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EVOLUTION OF FRAUD-RELATED THEORIES: A THEORETICAL REVIEW

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ABSTRACT

Background and Purpose: Association of Certified Fraud Examiners (ACFE) in their report projected that over 4.5 trillion dollars are globally lost due to fraud, with individual organizations losing about 5 per cent of their revenues to fraud annually. Thus, organizations need to understand what contributes to fraud from an individual to organizational perspective, so that strategies to mitigate fraud are formulated. The objective of this paper is to identify various fraud-related theories used in research and their evolution. Subsequently, this study tries to identify the most commonly used fraud theory, approach and unit of analysis.

Methodology: This paper employed a systematic review process and the name of the theory was used as the keyword in the Scopus database to identify papers that discussed the theories. A total of 342 papers were initially identified and analysed after which repeated papers were eliminated. Following this, 39 most recent papers were further analysed to identify the most common theories, research approaches and units of analysis, used in fraud research.

Findings: The analysis found that fraud theories comprised of theories discussing individual factors and organizational factors, which contribute to fraud. The findings further reveal that the Fraud Triangle

Theory is the most frequently applied theory in fraud research, where quantitative approach is most adopted with individuals as a unit of analysis.

Contributions: This paper contributes to the growing interest in the study related to fraud by providing a comprehensive analysis of theories related to fraud by bringing together most commonly used theories in fraud research.

Keywords: Fraud theories, theoretical review, social control theory, theory of reasoned action, theory of planned behaviour.

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1.0 INTRODUCTION

Association for Certified Fraud Examiners (ACFE) has defined occupational fraud as "The use of one's occupation for personal enrichment through the deliberate misuse or misapplication of the employing organization's resources or assets" (ACFE, 2020, p. 86). Occupational fraud can be classified into three major types: financial statement fraud, asset misappropriation and corruption. Financial statement fraud is the intentional attempt by a corporation to deceive or mislead users of published financial statements, particularly investors and creditors, by preparing and disseminating materially misstated financial statements (Rezaee, 2005). Asset misappropriation is the theft of a company's assets for personal use at the expense of the company or the misuse of a company's resources (Kassem, 2014). Corruption is a misuse of authority for personal gain and includes offences like extortion, bribery, and conflicts of interest (Ashforth & Anand, 2003).

Fraud and its various forms have been identified as significant contributors to the emergence of severe financial crises. Recurring financial crimes in both the private and public sectors serve as a reminder that fraud and its negative consequences cripple economic entities all over the world (Cheliatsidou et al., 2023). Historic fraud cases such as Parmalat, WorldCom, Enron, Tyco, Barings, Volkswagen and Lehman Brothers (Cole et al., 2021) have led to great financial losses and also have tarnished the image of the accounting profession (Free, 2015).

Fraud study has frequently been divided across multiple disciplines, with limited inter-disciplinary integration, such as law, criminology, psychology, ethics, accountancy, and management (Free & Murphy, 2015). Thus, understanding the multifaceted nature of fraud is critical for preventing and detecting it. Given the enormous costs of fraud, ascertaining models that reliably anticipate fraud is imperative so that organizations can take preemptive actions to prevent fraud, to ensure efficient operation and sustainability of the organization.

This study is distinguished from other theoretical papers on fraud literature since the paper follows the evolution of fraud theories and identifies fraud theories from a broad spectrum of disciplines, further categorizing them into individual and organizational-level fraud theories. Further, an analysis was conducted on how the theories were applied in fraud research.

Based on the research problems above, the following research questions are addressed in this study.

RQ1: What fraud theories are used to research individual and organizational level fraud?
RQ2: What is the most commonly used fraud theory in fraud research?
RQ3: Who are the most prominent authors in the fraud theories identified?
RQ4: What research approach is most commonly applied in fraud research?
RQ5: What unit of analysis is most commonly used in fraud research?

The rest of the paper is structured as follows: section 2 contains a literature review, which showcases the theories used for fraud research, section 3 discusses the research design which explains the methodology adopted to analyse the literature, section 4 provides an analysis and discussions of the findings with section 5 concluding the study.

2.0 LITERATURE REVIEW

Fraud-related theories are derived from a spectrum of multiple disciplines including economics, psychology, sociology and criminology. Over the years several theories were used to discuss fraud from individual and organizational perspectives. This section discusses theories which were used to explain the fraudulent actions of individuals and organizations.

2.1 The Fraud Triangle Theory

The "fraud triangle" (see Figure 1) is currently the dominating framework created in this field, and it is integrated into professional auditing standards worldwide, including in the United States (SAS No. 99), Australia (ASA 240), and international audit standards (ISA 240). It is extensively explored in forensic accounting textbooks and professional instruction handbooks

(Albrecht et al., 2004; Özkul & Pamukcu, 2012), as well as in academic studies (e.g. Murphy & Dacin, 2011; Free & Murphy, 2015; Wilks & Zimbelman, 2004). Smith and Crumbley (2009) observed that the fraud triangle is the most widely taught theory in the United Kingdom, Australia, the United States, Lebanon and Hong Kong, with regard to forensic accounting and fraud investigation courses.

The Fraud Triangle Theory, was introduced by criminologist Donald Cressey in 1953, where he proposed that fraudsters frequently believe they have a financial problem that they are unable to reveal. They are aware, however, that the situation can be remedied in secret by abusing their position of financial trust. They can also justify how they plan to spend the money entrusted to them. Albrecht (1991) coined the phrase "fraud triangle" to symbolize three elements that must exist for fraud to take place: pressure (motive or incentive), opportunity, and rationalization. Political, societal, and financial pressures can all be sources of pressure. It could be either internal or external in nature. In contrast, financial pressure has emerged as the major source of employee dishonesty (Abdullahi et al., 2015; Murdock, 2008; Rae & Subramaniam, 2008). The apparent gap in the organization's control system that allows fraudsters to avoid detection is referred to as "opportunity." Failure of internal control mechanisms, not applying suitable disciplinary procedures, and inadequate directives and oversight may all contribute to this potential (Abdullahi et al., 2015; Aghghaleh et al., 2014). According to Cressey, criminals frequently construct morally acceptable ideas that justify their unethical behavior, which is referred to as rationalization. Thus, rationalization is the formulation of justifications and excuses that allow immoral conduct to lose its illegality in the minds of perpetrators (Akomea-Frimpong et al., 2016).

