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HONORS THESIS

How Does the Capability of Top Management Influence Financial Reporting Fraud?

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ABSTRACT

This study examines the attributes which capture the capability of a perpetrator to engage in financial reporting fraud. Fraudulent financial reporting can be devastating for a company and its employees. Capability includes such measures as the person's position and the function in which they work. The study reveals how capability influences the occurrence of fraud, the amount of the fraud, and whether capability interacts with concealing the fraud from an audit. The results of the thesis should assist fraud professionals, investors, and regulators as well as stakeholders of corporations by examining publicly available data and highlighting characteristics that can contribute to fraud.

INTRODUCTION

During the past few years, there has been substantial growth in the volume of literature related to fraud, with new insights revealed on the topic of fraudulent financial reporting. A 2008 study conducted on financial reporting fraud discovered that people in top management positions tend to have active involvement with the fraudulent act (Carcello et al. 2008). Additionally, another study conducted nine years earlier in 1999, revealed that firms involved in fraudulent financial reporting often have weak governance, such as an audit committee that only meets once a year or a deficiency in accounting as well as finance expertise (Beasley, et al. 1999). More research published on financial reporting fraud discovered that the most common account associated with fraudulent financial reporting is revenue manipulation (Asare and Wojcikiewicz 2020).

Previous literature on fraudulent financial reporting is very wide ranging. However, there is a large amount of detail on financial reporting fraud that remains to be investigated including the personal characteristics of individuals involved with fraudulent financial reporting. The individual who commits fraudulent financial reporting can be referred to as a fraud perpetrator. There is definitely a gap in the research when it comes to studying the characteristics of fraud perpetrators, and this void possibly is what led to a study in 2015, which found that CEO's who are narcissistic are more likely to be associated with fraud (Davidson et al. 2015). Another study, conducted in 2004, appears to argue that capability could be applied to the fraud triangle and actually should be considered a fourth element to the triangle's original three. The three dimensions of the well-publicized fraud triangle are opportunity, incentive, and rationalization. When these three items are present and surround the perpetrator, they help enable fraud. A 2004 study assesses whether the capability of those involved in committing fraud, could help separate companies that have a history of fraud occurring within their environment, from other firms that have no prior history of fraud (Wolfe et al. 2004). Capability includes such measures as the person's position and the function in which they work. This paper also evaluates whether personal capability interacts with certain attributes such as the duration of a fraud case, the amount of fraud, and whether the fraud committed was concealed from an internal audit.

The conclusions and results from this thesis should help those who are members of the fraud prevention and detection community as well as inform stakeholders of various characteristics that may be present in a fraud case. The study conducted during this thesis showcases how certain publicly available measures of capability can be used to better understand financial reporting fraud and ultimately deter and detect fraud as well as improve investors' and regulators' ability to evaluate the quality of a company's financial reporting (Asare and Wojcikiewicz 2020).

LITERATURE REVIEW AND RESEARCH QUESTION

In the most basic view, the concept of fraud has been defined as any and all means a person uses to gain an unfair advantage over another person (Romney 2018). There are several different types of fraud, however, this thesis is focused on fraudulent financial reporting. Fraudulent financial reporting can consist of acts such as intentional or reckless conduct, whether by an act or omission to act that results in materially misleading financial statements (Romney 2018). There are several different reasons why fraudulent financial reporting may occur within an organization.

The current literature published in the area of forensic accounting allows for the examination of fraud by investigating a vast range of human characteristics associated with financial reporting fraud. A study conducted in 2006, found that there is a positive association between equity incentives for those within top management and financial reporting fraud, as well as a temporal increase in equity incentives for periods prior to the fraud (Erickson et al. 2006). A follow up study conducted in 2019, revealed that the temporal increase in equity incentives for top management is much higher in firms that have a history of fraud occurring within their environment than firms that have no prior history of fraudulent acts, with the largest spread amongst the amount of equity incentives occurring in more recent years (Papakroni 2019).

