Review Article

Occupational Fraud Models: A Comparative Analysis and Proposed Expanded Model

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ABSTRACT

The purpose of this paper is to perform a comparative analysis of three existing occupational fraud models: the fraud triangle, the fraud diamond, and the fraud scale. The first part of this analysis includes a discussion about the components of occupational fraud and the theoretical framework used to explain its occurrence. Secondly, all three occupational fraud models are compared and weaknesses are discussed. After a comprehensive analysis of the current models is complete, a new model is presented. This new model combines the strengths of all three previous models, as well as adds an additional component – organizational culture. This analysis demonstrates the need to expand on and revise the current models to include organizational culture. Organizational culture can deter or invite people to commit occupational fraud. Some existing models include organizational culture within a small subsection of opportunity, however, results of this analysis suggest the benefit of separating organizational culture into its own distinct section.

Keywords: Occupational fraud; Fraud triangle; Fraud diamond; Fraud scale; Occupational fraud models; ACFE; organizational culture; Opportunity; Pressure; Rationalization; Asset misappropriation; Corruption; Financial statement fraud

INTRODUCTION

Over the last two decades, a series of high-profile occupational fraud cases, including those at Enron, Tyco, WorldCom, and HealthSouth, have led to a heightened awareness of this devastating crime [1]. Occupational fraud is a broad category of fraud that encompasses white-collar crime committed within organizations. In the late 1930's, researchers began developing occupational fraud models in an effort to explain why people commit white-collar crime and how it can be prevented, detected, and/or deterred. In 1939, Edwin Sutherland developed the theory of differential association to explain criminal behavior [2]. Sutherland's research focused on non-violent crimes, and he later coined the term "white-collar crime" [3]. Sutherland defined white-collar crime as a crime by respected individuals who possess a high social status in their occupation [4]. Additionally, Sutherland argued white-collar crime is a violation of delegated trust within the organization [5].

Before the introduction of the concept of white-collar crime, the study of criminology focused mainly on the broad topic of crime, including street and violent crime. Three ways in which Sutherland differentiates street or violent criminals from white-collar criminals include professional status with admiration and intimidation, lesser penalties, and varying consequences borne by society . Sociologists use the term white-collar crime to describe crimes committed by successful and respectable individuals with access to societal resources [3,4].

This article presents a comparative analysis of three existing occupational fraud models: the fraud triangle, the fraud diamond, and the fraud scale. The first part of the analysis is a discussion about occupational fraud. In the second part of this article, all three models are compared and weaknesses are discussed. In the final section, a suggestion for a new model is presented. This new expanded occupation fraud model combines the strengths of all three of the previous occupational fraud models, as well as adds an additional component. This analysis demonstrates the need to expand on and revise the current models to include organizational culture. The concept of an ethical organizational culture is a multidimensional construct that includes tone at the top and ethical leadership [6]. Organizational culture can deter or invite people to commit occupational fraud. Past occupational fraud models have included organizational culture as a small subsection of opportunity, however, results of this analysis suggest the benefit of separating organizational culture into a separate, distinct section.

LITERATURE REVIEW

Occupational fraud

Occupational fraud activities perpetrated by employees at all levels

of an organization can negatively affect a company's reputation [7]. According to the anomie theory, the emphasis on achievement in modern industrialized society, and the pressures that result, can lead to deviant behavior [8]. One type of deviant behavior is occupational fraud. Occupational fraud is a financially devastating threat to all types of organizations [9]. With the average loss being greater than $150,000 per case, one incident of occupational fraud could put a company out of business [10]. According to a 2018 global fraud study conducted by the Association of Certified Fraud Examiners (ACFE), occupational fraud is defined as a fraud against an organization committed by its own directors, officers, or employees Occupational fraud is an attack against an organization by those entrusted to protect its assets and financial resources [11].

Occupational fraud can be separated into three main categories – asset misappropriation, financial statement fraud, and corruption. According to the Association of Certified Fraud Examiner's 2018 global fraud study, asset misappropriation is the most common type of occupational fraud, occurring 89% of the time [11]. Corruption is the second most common, however, with a median loss of $800,000, financial statement fraud is the most costly type of occupational fraud [12].

Occupational fraud theory

Over the years, various theories have been used to explain the complex subject of occupational fraud. Two theories, the anomie theory and the theory of differential association, have been instrumental in developing several occupational fraud models. In particular, the fraud triangle, the fraud diamond, and the fraud scale, currently serve as a guide to help organizations prevent, deter, and detect occupational fraud within their organizations. However, there are weaknesses in these current models of occupational fraud and additional research is needed to create a more complete model.

