable of carrying out their plans effectively. This capability often includes specific knowledge, skills and abilities fraudsters may acquire through education, training or work experience. However, it is essential to recognise that not all individuals with the capability to commit fraud or engage in fraudulent activities will do so. Those who consistently exhibit high levels of integrity are less likely to engage in fraudulent behaviour. Individuals’ distinct capabilities and cognitive processes reveal the existence of discernible disparities, thereby facilitating the formulation of fraudulent decisions. These fraudulent decisions are influenced by varying levels of capability among individuals, which can be high or low.

3.6 Integrity quotient-2: assessing high and low integrity levels in ethical decision-making

Multiple scenarios can arise when examining the outcomes resulting from individuals with distinct capabilities and levels of integrity making fraudulent choices. Firstly, individuals with high capabilities and integrity exhibit the knowledge and skills necessary to carry out fraudulent activities effectively. However, their strong moral compass deters them from engaging in such behaviours. These individuals consistently make ethical decisions and refrain from participating in fraudulent activities. Secondly, high-capability individuals with low integrity possess the capabilities to plan and execute fraud successfully. Their lack of integrity, however, leads them to engage in fraudulent behaviour. They may rationalise their actions or prioritise personal gain over ethical considerations, resulting in fraudulent decision-making. Thirdly, individuals with low capabilities but high integrity lack the

necessary skills and knowledge to execute fraud. Nevertheless, they maintain a strong sense of integrity and understand the significance of ethical conduct. These individuals actively seek assistance or guidance from others to avoid engaging in fraudulent activities. Lastly, individuals with limited capabilities and low integrity are more prone to fraudulent decisions. Their lack of skills may hinder their effectiveness in executing fraud, but their unethical nature drives them to engage in fraudulent activities whenever an opportunity arises. Hence, at this specific juncture within the ethical decision-making process, a noteworthy observation indicates that individuals possessing a strong sense of integrity demonstrate an exceedingly minimal propensity to engage in deliberate fraudulent activities. Moreover, if they encounter an opportunity where they possess the capability to commit fraud, they are more inclined to report the issue to higher authorities promptly and seek guidance on how to address it. Conversely, individuals with low integrity are more susceptible to engaging in fraudulent activities when they discover an opportunity to exploit their capabilities.

3.7 Fourth factor: rationalisation

Rationalisation is the insidious mental process used by fraudsters to justify or neutralise their fraudulent actions, which can manifest in various forms. These forms involve denying responsibility for their actions, shifting blame onto the victim or others for the caused fraud or even comparing themselves favourably to those who have committed more severe crimes (Zuberi and Mzenzi, 2019). In addition, offenders' mental processes that excuse their wrongdoing and unethical actions are referred to as rationalisations or reasoning. Because of their intricate nature, these mental processes are notoriously difficult to detect, measure or operationalise in empirical investigations. It is only sometimes apparent as rationalisations are subjective and may entail different conscious and unconscious procedures depending on an individual and the circumstances (Anand *et al.*, 2005). Consequently, it is critical to continue investigations and understand the nuanced phenomenon of rationalisation to meet these problems. In this way, the damage that fraud and other natures of white-collar crime due to individuals and societies may be mitigated. As the last phase of *Individual Characteristics*, rationalisation may help individuals justify their fraudulent conduct and avoid feeling guilty or remorse about fraudulent activities. Rationalisation is a self-deceiving tactic that can have severe implications and perpetuate the cycle of fraud and unethical behaviour.

3.8 Second step: anti-fraud measures (prevent and deter-controls)

In the second section of the model's paths, an organisation's *anti-fraud measures*, which include policies, procedures and practices, are implemented to prevent, detect and respond to fraudulent activities (Ciancio, 2011). The risk of fraud may be mitigated by implementing effective fraud detection and response mechanisms, establishing robust internal controls and promoting a culture of integrity and openness (Westhausen, 2017; Albrecht *et al.*, 2018). The practicality and applicability of an organisation's anti-fraud measures considering growing fraud trends and tactics need regular review and modification. Several essential measures can be implemented to combat fraud within an organisation. Firstly, it is necessary to explicitly create clear policies and procedures for fraud prevention, detection and response. In addition, it is essential to execute robust internal controls to detect and prevent fraud. A successful anti-fraud strategy must also include a comprehensive risk assessment. Furthermore, training employees with the knowledge and skills required to detect and prevent fraud is decisive. For early detection and response, it is essential to implement mechanisms that make it simpler for employees to report suspected fraudulent

activity. It is necessary to develop transparent procedures for investigating suspicions of fraud and responding appropriately to confirmed incidents. Lastly, organisations should perpetually monitor transactions and activities to detect symptoms of fraudulent behaviour.