Additional recent studies have attempted to link CEO narcissism to corporate performance and fraud. The challenge with these studies is how best to objectively capture the human attitude or characteristic of narcissism. Contrasting studies conducted in 2008 and 2009 respectively, found that over-confident CEOs have had a tendency to engage in more acquisitions, while the latter study observed that those CEOs who engaged in fraud were likely to have been underperforming compared to their counterparts within the industry (Malmendier et al. 2008-2009). A similar study conducted in 2015 concluded that executives who possessed the personality trait of narcissism are more likely to be associated with fraud (Davidson et al. 2015). The manner in which this particular study measured the human personality trait of narcissism included the physical area covered by the CEO's signature compared to the number of letters in his name, how often the CEO appears in the press, and other characteristics (Asare and Wojcikiewicz 2020). In general, the literature related to the business field identifies certain behavioral traits that are associated with how well a CEO performs in their position. The 2008 and 2009 study reveals that overconfident CEOs tend to engage in value-destroying acquisitions (Malmendier et al. 2008-2009). Another separate study showcases that an executive's overconfidence can be associated with greater risk taking and more frequent merger and acquisition activities (Cain et al. 2010). On the contrary to most studies referenced previously, the analysis in a 2011 study, discovered that it may not always be the case that all top managers involved in fraud were predestined to be fraudulent (Schrand et al. 2011). In fact, the study suggests that some financial reporting fraud cases begin as minimal attempts to slightly inflate earnings within GAAP, which then leads to overconfidence and results in subsequent downright fraud.

There have been other studies that must be highlighted as they examined the narcissistic personality trait that a CEO could possess and its impact on fraudulent financial reporting. The conclusions that resulted from a study completed in 2010, discovered that top management, as well as CEOs, influence the firm's voluntary accounting disclosures (Bamber et al. 2010). This is important because disclosures may become significant if there is the possibility of fraud actively occurring within the company (Asare and Wojcikiewicz 2020). A separate study conducted in 2010 revealed that individual managers play a significant role in

corporate tax avoidance (Dyreng et al. 2010). Thus, it is apparent that the fraud literature suggests that individual traits are a contributing factor when it comes to successfully executing or engaging in fraudulent financial reporting.

In addition to research previously conducted on the trait of narcissism, there is also literature that addresses the possibility of an addition to the fraud triangle. The basis of the fraud triangle is that there are usually three conditions present when fraud occurs. The three conditions which serve as the elements of the fraud triangle include an opportunity, a pressure, and a rationalization. However, in a 2004 study, the attribute known as capability is offered as a potential addition to the fraud triangle as a fourth element (Wolfe et al. 2004). The characteristics included within capability can be used to comprehend the fraudulent financial reporting process. Capability is an important dimension of fraud as some prospective perpetrators likely do not carry out their plans due to a lack of capability, as many perpetrators capitalize on their own positions within the corporate landscape to commit fraud. Some of the elements of capability include position, education, and the corporate department that they work under, such as accounting, finance, or human resources (Asare and Wojcikiewicz 2020).

While there has been extensive research conducted on financial reporting fraud, the topic is very broad and there are additional areas within the topic that could be researched more heavily. This study contributes to the understanding of fraud by examining if and how positions that fraud perpetrators work in, interact with certain fraud attributes such as the duration of the fraud, the fraud dollar amount, and whether the fraud was concealed from the audit. This research explores whether individual capability impacts those different fraud attributes. By examining these aspects present in a fraud case, it will help the fraud detection and prevention community understand how capability influences financial reporting fraud. Using publicly accessible data to showcase aspects of a fraud perpetrator's capability should enable investors and regulators to have more substantial basis when they evaluate the quality of a firm's financial reporting as well as how different organizational positions effect fraud.

RESEARCH DESIGN

This study is conducted with data provided by the Association of Certified Fraud Examiners Research Institute. Specifically, the database that is used includes the Securities and Exchange Commission litigation database which contains approximately 882 cases of financial statement fraud that occurred during a time span of 1985 through 2014. Specifically, the ACFE's database contains a multitude of Accounting and Auditing Enforcement Releases from the Securities and Exchange Commission or "SEC". These releases and the data points out the different positions that each fraud perpetrator holds within the organization. The Securities and Exchange Commission, is arguably the main federal agency that is tasked with combating and handling cases of fraudulent financial reporting. Originally created in 1934 after Congress passed the Securities Exchange Act, the SEC has handled numerous corporate accounting fraud cases and has ensured that companies offering securities for sale to the public must tell the truth about their business, the securities they are selling, and the risks involved in investing in those securities. Often, the SEC imposes civil penalties for companies involved with fraudulent financial reporting. In addition to containing cases of financial statement fraud, the database also contains asset misappropriation cases, however this study focuses on fraudulent financial reporting, thus the misappropriation cases are filtered out from the data using Microsoft Excel's sort and filter function.