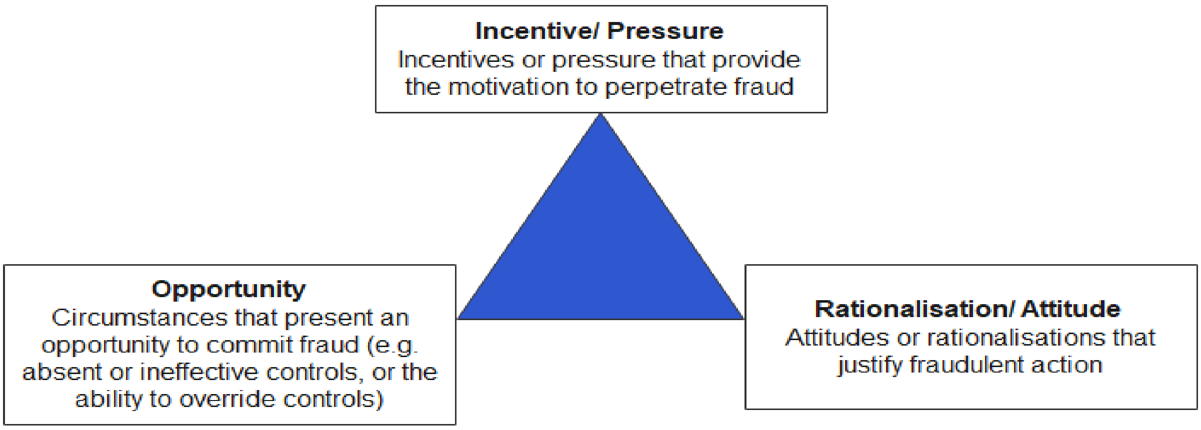

Figure 1: The Fraud Triangle

Source: Free (2015)

2.2 Rational Choice Theory and Related Models

Rational choice theories provide a theoretical framework that encapsulates the line of thought in which an individual as a decision maker may explore numerous methods before deciding on a certain course of action (Becker, 1968). An individual can select one technique over another based on the qualities of the deed or choice (Lokanan & Aujla, 2020). According to this theory, criminals analyze the predicted criminal activity's net utility versus an action that is not criminal and choose the action which amplifies their net utility (Cornish & Clarke, 1987; Becker, 1968). According to this claim, the costs and advantages of misconduct are assessed by actors. before committing fraud if the benefits surpass the costs (Cooper et al., 2013). The most crucial aspect of the rational choice approach lies in the mind or the thought process of individuals (Lokanan & Aujla, 2020). Despite the fact that many people are subjected to numerous fraud-inducing circumstances and prospects, the vast majority of people select not to engage in fraudulent actions. As a result, the rational choice theory considers crime to be an economic event in which rational offenders analyze the costs and benefits of their actions. (Chen et al., 2021). The three requirements for any crime are motivated perpetrators, appropriate objectives, and the absence of competent guardians (Chen et al., 2021).

2.3 Social Control Theories

The first control theory suggested by Hirschi is a form of decision-making theory that aims to comprehend offenders' decisions to conduct or refrain from committing crimes. Almost all criminology theories, according to Hirschi (1969), start with the erroneous fundamental promise that criminal behavior necessitates the establishment of criminal motivation in some way. Hirschi (1969), conversely, starts with the notion that all humans are born with hedonistic tendencies to act aggressively and selfishly, which leads to criminal activity, asserting that this is all part of human nature. According to Hirschi (1969), because most people are law-abiding citizens capable of managing their "natural" inclinations, control theorists should focus on why people do not commit crimes rather than why people do the crime.

Hirschi (1969) argues that the answer lies in people's relationships with prosocial values, people, and organizations, which build links that lessen an individual's tendency for criminal behavior. These bonds are classified into four types: attachment, commitment, participation, and belief. Hirschi (1969) defines *attachment* as feelings for close associates (family members, instructors, religious leaders, acquaintances, and coworkers) as well as closely associated institutions (places of worship, clubs, school). The term "*commitment*" refers to social ties which are cultivated by people and their desire to not risk these relationships by engaging in illegal behavior (Hirschi, 1969*)*. The opportunity costs associated with how people occupy their time are proportional to their level of *involvement* (Hirschi, 1969). If individuals spend more time socializing and developing relationships with others, they will not have adequate time to engage in illegal actions (Lokanan & Aujla, 2020). The extent to which one follows cultural values linked with law-abiding behavior is referred to as *belief* (Hirschi, 1969). The greater the importance of such morals, the chance that he or she is to engage in illegal activity will reduce. These four mechanisms of social control are supposed to work in tandem to safeguard a person against criminal action (Lokanan & Aujla, 2020).