3.9 Third step: triangle of fraud action (detect procedures)

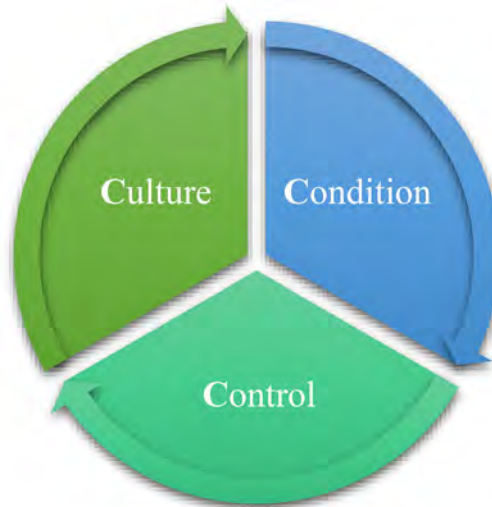
The last section of this study accumulates a concept related to the “fraud triangle”, called the “triangle of fraud action”, which incorporates the element of fraud known as “fraudulent action” (Albrecht *et al.*, 2006). The “fraud triangle” depicts the conditions that may contribute to a fraudulent activity, whereas the “triangle of fraud action” depicts the specific actions needed to commit fraud. The “triangle of fraud action” comprises three elements: “the act, concealment and conversion”. The act refers to actual fraudulent actions, such as skimming cash or altering financial records. Concealment entails hiding the fraudulent activity by means such as forging documents or destroying evidence. Conversion refers to transforming fraudulently obtained assets into something that appears legitimate, such as money laundering or purchasing property. These three components constitute the anatomy of a fraud action. Unlike the fraud triangle, where the trail of evidence may be weak or non-existent, the “triangle of fraud action” offers the advantage of being an evidence-based approach. Its elements can be directly observed and documented in fraud investigations, contributing to its usefulness. Consequently, investigators often find the “triangle of fraud action” beneficial in cases where intent evidence is required.

4. Three Cs strategy to mitigate fraud risk

Previous studies have emphasised on the presence of the elements of the fraud triangle: motivation or pressure (non-sharable financial need of an individual), opportunity and rationalisation behind fraud incidents (Cressey, 1953; Free, 2015). In this context, corrective action is necessary for the organisational setting, focussing on developing a strategy to eliminate fraud and its impact on the quality of financial reporting. Consequently, the three-pronged strategy (Cs) explains how to mitigate fraud by addressing the motivations, opportunities and rationalisations behind it. The three Cs strategy describes the forces that encourage individuals to overcome fraud risks. These forces represent the theoretical constructs that prompt organisations to mitigate the risk of fraud. The three Cs framework (Figure 7) is a three-part approach that concentrates on improving conditions (health or circumstances) and outcomes by enhancing control (compliance) and embracing culture (ethical values) at the organisational level.

4.1 Condition-alleviating fraud risk

The first construct, condition, relates to the health issues or problems an organisation must address for its well-being. The term “condition” refers to circumstances or factors that may increase the likelihood of an employee engaging in fraudulent actions within an organisation (Rezaee, 2002). It is crucial, therefore, to identify the conditions that can heighten an organisation’s susceptibility to fraud and take appropriate actions to mitigate such conditions. Understanding the condition helps gather the necessary information to identify fraud risks and apply scepticism in assessing the risk’s attributes. These attributes serve as the root causes of fraud risks (commonly known as pressure, opportunity, rationalisation, capability, arrogance and collusion), the type of fraud risk (financial statement fraud or misappropriation of assets), the significance of the fraud risk (whether it will lead to fraud) and the likelihood of the fraud risk resulting in fraud. In this regard, an effective fraud risk assessment enables businesses to identify and measure the fraud risk within their operations by understanding control weaknesses and prioritising



Source: Authors' contribution

Figure 7.
The three Cs strategy
for fraud mitigation

areas susceptible to fraud (Knapp and Knapp, 2001; Carpenter and Reimers, 2005). Thus, understanding the organisational condition through a fraud risk assessment helps businesses identify weaknesses that may make them more vulnerable to fraud and take preventive measures.

4.2 Culture-improving ethical values

The second concept, culture, refers to the set of shared beliefs, values, attitudes and behaviours that guide the behaviour of individuals and groups within an organisation (Van den Berg and Wilderom, 2004). This concept emphasises on recognising and implementing ethical values and morals when addressing organisational conditions or health problems. By considering the cultural environment, interventions can be made more successful and culturally appropriate. Previous studies have highlighted the significant role of organisational culture in shaping employee attitudes towards fraud (Holton, 2009; Davis and Pesch, 2013). Elements of an organisation's culture include the shared ethical values among its members (Pratt *et al.*, 1993). Moreover, cultural variations in leadership style are noteworthy, as different cultural beliefs and strengths shape the types of leaders (Free *et al.*, 2007), and individualistic cultural orientations influence organisational effectiveness (Hofstede and Hofstede, 2001). Leadership influences employee behaviour within an organisation by promoting respect-driven ethical values and beliefs (Zahari *et al.*, 2020), which can help mitigate fraudulent behaviour. Furthermore, a strong organisational culture that emphasises on ethical behaviour among employees can aid in fraud prevention by establishing a solid ethical tone, fostering open communication, providing comprehensive fraud awareness training, implementing a psychological employee assistance programme and establishing robust organisational structures and orientations. Top management commits to ethical behaviour, and employees throughout the organisation support this commitment through their actions and words, contributing to a strong ethical culture.