Within the database there are specific characteristics that are examined during the study, including the time period of the fraud, the dollar amount of the fraud, and binary variables ranging from the fraud perpetrators position within the firm, to the type of misstatement, and whether the fraud was concealed from the company's internal auditors. A binary variable is represented in the database with a value of 1 or 0. A 1 indicates that the variable is present and a 0 indicates that the variable is not present. For example, a value of 1 shown in the concealed from audit column, indicates that the particular case of fraud was concealed from the audit, and a value of 0 indicates that it was not concealed from the audit. Similarly, a value of 1 in the "FRF Perp-CEO/COO/Pres" column, indicates that for that particular case of fraud, the perpetrator held a position as either Chief Executive Officer, Chief Operating Officer, or President. If the value was 0 it would indicate that the particular case of fraud was not

committed by someone who held those positions within the firm. In terms of the fraud perpetrator positions, this variable is used heavily throughout the study to assess the capability dimension of the research question. The different positions examined in this study include Chief Executive Officer, Chief Operating Officer, President, Chief Financial Officer, Controller, Chief Accounting Officer, and Director. The fraud perpetrator's position at the time they committed the fraud is measured by using publicly available data provided by the Association of Certified Fraud Examiners Research Institute, the ACFE ARI. The database contains three separate classifications of perpetrator's positions including "FRF Perp-CEO/COO/Pres", "FRF Perp-CFO/Controller/CAO", and "FRF Perp-Dir". All three of these positions are used during the study, to assess their impacts on various attributes such as the dollar amount of the fraud, the time period of the fraud, the type of fraudulent misstatement, and whether the fraud was concealed from the audit.

More specifically, the study employs the data analysis function of Microsoft Excel. First, using the descriptive characteristics aspect of data analysis showcases some basic elements of the data including the mean or average of the data, the median of the data set, the standard deviation of the data, the maximum as well as minimum values of the data set, and lastly, the count of the data. Also, it can reveal the percentage of time that a particular variable is present amongst the dataset. The descriptive characteristics are run on the dollar amount of fraud, the length of time of the fraud, the fraud perpetrator positions variables, and the type of fraudulent misstatement.

In addition to running descriptive characteristics, the study also includes the use of correlation analysis. Similar to descriptive characteristics, correlations are used via Microsoft Excel's data analysis function. The correlations function identify how strongly two different variables are related to each other and whether or not they share a linear relationship. The study contains a single correlation analysis consisting of several different variables including if the fraud was concealed from the audit, the duration of the fraud, and the type of fraudulent misstatement. These variables are compared to the fraud perpetrator's position to determine if there is any correlation or relationship between the perpetrator's position and these

characteristics of each fraud case. Basically, the correlation analysis does assist the examination of different fraudulent financial reporting variables and how they are related to each other (Appendix B – "Correlation Results").

Lastly, the study utilizes a regression analysis via Microsoft Excel's data analysis function. The regression analysis showcases three important items including t-statistics, p-values, and r-squared. The t-statistic highlights if the data sets being tested are related and impacts the probability value or p-value. The p-value or probability value showcases the probability percentage that the data set results are random. If a high t-value and a low p-value is displayed, it reveals that there is a strong relationship between the variables being examined. On the other hand, if a low t-value and a high p-value is presented, the results are likely to be random and there may not be a strong result within the data set. Importantly, with regressions, it is necessary that different variables are selected to serve as dependent variables and independent variables. The dependent variables or "y" variables for the study include the amount of the fraud and whether the fraud was concealed from the audit. The independent variables are the position of the fraud perpetrator, the amount of the fraud, the type of fraudulent misstatement, and the duration of the fraud. In total there are three separate regressions tested during the study (Appendix C – "Regression Analysis Results").

EMPIRICAL TESTS AND RESULTS

In addition to the following section, please see Appendices A, B, and C for statistical results.
The descriptive characteristics run during the study, reported in Table 1 of Appendix A, showcase that the average dollar amount of fraudulent financial reporting is approximately $394,679.36 out of 349 documented cases of fraudulent financial reporting where the dollar amount was determinable. Also, within Table 1 of Appendix A, there is the display of the median dollar amount of fraud, which was approximately $18,692,500. Also, within the same table, there are maximum, as well as minimum amounts of fraud which were approximately $27,583,000,000 and $14,000 respectively (Appendix A – Table 1). For the cases where the fraud amount was represented as "N/A", or was null, these fraud cases were filtered out of the data for this particular descriptive characteristic examination in order to prevent the statistics