2.4 Developmental and Moral Decision-Making Theories

Moral development is a type of decision-making theory. As criminal laws are a collection of recommendations for avoiding misbehavior, reinforced by the power of the judiciary, understanding why some people breach the law requires the capacity to discern desirable and undesirable behavior (Adams, 2004). One of the models that address moral growth is Kohlberg's (1969) phases of cognitive moral development, in which persons are believed to evolve in six stages. In the pre-conventional level, which encompasses stages one and two, laws are observed to evade retribution and to aid the individual's egotism (Adams, 2004). When the immediate cost and benefits of options are appraised in phases one and two, short-term gains are prioritized over long-term ramifications. These stages posit that fraud occurs when individuals view it as serving their personal interests. Individuals become conscious of the general system of laws that must be followed in order to keep the conventional level of the system from collapsing (stages three and four) (Adams, 2004). In stages three and four, the focus moves from a strictly self-centered view to one which considers the need to follow widely accepted principles of good behavior (Lokanan & Aujla, 2020). Peer pressure may lead an individual to engage in illegal activities if he observes the activities of his group members during these stages. Stages 5 and 6 are commonly referred to as the post-conventional level, where individuals follow the law for the benefit of everyone (Adams, 2004). Individuals in the latter phases of moral development are anticipated to refrain from fraudulent activities because they regard it as an infringement on universal moral standards that should not be violated. Individuals progress through the moral growth stages from a largely ego-centric worldview in which they participate in activities to meet their instantaneous egotism to one in which they are required to follow social norms and overall ethical ideologies (Lokanan & Aujla, 2020). According to Kohlberg's (1969) theory, those who choose to break the law have a lower mental capacity than those who choose not to break the law.

Jones (1991) expands moral decision-making theories by looking at the cognitive process when confronted with an ethical dilemma. According to Jones' (1991) contingent model, the moral gravity of the issue affects ethical decision-making. Moral intensity is defined as "a construct that represents the amount of a situation's issue-related moral urgency" (Jones, 1991, p. 372). Jones (1991), in contrast to Kohlberg (1969), believes that moral intensity is a multifaceted concept with six components that are positively associated with ethical (moral) decision-making and conduct (magnitude of consequences, social consensus, probability of effect, temporal immediacy, proximity, and concentration of effect). Jones describes the extent of repercussions as the harm/benefits to victims/beneficiaries. Social consensus refers to the level to which individuals settle on the virtue or evil linked with a certain deed. The likelihood of effect represents the chance of an action occurring and the harm (or benefits) related to the activity. Temporal immediacy refers to the time that passes between an act and its repercussions. Proximity is referred to as the degree of nearness a perpetrator feels to the victims or the beneficiaries of an act, and the level of the costs and benefits impact on people is referred to as the concentration of effect (Jones, 1991; Lokanan & Aujla, 2020).

2.5 Social Learning Theory

Individuals, their engagements, and their surroundings have a reciprocated and pivotal connection, according to criminology's social learning theory (Bandura, 1971). Individual conduct is influenced by social and environmental factors (Chen et al., 2021). To explain how criminal behaviors are acquired, sustained, and modified, the theory integrates a number of components, including social and intellectual factors, as well as mentors and idols (McCombs & Whisler, 1989). According to the theory, social learning ensues when a person witnesses a role model or someone of higher status engage in an activity and imitate that act (Bandura, 2001). The application of this theory to violence lends credence to it.

According to the social cognitive theory, a descendant of the social learning theory, human motivation is greatly impacted by planning. This mechanism of anticipatory control incorporates expectations regarding the outcomes of specific acts, explaining several important elements that influence behavior. The initial part is the individual's confidence in their own self to perform a specific activity required to accomplish the anticipated result. The other vital construct of SCT is outcome expectancies, which explain individuals' beliefs about the expected consequences of their activities. SCT also contains goals, perceived barriers, and facilitators in addition to these perceptions (Conner & Norman, 2015).

2.6 Stimulus- Organism- Response Theory (SOR)

In 1974, Mehrabian and Russell proposed the SOR theory from the standpoint of environmental psychology (Zhang & Benyoucef, 2016). It emphasizes how external environmental stimuli are able to influence an individual's emotive state as well as encourage or inhibit reaction to certain conduct (Xiao & Benbasat, 2011). SOR theory and social learning theory overlap to some extent since both are founded on the premise that the environment is the main tutor of human behavior. This theory is most commonly used to examine social relations within groups in studies on fraud and consumer behavior (Chen et al., 2021).

2.7 Theory of Reasoned Action (TRA) And Theory of Planned Behavior

The theory of planned behavior (TPB) created by (Ajzen, 1987) and the theory of planned actions (TRA) developed by (Ajzen & Fishbein, 1975) are frequently used to anticipate and describe a wide spectrum of actions and goals. According to the TRA and TPB theories, individual conduct is the outcome of conscious design. Intention also referred to as motivation and the ability to control behavior are critical factors in determining behavior. Some criminal researchers argue that the theory applies to all illegal decisions, independent of the amount of generality or detail investigated or the information processing methods used (Chen et al., 2021). This method disregards elements such as the desires and goals of fraudsters, as well as the economic and sociological situations that may impact their actions or intentions (Chen et al., 2021).

2.8 The Crime Triangle of Routine Activity Theory

Routine activity theory was the first to describe the three elementary variables required to commit a direct-contact predatory crime (Cohen & Felson, 1979). When: (1) a motivated criminal comes into touch with; (2) a suitable target at a precise time and location; and (3) there is no capable guardian present, crime occurs. To prevent a crime one of the three elements must be removed (Cohen & Felson, 1979).

The Crime Triangle in the Routine Activity Theory comprises three triangles, enveloping one another (Figure 2). The inner triangle includes the possible offender, the criminal target, and the crime scene. This triangle denotes the three components assumed to be required for an offense to ensue. The center triangle represents the supervisors as depicted by the inner triangle who can preclude the crime from happening such as handlers and location managers. The supervisors in the middle triangle are overseen by the super controllers in the outermost triangle (Mui & Mailley, 2015). When an offender eludes his or her handlers and detects a target without a guardian in an area not monitored by management, a crime is expected to take place.