Anomie theory

In the early twentieth century, sociologists developed the anomie theory to understand crime, specifically crimes associated with poverty. The anomie theory is a deviant behavior theory that suggests some members of society, especially those who lack certain tools to achieve success, will resort to crime to rectify their perceived injustice. Pressure to obtain specific goals, such as being financially wealthy, can lead individuals to alternative ways of achieving these goals, including crime [4].

Theory of differential association

In 1939, Edwin Sutherland developed the theory of differential association to explain criminal behavior [2]. The theory of differential association is also a deviant behavior theory. Sutherland's research focused on non-violent crimes, and he later coined the term "white-collar crime" [3]. Sutherland defined white-collar crime as a crime by respected individuals who possess a high social status in their occupation [4]. Additionally, Sutherland argued white-collar crime is a violation of delegated trust within the organization [5].

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societal resources [4]. White-collar crime is also considered to be a non-violent crime.

The fraud triangle

Donald Cressey was the first documented person to study why people commit accounting fraud [13]. Over a five-month period, Cressey interviewed 250 criminals who had violated a position of trust at their place of employment Based on the results of his research, he developed the fraud triangle, depicted in Figure 1, to explain why people commit accounting fraud [14]. According to Cressey, the fraud triangle has three sides, including opportunity, rationalization, and pressure, and when all three are present, the chance of occupational fraud increases [1]. The basic elements of the fraud triangle has remained the same for the past 60 years (Figure 1).

Opportunity

The first side of the fraud triangle is opportunity. The perpetrator must have the opportunity to commit the fraud, cover it up, and avoid punishment [15]. Opportunity presents itself when an employee is in a position of trust, internal controls are lacking, and the perpetrator has a clear understanding of the business processes within the organization [16]. Opportunity is the perception that an internal control weakness is present and the likelihood of getting caught is small [3].

Without an opportunity, the crime of occupational fraud cannot take place [10]. For example, if an employee does not have access to financial records, they cannot falsify them. Having access to an organization's financial records would be an opportunity for someone to alter them. Opportunities, particularly those allowed by a lack of sufficient internal controls, varies based on the size of the organization [11]. Internal controls can be costly to implement, however, adequate internal controls can deter and detect occupational fraud committed by individuals. On a side note, internal controls do not work when collusion, occupational fraud committed by two or more individuals, is present.

Rationalization

The second side of the fraud triangle is rationalization. Rationalization can show up in several different forms. A common reaction from white-collar criminals is a feeling of indifference, or a lack of feelings, regarding their crimes [15]. They tend to make excuses or rationalize their behavior [17]. Rationalization is an attempt to reduce the individual's cognitive dissonance within a particular situation. People who commit fraud desire to remain within their moral comfort zone. It is through rationalization that a perpetrator is able to reduce the dissonance and move forward with the crime [3].

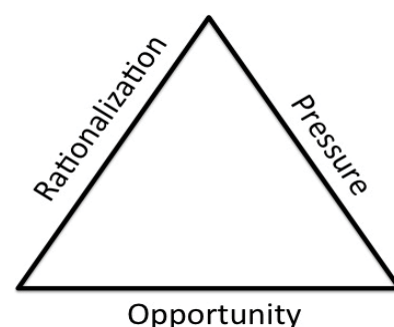There are several ways in which a person can rationalize their crime.

Figure 1: The Fraud Triangle [14].

Rationalization can occur when an employee feels their employer is treating them unfairly, as compared to another employee. Inequity exists when an individual feels that another person is being treated more fairly. Inequities, including monetary and status inequity, can create tension and disaccord among employees [17]. Problems can also arise between the employee and the employer. An employee may feel entitled to a particular promotion; with accompanying pay increases and job status upgrades. The employee might become disgruntled and resentful if they did not receive a promotion [15].

If employees feel they are inequitably treated, compared to other employees, they may turn to deviant behaviors, such as occupational fraud, to rectify the perceived inequity. Employees rationalize their deviant behavior because they feel their employer owes them something [17]. Additionally, individuals often rationalize and make excuses for their deviant behavior to rid themselves of guilt. Pay inequity can lead to resentment and foster an environment where employees feel justified in stealing from their employers [15].