being impacted by unknown or non-numeric values (Appendix A – Table 1). This is why there is a difference in sample size between many of the analysis tables presented in Appendix A. The sample size differs, based on the variables examined, because there was some incomplete information for certain variables such as null entries or non-numeric data for variables including dollar amount, duration of the fraud, and positions of the fraud perpetrator. Another descriptive characteristic that was conducted during the study, and is presented in Table 2 of Appendix A, indicates that the average length of time of a financial fraud case is approximately 2.15 years or approximately twenty-six months. The median duration of each financial statement fraud case, was approximately one year (Appendix A – Table 2). To note, the amount of different cases used in this descriptive characteristic study is approximately 462. The cases that are represented as "N/A" or null were filtered out to avoid the data being impacted by unknown values. Also, the length of time of fraud was calculated by taking the documented end year minus the documented start year, then adding one to eliminate the possibility of fraud cases where the case occurred within a year showing a value of 0. For example, if the start year was 2005 and the end year was listed as 2005, simply taking start year minus end year would indicate the fraud case had 0 years which does not accurately reflect the true occurrence of the fraud. Thus, adding 1 is necessary because it indicates that the fraud case occurred for at least some period of time even though it is within a year. (Appendix A – Table 2).

Another descriptive characteristic study was conducted and is presented in Table 3 of Appendix A, which includes evaluating the presence of the fraud perpetrators position during each fraud case. This study indicates that out of 468 cases of financial reporting fraud, approximately 63.25% were committed by a person in the position of Chief Financial Officer, Controller, or Chief Accounting Officer. Also, approximately 59.83% of the fraud cases were committed by a person in the position of Chief Executive Officer, Chief Operating Officer, or President, compared to approximately 29.10% of the cases being committed by a person in the role of Director (Appendix A – Table 3). To conduct this descriptive characteristics study, all non-numeric data within each position's column was filtered out in order to be able to run the descriptive characteristics. Also, to note, within Table 3 of Appendix A, the maximum

value displays a value of 200%, or because the fraud perpetrator's position is a binary variable, this would mean the variable is 2. With a value of 2, which is the case for both the "CEO/COO/President" and "CFO/Controller/CAO" columns, this indicates that there could be two different perpetrators possessing different titles within the same category (Appendix A – Table 2). For instance, a maximum value of 2 for the "CEO/COO/President" column, may indicate that there were cases of fraud where there was both the CEO and COO or COO and President, actively involved in committing the fraud. Another descriptive characteristic study was conducted on the type of fraudulent misstatement and is represented in Table 4 of Appendix A. Table 4 of Appendix A indicates that out of 470 cases of fraudulent financial reporting, 72.34% were related to an income or stockholder's equity overstatement, 53.40% were related to a revenue overstatement, 31.49% were an expense overstatement, and 30.64% can be tied to an asset overstatement. The other types of fraudulent misstatements accounted for small percentages and were less frequent in nature (Appendix A – Table 4). The final descriptive analysis, presented in Table 5 of Appendix A, is very similar to that of Table 1 in Appendix A, except for the fact that it does not contain the top or bottom 15% of dollar amounts that were present in the original database. To filter out the top and bottom 15% of all dollar amounts, the study used Microsoft Excel's rank and percentile function to determine the dollar amounts and their corresponding percentiles within the data set. Importantly, 15% was chosen as the cutoff percentile because it was the lowest percentile that allowed for elimination of extreme outliers within the study and still have suitable data for regression analysis. As displayed in Table 5 of Appendix A, it appears that the average dollar amount of the fraud cases within the middle 70% of the original data, is approximately $47,654,230. There is still a large variance within this data set because the median is only approximately $18,185,000 and the standard deviation is quite large at approximately $71,730,030 (Appendix A – Table 5). The median has stayed fairly consistent with the descriptive characteristics for the whole data set displayed in Table 1 of Appendix A, and the standard deviation is much less than it is in Table 1 of Appendix A, thus it is possible for the top and bottom 15^{th} percentiles to be taken out of the data for further robust analysis, when necessary (Appendix A).

In addition to several descriptive characteristics being analyzed, the overall study also employed a single correlation to indicate how any two major variables of the study can be related to each other. The correlation table presented in Appendix B, showcases that the correlation was used to compare the fraud perpetrator's position to numerous characteristics present within the study including whether the fraud was concealed from the audit, the dollar amount of the fraud, the duration of the fraud, and the type of fraudulent misstatement. The first variable that was compared, listed in the second row of the correlation table in Appendix B, was the fraud perpetrator's impact on whether the fraud was concealed during an internal audit. This correlation indicates that there is a significant positive relationship between the Chief Financial Officer/Controller/Chief Accounting Officer's involvement in the fraud case, and the fraud being concealed from an internal audit. The other positions also indicate a moderate positive relationship between their involvement and concealing the fraud from the audit (Appendix B – Table 1).