The offender's, place, and target supervisors are depicted in the middle triangle. The handler is the perpetrator's supervisor. The manager is the place's supervisor. The guardian is the target's supervisor. The handler is someone who has the ability to influence the offender's behavior and can use the offender's social bond, or "handles," to affect his or her behavior. Even if the offender contacted an appropriate target that was not sufficiently guarded, the handler may prevent a crime occurrence if they were there (Mui & Mailley, 2015). Managers govern and oversee the places and decide who has access to and the accepted behavior within the organization. A guardian is someone who, whether intentionally or unintentionally, reduces the chances of criminal conduct occurring in their presence. Super controllers are in charge of policing the behavior of controllers. They all have an indirect impact on crime incidence by influencing whether supervisors fulfill their function as prospective crime preventers (Sampson et al., 2010).

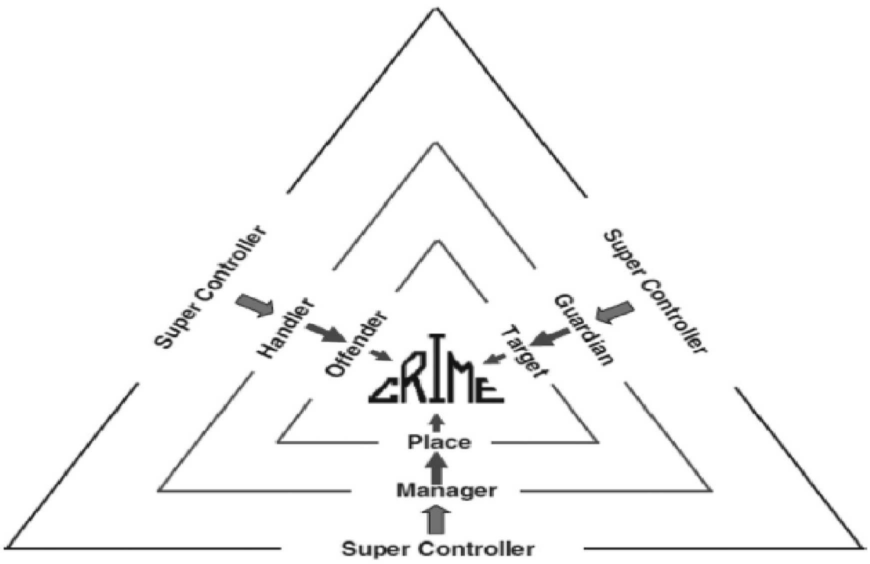

Figure 2: The Crime Triangle.
Source: Sampson et al. (2010).

2.9 Fraud Scale

Albrecht et al. (1984) theorized the fraud scale following an examination totalling 212 frauds conducted at the beginning of the 1980s, by interviewing internal auditors from different organizations affected by fraud. This model takes two elements from the fraud triangle: pressures and opportunities, while the third element (rationalization) is replaced with personal integrity (Dorminey et al., 2012). This idea contends that personal integrity can be appraised

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from past behaviors, whereas rationalization is more difficult to measure (Desai, 2020). This argument applies to financial statement fraud when the causes of pressure (for example, analyst projections, and a track record of sales or profit growth) are more visible (Vousinas, 2019). The fraud scale claims that by combining pressure, opportunity, and integrity, it is possible to assess if a condition posits a higher probability of fraud. Personal integrity has the advantage of allowing examination of both decisions and the process of making decisions to assess a person's commitment to ethical decision-making (Vousinas, 2019).

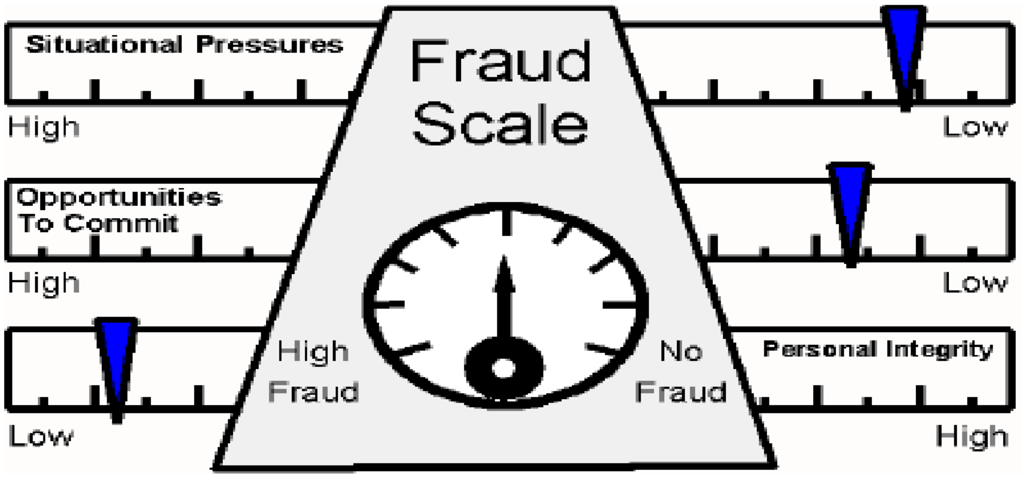

Figure 3: Fraud Scale

Source: Wells (2007)

2.10 General Theory of Crime

Gottfredson and Hirschi's (1990) General Theory of Crime grew out of Hirschi's (1969) work on social control. While Hirschi's (1969) control theory accentuated a person's relationship to the general public as a deterrent to criminal activity, the general theory of crime contends that the key individual attribute that encourages criminal activity is an absence of willpower (Gottfredson & Hirschi, 1990). Crime is defined as a person's incapacity to put off immediate needs in order to obtain instant gratification. The amount to which an individual is sensitive to the temptations of the moment influences his or her decision to commit or refrain from committing a crime (Gottfredson & Hirschi, 1990). Because they fail to contemplate the unpleasant or painful implications of their conduct, those with limited restraint are more prone to succumb to momentary enticement and participate in criminal behavior. Thus, people who are disposed to criminal activity are said to be lacking in willpower (Gottfredson & Hirschi, 1990).