Pressure

The third side of the fraud triangle is pressure. There are three types of pressure: a personal pressure to pay for one's lifestyle, pressure by the employer to meet company expectations, and external pressures [18]. Pressure, both financial and non-financial, can motivate an employee to behave in an unethical manner and commit an illegal act. Employees feel various types of pressure, including vices, work-related pressure, the pressure to fit in with other employees, and a desire to acquire material possessions. There are many reasons why someone may feel financial pressure. For example, they may lack the education and experience necessary to advance to a higher level or the economy may lend itself to lower salaries. Monetary incentives, including company performance bonuses, can create pressure for a top-level executive to inflate company earnings [15].

As with most concepts, there is recurring opposition to the fraud triangle. There are researchers who believe the fraud triangle is not an adequate tool for preventing and detecting accounting fraud [6]. The fraud triangle is the convergence of opportunity, rationalization, and pressure used to explain the occurrence of accounting fraud [19]. The fraud triangle focuses on fraudsters having a non-shareable financial pressure. A non-shareable financial pressure is the most criticized section of the fraud triangle [5]. Soltani B argues fraud perpetrators do not all feel non-shareable financial pressure, and some of them do not need the rationalization to commit the crime [6].

Additionally, Soltani [6] suggest the fraud triangle should not be used as a lone source when trying to understand the reason for the occurrence of accounting fraud. A study [19] does not believe the Fraud triangle explains all incidences of occupational fraud. For example, opportunity does not address collusion, including management overrides. The specific type of pressure addressed in the Fraud triangle is financial pressure [13]. Financial pressure is not the only type of pressure that can be a catalyst for fraudulent behavior .When millionaires devise corporate fraud schemes, financial pressure is not one of their motives to commit the crime. Additionally, not all fraudsters find morally justifiable reasons to commit this crime. There are amoral individuals who commit fraud; therefore, they would not fit the type of fraudster presented in the Fraud triangle [5].

While these are all valid points made by a study [19], the findings of the study are based on a few case studies used to generalize the occurrence of occupational fraud to a much larger population. A single theory cannot encompass all of the possible elements of such a complicated subject. The fraud triangle attempts to encompass the majority of occupational fraud cases, and there will always be exceptions to the rule [13].

The fraud diamond

As previously noted, the fraud triangle has limitations and some argue it can be enhanced to improve occupational fraud detection and prevention. In an attempt to expand the fraud triangle, researchers developed the fraud diamond, which adds a fourth element. In addition to opportunity, rationalization, and incentive (pressure), the fraud diamond, which is shown in Figure 2, includes capability to the equation. Pressure from the fraud triangle is renamed in the fraud diamond as incentive. Both pressure and incentive describe the more common term within crime literature – motive.

The fraud diamond adds the fraudster's capabilities, including personal traits and abilities. Capabilities play a major role in whether fraud will actually occur, given the other three components of the fraud triangle [3]. It can be argued that many of the large fraud cases would not have occurred without having a person with certain capabilities implementing the details of the fraud (Figure2).

High-level fraudsters tend to have greater access to an organization's assets than lower level employees. Individuals typically rise to levels where opportunity to commit fraud is present by having certain capabilities. They often have greater technical ability to commit and conceal fraud, using their authority to override internal controls. Therefore, capabilities is more of a subset of opportunity than its own separate category [11].

The fraud scale

The fraud scale, shown in Figure 3, was first introduced into occupational fraud literature by Steve Albrecht and several of his colleagues. The fraud scale turns the elements of the fraud triangle into a balancing scale. The concept of the fraud scale is an attempt to balance levels of pressure, opportunity, and personal integrity. The fraud scale is similar to the fraud triangle as it includes integrity, but it does not include rationalization, which is a key component of occupational fraud.