The next correlation listed in the third row of Table 1 in Appendix B, was between the fraud perpetrator's position and the fraud dollar amount. This correlation reveals how the position of a perpetrator impacts or does not impact the fraud dollar amount. The results indicate that the strongest positive correlation between the fraud dollar amount and position occurs when the Director is involved in the fraud. Other results within this same correlation indicate that there is some positive correlation between dollar amount of the fraud and Chief Executive Officer/Chief Operating Officer/President involvement. This means that for both categories of positions, when they are present in a fraud case, the dollar amount is likely to grow in size (Appendix B – Table 1).

Another correlation conducted during the study displayed in Table 1 of Appendix B was between the duration of the fraud and the fraud perpetrator's position. According to the results, there is a slight positive relationship between the time period of fraud and the Chief Executive Officer, Chief Operating Officer, President as well as Director's involvement. These results illustrate that when the fraud perpetrator holds any of these titles within the firm, the length of time of the fraud may increase slightly. The other position category

including Chief Financial Officer/Controller/Chief Accounting Officer indicates a slight negative relationship, which may mean that when the fraudster holds those positions the length or duration of the fraud is a lot shorter or even that the length of time may vary and isn't closely associated with those specific positions' involvement (Appendix B – Table 1).

The final aspect of the correlation analysis displayed in Table 1 of Appendix B examines the relationship between the type of fraudulent misstatement and the fraud perpetrator's position. This correlation highlighted that there was a significant positive relationship between a revenue overstatement as well as expense understatement and the Chief Financial Officers/Controllers/Chief Accounting Officer's involvement. This means that it is more likely that a revenue overstatement as well as expense understatement will occur if the fraud perpetrator holds the CFO/Controller/CAO position within the company. Also, it appears that a revenue overstatement has a slight positive correlation with other positions of the fraud perpetrator including CEO/COO/President as well as Director (Appendix B – Table 1). There is also a significant finding within Table 1 of Appendix B, when the type of fraudulent misstatement is an income statement or stockholder's equity overstatement. In particular, the relationship between the involvement of the CFO/Controller/CAO and this type of fraudulent misstatement is considerably high. The finding means that those who hold the CFO/Controller/CAO positions are likely to have influence on an equity or income statement overstatement. Also, Table 1 of Appendix B indicates that the same is true when a Director is involved in a fraud case. Ultimately, if the fraud perpetrator holds either of these positions within a company, a stockholder's equity or income statement overstatement is likely to occur (Appendix B – Table 1).

The last element within the study was running the regression analyses. In total, there were three regression analyses used in this study and the results are presented in Tables 1 and 2 of Appendix C. Table 1 of Appendix C shows the first regression analysis, which was run and included the concealed from the audit binary variable serving as the dependent variable and the independent variables ranging from the positions of the fraud perpetrator, to the dollar amount of the fraud, and the time period of the fraud. There were several significant p-values

that were below 0.05 in Table 1 of Appendix C. From this regression, there was a significant p-value of .04 for the "FRF-Director" variable (Appendix C – Table 1). This indicates that the influence that the Director may have on concealing the fraud from the audit, is not solely random. The p-value of approximately.0395 indicates that there is less than 4% chance that the Directors involvement does not contribute to the fraud being concealed within the audit (Appendix C – Table 1). In fact, they are more likely to be involved in a fraud case where there is concealment from internal auditors. Additionally, the p-value for "FRF-Perp CFO/Controller/CAO" was 0.0001 which indicates that it is highly likely that the CFO/Controller/CAO involvement in fraud contributed to it being concealed from the audit. Other position specific p-values in this regression were not significant but that could be because most of the variables in the regression such as type of misstatement or amount of fraud are either binary or have a large variance respectively (Appendix C – Table 1). In this same regression, the amounts as well as the duration of the fraud have insignificant p-values, which may indicate that there is not as strong of a relationship between those two variables and whether the fraud was concealed from the audit (Appendix C – Table 1). It is important to note that a logistic regression using a platform such as SAS Enterprise Premier, may yield more rigorous or robust inferences between these variables. However, for this study, a Microsoft Excel regression was chosen to get a general sense of the possible relationship that these variables share.