2.11 GONE Theory

Bologua et al. (1993) presented the GONE theory of financial fraud in 1993, suggesting that financial crime is comprised of four factors: G (greed), O (opportunity), N (need), and E (exposure), which all interact to determine the possibility of corporate fraud. Financial fraud is value-driven conduct, and the greed aspect extends beyond the literal meaning (Song-qin et al., 2018). It can be interpreted as a lack of morals and widespread bad ideals, resulting in financial fraud (Song-qin et al., 2018). Financial fraud is used by organizations and people to obtain additional finance and increase market value to gain financial returns and satisfy the requirements for self-realization (Mo, 2020). The opportunity factor refers to a potential fraudster's ability to undertake fraudulent actions or their assumption they can elude detection and punishment. Internal and external governance system flaws, as well as their failure to apply them effectively, give potential fraudsters the right to commit fraud or prevent them from committing fraud (Song-qin et al., 2018). The board of directors, shareholder meetings, and such exist just in name in some organizations, with the chairman exercising complete power (Mo, 2020). The "need" component, also referred to as the "motivation" component, is the inner source of financial fraud (Song-qin et al., 2018). This is the incentive that pushes a fraudster to commit fraudulent acts. One of the "exposure" factors is the likelihood of fraud detection or disclosure, while the other is the type and severity of fraud punishment.

2.12 ICEBERG Theory

Bologna and Lindquist (1995) proposed the iceberg theory (two-factor theory), which claims that the threat of fraud depends on the internal structures of the organization including the management structure, financial resources, organizational goals, and technical status with implied behavioral factors such as attitude, values, emotion, and satisfaction with the latter being more crucial. The Iceberg Theory compares financial fraud to an iceberg at sea level. People can only see the tip of the iceberg of financial fraud because it is visible above sea level. According to the iceberg theory, motivation for accounting fraud is tied to internal control mechanisms as well as to the existence of financial pressure, which necessitates taking into account attitudes, feelings, values, and other elements (Jiang & Cui, 2020).

2.13 Fraud Diamond Theory

The fraud triangle was enhanced by adding one more component, capability, changing the fraud triangle to a fraud diamond by Wolfe and Hermanson, (2004). The fraud diamond theory maintains that an individual is inclined to commit fraud when they have pressure fueled by

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opportunity and capability which can be rationalized by the individual. According to Wolfe and Hermanson (2004), a person's personal characteristics and capability influence the likelihood of fraud: an opportunity facilitates fraud, and incentive (pressure) and rationalization can entice a person toward it; however, the individual must be capable of recognizing the opportunity and repeatedly act on it (Vousinas, 2019). They went on to argue that it takes someone with the necessary skills to notice and seize an opportunity. Thus, while pressure and rationalization may tempt a person, the individual must have the ability to identify opportunities and reap them to commit fraud (Avortri & Agbanyo, 2021).

2.14 Deterrence Theory

Deterrence theory's primary concept is that individuals commit crimes based on their pleasure and pain thresholds. According to this notion, administering certain, grave, and immediate legal sanctions on people intensify their agony and could deter them from perpetrating illegal activities (Pratt et al., 2006). According to the theory, humans can be irrational but are cautious of the possible costs and benefits of fraudulent behavior (Chen et al., 2021). This theory is different from other criminological theories as it focuses on how to prevent crime by punishing criminals appropriately rather than on why an individual commits a crime (Chen et al., 2021).

2.15 Organisational Fraud Triangle Theory

The idea of the organizational fraud triangle, proposed by Free et al. (2007), investigates fraud at the organizational level; widespread fraud, and corruption throughout the organization. The theory was created after conducting a comprehensive investigation of Enron. A key takeaway from the Enron investigation was how the business culture advocated by CEO Skilling incapacitated a superior and extensively appreciated set of control mechanisms, methodically constructed during Kinder's tenure as president of the business (Free et al., 2007). The researchers discovered that the organizational culture of the company changed with the accelerated growth championed by CEO Skilling. The strong management control system within the organization was reformed from a family-oriented approach to a system controlled by a few committees which can be overlooked. Even though the company boasted advanced Management Control Systems, it was subverted and exploited.

To avoid fraudulent acts within a company, the organizational fraud triangle emphasizes the relevance of effectively balancing the fundamental concepts of leadership, organizational culture, and organizational control (Free et al., 2007). The authors demonstrate that organization-wide fraud is conceivable only when these three factors are set up with features inadvertently allowing and encouraging exploitation with inadequate compliance mechanisms. A recent assessment of the organizational fraud triangle displays culture as an organization's acceptable conduct and MCS as processes and systems in place within the organization (Free, 2015).

The three points of the organizational fraud triangle are leadership, organizational culture, and management control mechanisms, which are depicted in figure 5 and serve as the foundation of the organizational fraud triangle theory (OFTT).