Developers of the fraud scale suggest higher pressure, greater opportunity, and low personal integrity increase the likelihood of occurrence of occupational fraud within an organization. Rationalization is a deeply personal process that varies from one individual to the next. The benefit of using personal integrity as a
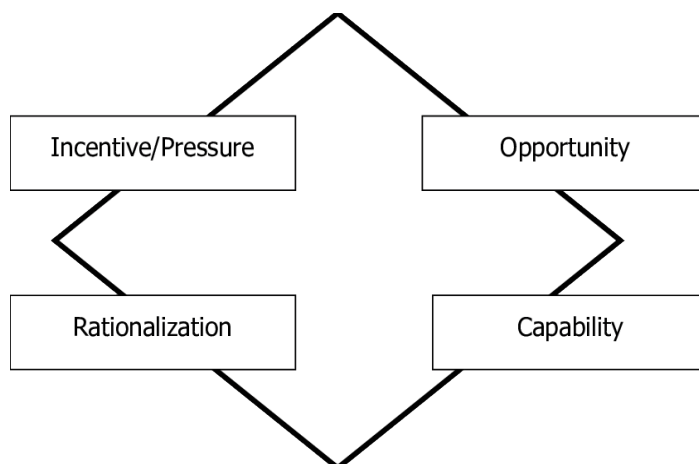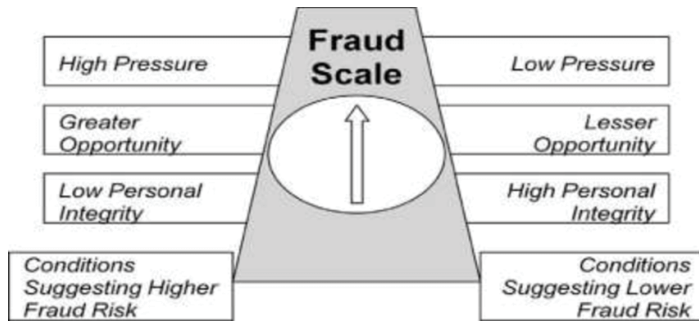

Figure 2: The Fraud Diamond [19].

Figure 3: The Fraud Scale.

component in the fraud scale is because integrity can observed in a person's prior decision-making and past commitment to ethical behavior (Figure 3) [3].

While integrity should be considered when developing a model to explain the occurrence of occupational fraud, integrity is still an abstract concept that can be hard to measure. Additionally, personal integrity is already a factor into rationalization. As depicted in the fraud scale, a person with higher integrity might not be as likely to commit fraudulent behavior [3]. An inference can be made that individuals with high integrity may not choose to rationalize the decision to engage in occupational fraud.

The fraud diamond and the fraud scale were both developed from the foundation of the fraud triangle. Each model incorporates various elements from the fraud triangle, however, they do not add new idea to occupational fraud research. The current fraud models are basically looking at the same information is a slightly different way. However, the information remains the same. There is a missing component to all three models included in this analysis – organizational culture.

Expanded occupational fraud model

As previously discussed, there are both strengths and weaknesses to the fraud triangle, the fraud diamond, and the fraud scale. These three models of occupational fraud are found throughout accounting research. The fraud diamond and the fraud scale are evolutions of the original fraud triangle. Due to the complex and sophisticated nature of occupational fraud, this crime can be difficult to capture in one model. Not only are there various types of occupational fraud (asset misappropriation, corruption, and financial statement fraud), as shown in Figure 4, the fraud tree, there are also many variations of occupational fraud schemes, including bribery, theft of cash, fraudulent disbursements, and over or understatement of earnings and expenses

A proposed expanded model of occupational fraud shown below in Figure 5 includes four sections: opportunity, rationalization, pressure, and organizational culture. Therefore, this model reverts back to the elements within the original fraud triangle. However, a new element is added, organizational culture, to help capture the various components of this crime. This expanded occupational fraud model does not apply to repeat offenders of occupational crime. It only applies to first time offenders. Additional research is needed in order to develop an expanded model for repeat and long-term occupational crimes.

Organizational culture

Every organization has a unique organizational culture. An ethical organizational culture includes an appropriate "tone at the top." It is argued that tone from high-level management will either help to prevent fraud or to enable it [7]. An environment where ethics
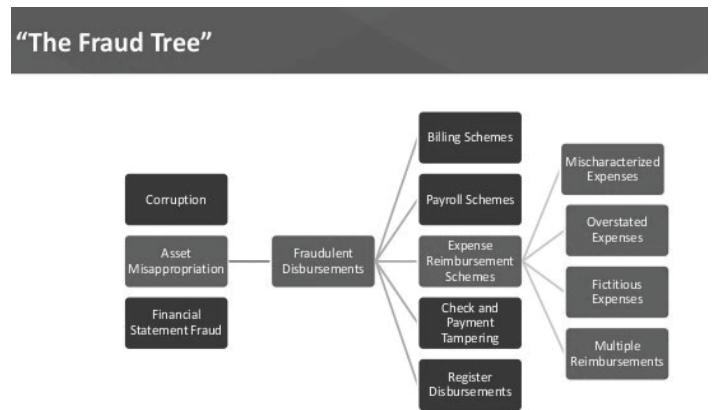