The other regression analysis that was conducted in this study is presented in Table 2 of Appendix C. This regression analysis included the dollar amount of the fraud as the dependent variable, and independent variables such as the position of the fraud perpetrator, the duration of the fraud, and the type of misstatement. The p-values presented in Table 2 of Appendix C were statistically insignificant in this regression as they were above .05. However, it can be stated that according to the descriptive characteristics conducted on the database, there is a large variance amongst the dollar amounts. Specifically, according to Table 1 of Appendix A, the standard deviation of the dollar amount of fraud is slightly over $1.8 billion, which is extraordinarily high. Also, many of the variables used in this regression were binary, including the type of fraudulent misstatement and the position of the fraud perpetrator. The

fact that the type of fraudulent misstatement and position variables are binary, may cause the p-values to weaken, as there are only two values of 1 and 0 present for both variables. The regression results would need to be compared to the descriptive characteristics and correlation outcomes in order to reach legitimate conclusions about the relationship of capability on fraud dollar amounts, which is completed in the discussion and conclusion section of this thesis.

The last regression analysis in the study, displayed in Table 3 of Appendix C, is a more robust version of the regression where the dollar amount of fraud is the dependent variable and there are independent variables such as the position of the fraud perpetrator, the duration of the fraud, and the type of misstatement. The regression analysis conducted in Table 3 of Appendix C is exactly the same as Table 2 of Appendix C, except for the fact that the top and bottom 15% of the fraud dollar amounts contained in the original database were filtered out. The removal of the top and bottom 15% of dollar amounts creates an environment where the study contains little to no extreme outliers; these extreme outliers may have skewed or influenced the results achieved in Table 2 of Appendix C. Importantly, the study employs the 15^{th} percentile as the cutoff limit because there was great variance when other percentiles were chosen and the R-Squared value was continuously negative when other percentiles were used for the cutoff limits, which is not suitable for solid analysis. As the regression analysis conducted in Table 3 of Appendix C displays, there are three significant p-values within the data (Appendix C – Table 3). First, the duration of the fraud variable has a significant p-value of .0076 which indicates that there is likely a relationship between the dollar amount of the fraud and the duration of the fraud (Appendix C – Table 3). This is not a surprise as practically it makes sense that as the time period of fraud increases, the amount of the fraud would also increase. This same regression analysis conducted in Table 3 of Appendix C, showcases that both an expense understatement and an asset understatement have significant p-values of .0227 and .0392 respectively (Appendix C – Table 3). These p-values may point towards a relationship between these specific types of fraudulent misstatements and the dollar amount of the fraud case. The other variables present within this regression analysis did not appear to have significant p-values but that could still be due to the large range of the dollar amount data and the fact that many of the variables are binary. Ultimately, the results of each

regression analyses, must be compared to the other types of analysis including correlations as well as descriptive characteristics, which is described in the next section.

DISCUSSION AND CONCLUSION

The results of the data analysis demonstrate how capability or a person's position impacts several characteristics of a fraud case. Notably, the descriptive characteristics, correlations, and regressions, appear to have a common theme that although Directors may not be involved in many fraud cases (i.e. approximately 29.10% of the time, compared to CEOs or CFOs who were involved 59.83% and 63.25% of the time), when they are involved they can have a large impact on variables such as dollar amounts of the fraud and potentially concealing the fraud from the audit (Appendix A – Table 3). It is not surprising that Directors not commonly involved in fraud cases compared to their counterparts because Directors are not in a position of running the company on a daily basis, as are the CFO, COO, or CEO. Moreover, it should not be a shock that those in a position of Chief Executive Officer, Chief Financial Officer, Chief Operating Officer, and President are more commonly involved and have a larger influence on items such as types of fraudulent misstatements because they are in charge of handling more daily operations of the firm and can influence specific accounts on the company's financial statements in order to make the company appear to be in a better financial position than they actually are.

Although most of the p-values and t-statistics of the regression analyses are not statistically significant, this can be attributed to the fact that most of the variables are binary (Appendix C). With them being binary, the variable is either 0 or 1 which does not leave much variance for regression analysis as there is not much change between the variables within the data set. This could be why the p-value shows that the data is most likely random. For instance, if most of the fraudulent financial reporting is conducted by the top executives at the company, then the binary variable for fraud perpetrator would be 1 for most of the data set. This does not reflect much variance between the data, causing the regression to indicate insignificant outcomes. Also, regarding the fraud dollar amount regression, even though dollar amounts are not binary and do certainly vary, when examining the descriptive characteristics, it is