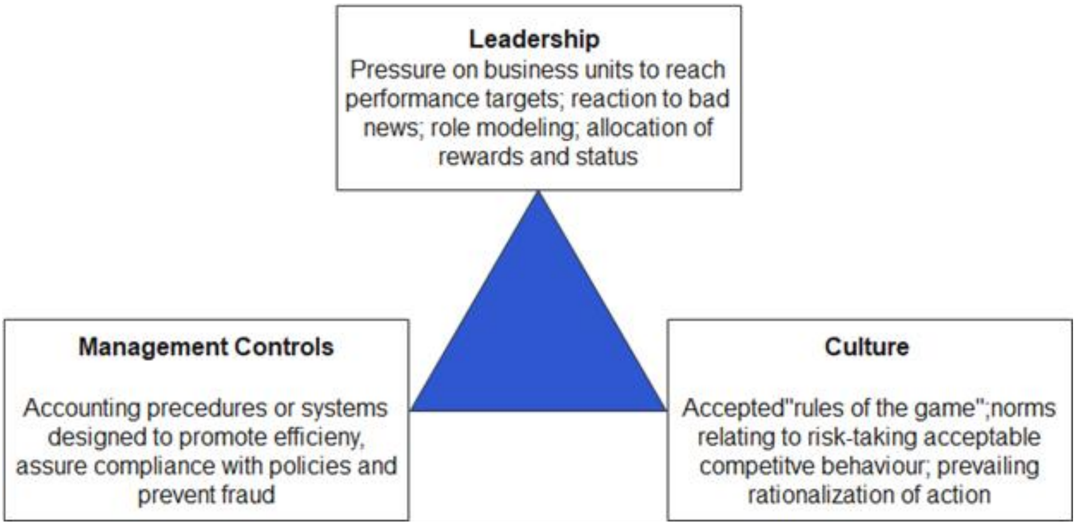

Figure 4: The organisational fraud triangle

Source: Free (2015)

2.16 A-B-C Model

Ramamoorti et al. (2009) presented the A-B-C model for the investigation and classification of fraud in an attempt to move beyond the widely used individualized approach to fraud research. The A-B-C model is made up of three components: a terrible Apple, a bad Bushel, and a bad Crop. The term "bad apple" refers to a person who conducts fraud. The bad bushel refers to collusion in fraudulent activities, which occurs when management staff colludes to commit fraud. Finally, the term "bad crop" alludes to cultural and socioeconomic factors that affect the prevalence of fraud. The term "bad bushel" denotes group dynamics and interactions among top management employees that often encourage fraud. The term "poor crop" refers to an absence of a strong "tone at the top" that accentuates the legality and ethics of an organization’s actions which gradually penetrates the organization, as well as culture and society (Ramamoorti et al., 2009). Aside from the organizational fraud triangle theory, the ABC Model is the only other theory that provides insight into organizational-level fraud.

2.17 Fraud Pentagon Theory

The Fraud Pentagon Theory was coined by Crow Howarth in 2011. This idea connects Cressey's (1953) Fraud Triangle and Wolfe and Hermanson's (2004) Fraud Diamond. Crowe's pentagon fraud theory incorporates two additional elements of fraud: competence and arrogance (Avortri & Agbanyo, 2021). The fraud pentagon theory's concept of competence is the same as Wolfe and Hermanson's (2004), definition of capability in the Fraud Diamond Theory. Arrogance is a person's attitude of superiority based on their position or rights, such that they believe the company's internal controls or policies do not apply to them (Sari et al., 2020).

2.18 MICE

MICE is an acronym that stands for money, ideology, coercion, and ego. Ideological motivators rationalize stealing money or lying to achieve some benefit that aligns with their values (ideology) (Kranacher et al., 2011). Because individuals are terrified of power loss, especially in front of their communities or families, ego can be an incentive for fraud. This might be a strong motive for them to engage in fraud in order to protect their ego. While the MICE heuristic may not account for all deceitful intentions, some do fall into many categories. This provides a broader framework to assess the possibility of fraud (Vousinas, 2019). MICE theory tries to go beyond financial pressures by presenting a broader range of incentives that surpasses a non-shareable financial strain that could drive fraud. Ramamoorti (2008) and Ramamoorti et al. (2009) found that social status comparisons and a competitive culture (Coleman, 1987) could contribute considerably to white-collar crime.

2.19 SCORE Model

Vousinas (2019) offers the S.C.O.R.E. model, an acronym for stimulus, capability, opportunity, rationalization, and ego, to better comprehend the primary components that lead to the commission of fraud. The first four elements of the model (stimulus, capability, opportunity, and rationalization) are derived from the Fraud Diamond (an extension of the fraud triangle), while the fifth is added to help improve fraud detection and prevention while also raising awareness of the major factors influencing fraudulent activity.

A stimulus (or incentive) is a financial or non-financial push to conduct fraud. Exorbitant financial requirements, pressure to meet targets, workplace frustrations, urgency in achieving professional goals, and on rare occasions, simply beating the system (attributed to egoism) are all examples of pressure (Vousinas, 2019).

Capability denotes personal attributes and talents that influence whether or not fraud occurs in the face of pressure, opportunity, and rationalization. Many frauds, notably large financial statement frauds, would not have been perpetrated if the scheme's complexities had not been carried out by the appropriate person with the proper talents. The door is opened by opportunity, incentives and rationalization to persuade the potential fraudster to step through it, and the individual must be capable of doing so (Vousinas, 2019).

The ability to conduct fraud is defined as an opportunity. It should be highlighted that the perpetrator must believe that the chance is genuine and inherently real. According to fraud research, individuals' authority and position within the organization also provide opportunities (Vousinas, 2019). The top position in a firm indicates power and authority.

Rationalization helps the fraudsters in justifying fraud as many fraudsters consider themselves, to be honest, ordinary individuals rather than criminals, they must construct a reason to justify their actions. Some people defend their dishonest activities by redefining misconduct to omit their own actions (Vousinas, 2019).

The ego is a personality attribute that works as a coping mechanism by moderating the commands of the personality, superego, and environment. The ego inhibits individuals from acting out the urges generated by their personalities while allowing them to function despite being ethically driven. According to Allan (2003), the "egotist," who is success-driven, selfish, confident, and sometimes narcissistic is one of the most common personality characteristics. Kranacher et al. (2011) introduced the MICE model, which also emphasized the relevance of ego as a primary incentive for fraud.