Figure 4: ACFE - Report to the Nations Occupational Fraud Tree [11].
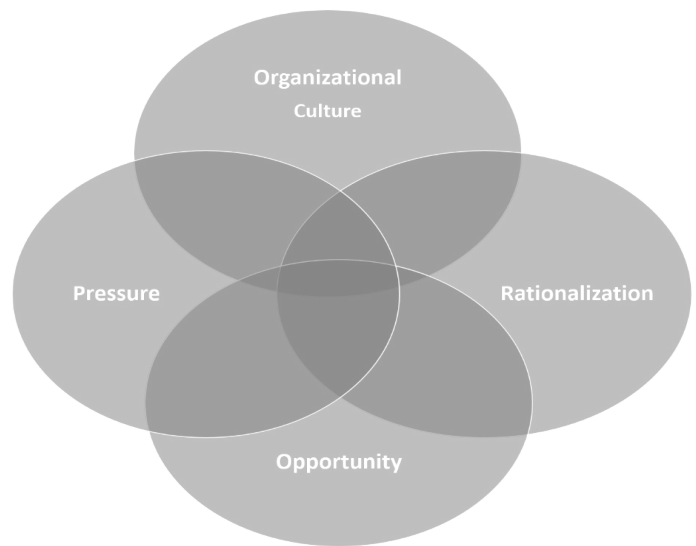

Figure 5: Proposed Model of Potential for Fraud.

are valued, especially by those in top management, provides an additional deterrent to occupational fraud because concealment is difficult and once caught, punishment is certain [3]. Organizational culture is underscored by reinforcement of ethical conduct and an ethical climate is proposed to have a significant role in the way members of an organization behave, whether it be ethically or unethically [20].

An ethical organizational culture can deter fraudulent behavior [20]. Examples of an ethical organizational culture include strong tone at the top, appropriate internal controls, whistleblower protection and hotlines, ethical code of conduct, perpetrator punishment, proactive fraud training, and a robust ethical culture. Unethical behavior can become normalized, acceptable, and commonplace within the organization [21]. The primary deterrent of occupational fraud is the fear of getting caught and the fear of punishment [3].

Occupational fraud is one of the most negative factors affecting society, it appeared in ancient times and has not disappeared to this day [18]. During the last two decades, the world was shocked by a series of high profile accounting frauds that sent the accounting profession into turmoil [19]. In our current economic times, occupational fraud remains one of the highest risks facing all organizations [22]. For decades, accounting researchers have been trying to develop occupational fraud models to help reduce this financially devastating crime.

The fraud triangle was the first model developed to try and explain why occupational fraud is committed within organizations. The fraud triangle has also been used as a foundation for creating systems to help prevent, detect, and deter occupational fraud. Over the past 60 years, the fraud triangle has morphed into various subsequent models, including the fraud diamond and the fraud scale to help researchers and practitioners better understand this crime. The fraud triangle has been criticized by researchers and accountants for not being thorough enough to include every occurrence of fraud [23]. Due to the sophisticated nature of occupational fraud, developing a model to include all occurrences of this crime is challenging [24].

CONCLUSION

The creation of the fraud diamond and the fraud scale were attempts to include additional areas of fraud. Elements from both the fraud diamond and the fraud scale can be collapsed back into the main components of the fraud triangle – opportunity, rationalization, and pressure. These three components are essential to the occurrence of occupational fraud. However, they may not be the only requirements for someone to commit this crime. One component that is lacking in all three models is organizational culture. An expanded model that includes opportunity, rationalization, pressure, and organizational culture would allow for more variables to be considered when attempting to reduce or eliminate the crime of occupational fraud. In an ethical organizational culture, the likelihood of fraud occurring is low. Additionally, when fraud occurs in this type of environment, it is often discovered in a shorter timeframe.

The wave of financial scandals in the 21st century elevated the awareness of occupational fraud. However, occupational fraud continues to be a potential problem for all organizations. Occupational fraud is a complex area of accounting research, and fraud cases continue to surface, causing devastation for organizations and their employees, investors, and creditors. Areas of future research are including a model for repeat occupational fraud offenders and occupational fraud where collusion is involved. First time offenders differ from repeated offenders due to the fact that rationalization and pressure often disappear once the fraudster "gets away with" the crime. Also, when people collude together in a fraud scheme, internal controls can be ineffective.

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