apparent why the p-value does not indicate significant results. Specifically, the mean dollar amount is $394,679,073.36 while the median is only $18,692,500, and the standard deviation is quite high at $1,817,254,900.62 (Appendix A – Table 1). With such a high variation, it can make it hard for the regression to demonstrate significant results and can actually cause a lack of significant results as it will show smaller t statistics as well as large p values. This is why the third regression analysis was conducted in Table 3 of Appendix C because the top and bottom 15th percentiles were removed from the data in order to have a more robust regression that is not heavily skewed by extreme outliers. This regression highlights that there is indeed a strong relationship between the dollar amount of the fraud case and the time period of the fraud. It can be said that the dollar amount descriptive characteristics run on the data without the 15th percentiles display a similar median to the descriptive characteristics run on the total dollar amounts of the entire data set. Thus, the validity of the data should not be questioned even though there was a removal of some of the most extreme outliers (Appendix A).

Furthermore, the correlations and the descriptive characteristics run during the study indicate that the data is not totally random and there are significant results from those respective analyses. For instance, during the correlation analyses presented in Table 1 of Appendix B, it is clear that both the type of fraudulent misstatement, such as revenue overstatement or income/stockholder's equity overstatement, are impacted by the fraud perpetrator's position (Appendix B – Table 1). Moreover, it is likely, according to the correlation analysis conducted during the study, that the Chief Financial Officer's/Controller's/Chief Accounting Officer's involvement with fraud can be tied to stockholder's equity overstatements and revenue overstatements. Given the previous literature, it confirms that Revenue Overstatements are much more common and those in a position such as CFO or CEO who engage in fraud would do so due to the potential equity incentives that come with higher earnings (Erickson 2006). Similarly, this can explain the results received in other correlations where the study and correlation analysis conducted appears to showcase that those in a position such as CFO/Controller/CAO or CEO/COO/President are much more likely to conceal their fraudulent acts from the internal auditors. An interesting finding however, is that according to Table 1 in Appendix B, the Director's involvement in the fraud case is actually

significantly more positively correlated with an income statement or stockholder's equity overstatement than the involvement of either the CEO/COO/President (Appendix B – Table 1).

Ultimately, this study reveals important points for companies who are in operation today and are trying to prevent as well as detect fraud within their environment. The study shows that companies should be aware that commonly, those in the CEO or CFO positions, can easily conduct as well as conceal fraud. This means that companies, especially the internal auditors and audit committee, should be aware that the CEO or CFO cannot always be trusted in their position. There should be a very close and detailed examination of their actions. In addition to the CEO or CFO, internal auditors should be aware that Directors can commit fraud, and if they do, it often results in higher dollar amounts. According to the data, they are more likely to conceal their fraudulent acts from internal auditors. This means that Directors' actions should also be closely monitored by internal auditors as well as the audit committee. The study also illustrates the importance of catching fraud early if possible. As time goes on, the fraudulent dollar amount tends to grow and can reach extraordinarily high amounts into the millions and billions. However, if caught at an early stage, the dollar amount and financial loss the company suffers should be, at least most of the time, less than the amount if fraud stretches on for longer than 2 years. Lastly, the results of the study, and the database used, highlight important lessons that can be learned from each case of fraud. That is, fraud does not discriminate based on the size of the firm or if the firm is in good financial standing in terms of the market. The study and the database reveals that fraud can occur anywhere and at any time. Moreover, those in high level positions within a company can become engaged in fraud and have a significant influence on different aspects of fraud. Overall, this thesis and the results contained within it, should help companies in their efforts to prevent or detect fraud from occurring within their organization.

OPPORTUNITY FOR FURTHER RESEARCH

A further study into this topic could consist of a matched pairs design. The matched pairs design could consist of each firm with a known case of fraud occurring within their

environment compared to a firm that does not have any prior history of fraud. The companies with fraud and those who have managed to prevent fraud, would be matched together and compared based on size and industry. A set of variables that capture a manager's capability to commit fraud could serve as the primary test variables. Secondary test variables may include attributes of the firm's governance and controls environment, such as the proportion of independent directors on the board and the power of the CEO. This study could serve to point out differences between firms that have fraud in their environment and firms that have managed to keep fraud from occurring (Asare and Wojcikiewicz 2020).