As proven by recent massive frauds, collusion is a factor in many intricate and major financial (white-collar) crimes. Many recent significant organizational frauds included several employees (Vousinas, 2019). Various anti-fraud procedures are based on the notion of role independent checks, which may explain the rise in losses associated with many crimes. When a group of fraudsters collaborates, they might undermine the process of independent transaction checks or other procedures in place for fraud detection. Thus, the S.C.O.R.E. model can be expanded to the S.C.C.O.R.E. model by adding the sixth element of collusion, resulting in the Fraud Hexagon (Vousinas, 2019).

3.0 RESEARCH DESIGN

This paper employed a systematic review process and the name of the theory was used as the keyword in the Scopus database to identify papers that discussed the theories on 22nd July 2022. The database was searched based on the article title, abstract and keyword related to the name of identified theories. A total of 342 papers were identified and used to compile the information in table 2. For this part, a theoretical review approach was adopted, whereby the fraud theories were identified and discussed. Subsequently, the repeated papers were deleted and the list was sorted by the year of publication. The 39 papers which were published in 2022 were further analysed to find out the most commonly adopted theory, approached and unit of analysis in fraud research.

4.0 ANALYSIS AND DISCUSSION

A total of 19 theories were identified during the theoretical review. These theories dated from 1953 to 2019. As can be seen from table 1 below most of the theories explore fraud from an individual perspective. Theories which explore fraud, specifically from an organizational perspective are still scant. As such, several researchers have applied theories such as Fraud Triangle Theory to explore fraud at an organizational level as well. Thus, more research needs to be conducted to develop and enhance theories which can be used to explain and evaluate fraud at an organizational level.

Table 1: The evolution of fraud-related theories

Theory	Year	Author	Target
Fraud Triangle Theory	1953	Cressey	Individual
Rational Choice Theory	1968	Becker	Individual
Social Control Theory	1969	Hirschi	Individual
Developmental and Moral Decision-Making Theories			
Stages of Cognitive Moral	1969	Kohlberg	Individual
Social Learning Theory	1971	Bandura	Individual
Social Cognitive Theory	1986	Bandura	Individual
Stimulus-Organism-Response Theory	1974	Mehrabian and Russel	Individual
Theory of Reasoned Action	1975	Ajzen and Fishbein	Individual
Theory of Planned Behaviour	1987	Ajzen	Individual
Routine Activity Theory	1979	Cohen and Felson	Individual
Fraud Scale	1984	Albrecht et al.	Individual
General Theory of Crime	1990	Gottfredson and Hirschi	Individual
Development Contingent Model	1991	Jones	Individual
Gone Theory	1993	Bologua et al.	Individual
Iceberg Theory	1995	Bologna and Lidquist	Individual
Fraud Diamond Theory	2004	Wolfe and Hermanson	Individual

Deterrence Theory	2006	Pratt et al.	Individual
Organizational Fraud Triangle Theory	2007	Free et al.	Organizational
ABC Model	2009	Ramamoorti et al.	Individual/Organizational
Fraud Pentagon Theory	2011	Howarth	Individual
MICE	2011	Kranacher et al.	Individual
SCORE Model	2019	Vousinus	Individual

Source: Compiled by Authors from the literature

The following table 2 shows the SCOPUS search result of the extent to which the identified theories were used in published articles during the last 2018 to 2022 along with the most prominent author(s) in each theory. The analysis shows that the Fraud Triangle Theory is most commonly discussed during the period (in 134 papers), followed by Social Control Theories which were discussed in 42 papers. Further, Social Learning Theory was discussed in 28 papers while Fraud Diamond Theory was discussed in 22 papers followed by the deterrence theory in 19 papers. All the other theories are sparingly applied in the literature with The Crime Triangle of Routine Activity only used once. Thus, the analysis shows that the Fraud Triangle Theory is the most widely discussed and applied theory to explore fraud during the period. Further, as shown by table 2, many theories do not have a prominent author at the moment with all the authors having just 1 paper published during the period.

Table 2: Summary fraud-related theories

Theory	**No. of Articles Published**						**Most Prominent Author**	
	2022	**2021**	**2020**	**2019**	**2018**	**Total**	**Name**	**No. of Articles**
The Fraud Triangle Theory	23	26	32	30	23	134	Said, J,	4
Rational Choice Theory and Related Models	2	1	1	2	4	10	Otu, S.E.	2
Social Control Theories	8	10	12	6	1	41	Basuki Hadiprajitno, P.T. Zulaikha	2
Developmental and Moral Decision-Making Theories	2	-	-	1	2	5	No prominent author	-
Social Learning Theory	5	9	5	4	5	28	Karypis, G. Zheng, D.	4

Stimulus Organism Response Theory (SOR)	-	-	-	3	-	3	No prominent author	-
Theory Of Reasoned Action (TRA) And Theory Of Planned Behaviour	1	4	6	3	1	15	Basuki Hadiprajitno, P.T. Zulaikha,	2
The Crime Triangle of Routine Activity Theory	-	-	1	-	1	2	No prominent author	-
Fraud Scale	-	2	1	1	-	4	No prominent author	-
General Theory of Crime	1	2	6	2	3	14	No prominent author	-
GONE Theory	2	-	1	2	1	6	No prominent author	-
ICEBERG Theory	-	1	-	-	1	2	No prominent author	-
Fraud Diamond Theory	6	5	4	5	2	22	No prominent author	-
Deterrence Theory	2	3	2	6	6	19	Ohalehi, P.	-
Organisational Fraud Triangle Theory	1	-	2	2	2	7	No prominent author	-
A-B-C Model	-	1	1	-	-	2	No prominent author	-
Fraud Pentagon Theory	3	3	1	1	1	9	Pamungkas, I.D.	2
MICE	-	1	1	1	-	3	No prominent author	-
SCORE MODEL	3	5	6	2	1	16	Lu, W. Riantono, I.E. Zhao, X.	2

Source: Compiled by Authors from data collected from Scopus Website

The following table 3 summarizes the papers which have applied the above-mentioned theories discussed. A total of 39 papers were systematically chosen. The review also shows that with a total of 22 papers, The Fraud Triangle Theory is the most commonly applied theory during the period examined. Further, most of the papers have adopted a quantitative approach with individuals as a unit of analysis.