4.3 Control-ensuring compliance

The third concept, control, involves using formal organisational processes and structures to influence and direct individuals' actions, thereby increasing adherence to health benchmarks and achieving the organisation's desired goals (Flamholtz *et al.*, 1985). Arregle *et al.* (2023) define control "as any process applied by the organisation to direct attention, motivate, and encourage organisational members to act in a desired way to assure the execution of actions towards achieving organisational goals and plans". In other words, control involves implementing policy and procedure changes in management control systems and incentives to promote healthy behaviour. The objective of the control construct is to enhance adherence to health benchmarks and ensure the effectiveness of actions or mechanisms. In an organisation, control is established through structural tools such as rules, policies and a hierarchy of authority. These tools provide a framework for guiding behaviour, decision-making and communication, ultimately facilitating the achievement of organisational objectives. Generally, effective control entails compliance with rules and regulations related to GAAPs, accounting standards, regulatory frameworks and codes of conduct. It also involves implementing an anonymous reporting programme, monitoring internal controls, hiring certified fraud examiners or forensic auditors, having a strong and independent audit committee with finance experts and implementing robust management control systems and fraud risk management within the organisation (Free *et al.*, 2007; COSO, 2019; Zahari *et al.*, 2020). This strategy emphasises on the significance of considering multiple factors when addressing health issues, such as the condition, cultural values and compliance-enhancing strategies. By incorporating these three concepts, organisations can design more effective and culturally sensitive measures, thus improving organisational conditions.

5. Summary and conclusion

For companies, fraud may cause significant damage and financial losses, which can have a detrimental impact on their financial well-being and reputation. These losses can have far-reaching negative consequences, ensuing in a loss of trust from investors, customers and other stakeholders. In addition, fraudsters frequently use sophisticated techniques to deceive organisations and individuals, making detecting and preventing fraud difficult. To address this issue, researchers have explored numerous theories and models to understand the nature of fraud and develop effective detection and prevention strategies. However, these existing theories and models have certain limitations and thus can be further developed to enhance their efficacy in combatting fraud. Therefore, it becomes crucial for organisations to grasp the concept of fraud risk, enabling them to recognise potentially fraudulent activities within their operations and take appropriate measures to manage and mitigate such risks. By doing so, organisations can safeguard themselves against the detrimental effects of fraud while fostering a culture of ethics and integrity. In line with this objective, this study introduces the PEFM model to gain deeper insights into the factors influencing individuals' likelihood to engage in fraudulent behaviour under different circumstances. In addition, this study proposes a three Cs strategy to mitigate fraud, which elucidates the driving forces that compel individuals to overcome fraud risks.

The PEFM model posits that individuals' integrity is crucial in their decision to engage in fraudulent behaviour. The theory suggests that aligning an individual's integrity or ethics with the factors contributing to fraud risk expands the current understanding of fraudulent behaviour. This study introduces a novel theoretical discussion on fraud motivation models based on personal integrity, offering valuable insights for researchers and practitioners seeking to comprehend the root causes of fraud and develop effective prevention strategies.

The study elucidates the fraud risk factors through the cognitive process of high or low integrity, shedding light on the mechanisms that drive fraudulent behaviour. Additionally, the study presents frameworks that analyse and explain fraudulent behaviour, enriching the literature on the subject. Furthermore, the three Cs strategy significantly contributes to the field by proposing a three-part approach that emphasises on enhancing compliance, embracing ethical values and ultimately improving health outcomes at the organisational level. This study has significant implications for ethics training and education, enabling organisations to develop targeted programmes that effectively address the factors influencing fraudulent behaviour. Organisations can cultivate a workforce with a heightened ethical inclination and increased resilience against fraudulent activities by prioritising personal ethics. The implications of this study also extend to the domains of forensic accounting and audit research, expanding the prevailing knowledge base on fraud motivation. It can assist forensic accountants and auditors in detecting and preventing fraud more effectively by providing new insights into the underlying causes of fraudulent behaviour.

It is crucial to recognise and address the limitations of fraud models to ensure their appropriate usage and accurate interpretation of findings. Every fraud model has inherent limitations, which means it may not encompass all the intricacies of fraud or offer a comprehensive solution for all types of fraudulent activities. For instance, a fraud model designed to detect financial fraud may not effectively identify other forms of fraud, such as cyber fraud. Moreover, fraudsters continuously devise new techniques to evade detection, posing a challenge for fraud models to keep pace with the evolving tactics used in fraud. Therefore, this limitation underscores the necessity for ongoing improvement and development of fraud models to adapt to the dynamic nature of fraud. Furthermore, standardising the implementation of the 3Cs strategies across diverse businesses to assess performance can pose challenges because they may require tailoring to specific organisational circumstances or factors.

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