Also, an investigation into different characteristics of fraud between its two main types, fraudulent financial reporting and asset misappropriation, may be beneficial for any industry. Although this thesis did not address asset misappropriations, these cases include theft of company assets by employees. For instance, a study examining the comparison between the duration of a case of financial statement fraud versus employee theft would be interesting. Similarly, an analysis between whether the financial statement fraud versus misappropriation case was concealed from an internal audit would be beneficial for companies who want to identify how they can prevent all types of fraud from occurring. Similar to this study, the future research may focus on the position that the person holds within a firm when they commit an asset misappropriation and compare it to the position that a fraudulent financial reporting perpetrator holds. Although instinctively, it would be anticipated that the dollar amount of an asset misappropriation would be less than the dollar amount in a case of fraudulent financial reporting, it would still be an interesting avenue to examine for a potential researcher.

Another investigation that may be hard to obtain but would be unique, is examining the demographic and socioeconomic characteristics of fraud perpetrators in general, regardless of asset misappropriations or fraudulent financial reporting offenders. For instance, a study could look into the income level of the fraudster, or possibly their educational history, and see if there is any correlation between those who commit fraud versus those who act with integrity. Also, items that could be examined in a study such as this, could be the perpetrator's criminal

history as well as what happens after they are found committing fraud. For instance, is there a tendency to reoffend, do they continue to work in a corporate world, or do they face a total change in their careers as a result of being caught committing their fraudulent act? These answers could be beneficial to the fraud detection and prevention community.

Ultimately, the topic of fraud examination is seemingly endless. As time goes on, more fraudulent acts are discovered and perpetrators uncover new ways to carry out schemes at the corporate level. That is why, there are certainly possibilities for further research into the topic of fraud and perhaps there always will be things to uncover regarding the subject of fraud. Therefore, many opportunities exist for additional analysis and academic research on this topic.

APPENDICES

Appendix A – Descriptive Characteristics Results (Source: Excel Analysis of ACFE Database)

Table 1

Table 2

Table 3

	By Position Descriptive Characteristics (% of Time Involved)		
	FRF Perp-CEO/COO/Pres	*FRF Perp-CFO/Controller/CAO*	*FRF Perp-Dir*
Mean	**59.83%**	**63.25%**	**29.06%**
Median	100.00%	100.00%	0.00%
Mode	100.00%	100.00%	0.00%
Standard Deviation	49.51%	49.14%	45.45%
Minimum	0.00%	0.00%	0.00%
Maximum	200.00%	200.00%	100.00%
Count	468	468	468

Table 4

	Type of Fraudulent Mistatement (% of Time Occurred)									
	Revenue O/S	*Revenue U/S*	*Expense U/S*	*Expense O/S*	*Asset O/S*	*Asset U/S*	*Liability U/S*	*Liability O/S*	*Income / SE O/S*	*Income / SE U/S*
Mean	**53.40%**	0.64%	**31.49%**	1.70%	**30.64%**	2.77%	7.66%	1.91%	**72.34%**	1.28%
Median	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
Mode	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
Standard Deviation	49.94%	7.97%	46.50%	12.95%	46.15%	16.42%	26.62%	13.72%	45.25%	11.24%
Minimum	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Maximum	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	200.00%	100.00%
Count	470	470	470	470	470	470	470	470	470	470

Table 5

Appendix B – Correlation Results (Source: Excel Analysis of ACFE Database)

Table 1

	Correlation Analysis		
	FRF Perp-CEO/COO/Pres	***FRF Perp-CFO/Controller/CAO***	***FRF Perp-Dir***
Concealed From Audit	**0.12**	**0.22**	**0.15**
Fraud Dollar Amount	0.03	0.00	0.08
Time Period of Fraud	0.05	-0.14	0.02
Revenue O/S	**0.17**	**0.22**	**0.16**
Revenue U/S	-0.01	-0.03	-0.05
Expense U/S	0.05	**0.16**	0.03
Expense O/S	-0.03	-0.04	0.01
Asset O/S	0.03	0.07	0.09
Asset U/S	-0.10	0.02	0.01
Liability U/S	-0.09	0.10	0.05
Liability O/S	0.02	0.10	0.06
Income / SE O/S	0.07	**0.24**	**0.12**
Income / SE U/S	0.00	0.09	-0.02

Appendix C – Regression Analysis Results (Source: Excel Analysis of ACFE Database)

Table 1

Regression Analysis - Concealed from Audit (Dependent Variable) and Position, Duration, Amount (Independent Variable)

Table 2

Regression Analysis – Dollar Amount (Dependent Variable) and Position, Duration, Type of Misstatement (Independent)

Table 3

Amount (Dependent) and Position, Duration, Type of Misstatement (Independent) *No Top or Bottom 15% Dollar Amount*

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