Table 3: Application of fraud-related theories

No.	Author(s)/ Year	Theory	Research Type	Unit of Analysis
1	(Villaescusa & Amat, 2022)	Fraud Triangle Theory	Case Study	-
2	(Herron et al., 2022)	Fraud Triangle Theory	Case Story	Individual
3	(Adelopo & Meier, 2022)	Fraud Triangle Theory	Qualitative	Individual
4	(Mousa, 2022)	GONE Theory	Qualitative	-
5	(Farrar & King, 2022)	Deterrence Theory	Quantitative	Individual
6	(Zhong et al., 2022)	Fraud Triangle Theory/ Performance feedback Theory	Quantitative	Organizational
7	(Hasnan et al., 2022)	Fraud Triangle Theory	Quantitative	Organizational
8	(Kagias et al., 2022)	Fraud Tringle Theory	Theoretical	-
9	(Soneji, 2022)	Fraud Triangle Theory/ Fraud Diamond Theory/ Fraud Pentagon Theory	Theoretical	-
10	(He et al., 2022)	Fraud Triangle Theory	Quantitative	Individual
11	(Agyemang et al., 2022)	Stakeholder Theory	Socio-Legal Review	-
12	(Murdock et al., 2022)	Theory of moral Philosophy	Review Paper	-
13	(Arkorful et al., 2022)	Fraud Diamond Theory	Quantitative	Organizational
14	(Sánchez-Aguayo et al., 2022)	Fraud Triangle Theory	Qualitative	Individual texts
15	(Ratmono & Darsono, 2022)	Agency Theory	Quantitative	Organizational
16	(Liu et al., 2022)	Fraud Diamond Theory	Qualitative	Individual
17	(DuHadway et al., 2022)	Transaction Cost Economics, Agency Theory, and Fraud Triangle Theory	Quantitative	Individual
18	(Soepriyanto & Limijaya, 2022)	Fraud Triangle Theory	Case study	-
19	(Shonhadji & Maulidi, 2022)	Contingency Theory	Mixed Method	Individual
20	(Chen et al., 2022)	GONE Theory	Quantitative	Organizational
21	(Din et al., 2022)	Agency Theory, Institutional Theory, Economic Regulation Theory and Fraud Triangle Theory	Quantitative	Organizational

22	(Nana et al., 2022)	Game Theory	Qualitative	Organizational
23	(Demetriades & Owusu-Agyei, 2022)	Fraud Diamond Theory	Quantitative	Organizational
24	(Suryani & Fajri, 2022)	Fraud Triangle Theory	Quantitative	Organizational
25	(Julian et al., 2022)	Fraud Triangle Theory	Quantitative	Individual
26	(Gleason et al., 2022)	Fraud Triangle Theory	Literature Review	-
27	(Hudayati et al., 2022)	Fraud Triangle Theory	Quantitative	Organizational
28	(Goode & Lacey, 2022)	Fraud Diamond Theory	Qualitative	Individual
29	(Xie et al., 2022)	Fraud Triangle Theory	Qualitative	-
30	(Owusu et al., 2022)	Fraud Triangle Theory	Quantitative	Individual
31	(Sahla & Ardianto, 2022)	Fraud Pentagon Theory	Quantitative	Individual
32	(Chhatwani, 2022)	Agency Theory and Rational Choice Theory	Quantitative	Individual
33	(Sharma et al., 2022)	Theory of Planned Behaviour	Quantitative	Individual
34	(Khamainy et al., 2022)	Fraud Diamond Theory	Quantitative	Organizational
35	(Shbail et al., 2022)	Fraud Triangle Theory and Social Capital Theory	Quantitative	Individual
36	(Zhang et al., 2022)	Routine Activity Theory	Quantitative	Individual
37	(Yost, 2022)	Fraud Triangle Theory	Quantitative	Organizational
38	(Achmad et al., 2022)	Fraud Pentagon Theory	Quantitative	Organizational
39	(Macedo et al., 2022)	Fraud Triangle Theory, Agency Theory and Stakeholder Theory	Quantitative	Organizational

Source: Compiled by Authors from the literature

5.0 CONCLUSION

The review of the literature revealed that there are at least 19 established fraud-related theories that explain the antecedent and effect of fraud as summarized in the above table. In addition, the analysis found that the theories can be categorized into individual and organizational fraud theories. Generally, most theories agreed that the common leading factors that contribute to fraud can be classified into the external environment (i.e. weak internal control, peer pressure) and individual factors (i.e. lifestyle, financial pressure, personal traits, thought process, rationalization, etc.). Further, the systematic analysis also reviews that the Fraud Triangle Theory is the most frequently used theory applied in Fraud research from the period 2018 to 2022.

The study is limited by the search phrases used in the literature search. Using a different keyword may bring a different number of papers for review. Additionally, since the papers were sorted by the number of citations per paper, it provided older papers while recent papers were omitted from the review. However, the findings in tables 2 and 3 are consistent, which shows that this has not had an impact on the findings of the research.

This paper contributes to the growing interest in the study related to fraud and attempts to provide a comprehensive analysis of theories related to fraud. The studies of fraud are timely and always highlight contemporary issues which deserve a more comprehensive approach to understanding who and why people are involved in fraud. The building of appropriate theories in empirical investigations facilitates an understanding of human behavior. The fraud theories discussed and summarized help to provide an opportunity and useful addition for policymakers, academics and practitioners to further understand strategies to overcome fraud-related behavior. Therefore, a proper understanding of these theories can lead to efficient strategies to ensure the long-term sustainability of organizations.

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