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MONTEREY, CALIFORNIA

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**MBA PROFESSIONAL REPORT**

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## **AUDITABILITY IN THE U.S. NAVY: A KNOWLEDGE ASSESSMENT OF THE CONTRACTING WORKFORCE**

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**December 2016**

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THE CONTRACTING WORKFORCE**

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# **AUDITABILITY IN THE U.S. NAVY: A KNOWLEDGE ASSESSMENT OF THE CONTRACTING WORKFORCE**

## **ABSTRACT**

The Department of Defense (DOD) has some problems in its contracting workforce that make the department susceptible to procurement fraud. In fiscal year (FY) 2014, \$285 billion was spent on federal contracts. In FY 2015, the DOD increased its obligation to \$290 billion. The DOD committed more money than all other government agencies combined. In total, the U.S. Department of Justice in its annual evaluation stated that there were 4,801 United States government-wide fraud investigations in 2015.

The purpose of this research was to evaluate the knowledge level of Navy contracting professionals regarding procurement fraud. The research method included a survey that contained questions regarding contract management processes, internal control components, and procurement fraud schemes.

The results of this research identified differences in levels of fraud knowledge and perceptions of an organization's vulnerability to procurement fraud. The other two aspects of auditability are effective internal controls and capable processes. Having strong auditability in an organization would help to identify susceptibilities to procurement and assist in reducing vulnerabilities. Based on the results of the survey, recommendations are provided to the Navy for improvement of organizational auditability related to contracting.

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## LIST OF ACRONYMS AND ABBREVIATIONS

ACFE	Association of Certified Fraud Examiners
ACO	Administrative Contract Office
CAO	Contract Administration Office
CLM	Continuous Learning Module
CLP	Continuous Learning Points
COR	Contracting Officer's Representative
COSO	Committee of Sponsoring Organizations
CPARS	Contractor Performance Assessment Reporting System
CRS	Congressional Research Service
DAU	Defense Acquisition University
DAWIA	Defense Acquisition Workforce Improvement Act
DOD	Department of Defense
DODIG	Department of Defense Inspector General
DOJ	Department of Justice
FAR	Federal Acquisition Regulation
FEDBIZZOPS	Federal Business Opportunities
FFP	Firm Fixed Price
GAO	Government Accountability Office
LPTA	Lowest Price Technically Acceptable
NYSICA	New York State Internal Control Association
TCO	Termination Contract Officer
USAID	United States Agency for International Development
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology and Logistics

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# **I. INTRODUCTION**

## **A. BACKGROUND**

The opportunity to commit procurement fraud in the Department of Defense (DOD) is becoming a greater concern as the government continues to reduce the DOD's budget. This budget reduction decreases the quantity of funded future projects, supplies, and services. Fraud within the DOD increases the costs of goods and services. If an agency prosecutes fraud, then fraud penalties "inefficiently increase suppliers' costs and decrease competition among military suppliers" (Karpoff, Lee, & Vondryk, 1999, p. 5). Classical economist Adam Smith stated that in competition "the number of rivals, potential as well as present, must be sufficient to eliminate [or reduce] gains" (Stigler, 1957, p. 2). Therefore, the more contractors are convicted of fraud, thus becoming ineligible for government contracts, the less competitive the market becomes, which would inevitably lead to an increase in prices. Similarly, research supports this concept as "governments in the Asia-Pacific region generally pay about 20% to 100% more for public goods and services due to procurement fraud" (Tan, 2013, p. 2).

Contracting professionals, as well as all acquisition personnel, need to be diligent in reducing opportunities for procurement fraud. Contracting personnel duties include securing the right contracts and ensuring the processes of the contracts are meeting specific standards established by laws and regulations. The contracting agencies responsible for these contracts must have the appropriate training to ensure government funds are not being wasted or abused.

## **B. PURPOSE OF RESEARCH**

The purpose of this research is to evaluate the knowledge level of Navy contracting professionals regarding contract management processes, internal control components, and procurement fraud schemes. The research method includes a survey that contains questions regarding contract management processes, internal control components, and procurement fraud schemes. The results may identify differences between levels of fraud knowledge and perceptions of an organization's vulnerability to

procurement fraud schemes. Based on the results of the survey, recommendations will be provided to the Navy for improvement of organizational auditability related to contracting.

### **C. RESEARCH QUESTIONS**

Chang (2013) developed the following research questions that have been previously used for the Army and the Air Force:

- (1) **“What is the [Navy’s] contracting professionals’ knowledge level of procurement fraud as related to the contract management process, internal control components, and procurement fraud schemes?” (p. 2)**
- (2) **“What is the [Navy’s] contracting professionals’ perception of procurement fraud vulnerability as related to the contract management process, internal control components, and procurement fraud schemes?” (p. 2)**

### **D. BENEFITS AND LIMITATIONS**

This research will examine the procurement fraud knowledge level of contracting professionals within a United States Navy’s contracting center and will identify any areas within the contract management process and internal controls that are perceived by the contracting professionals to be vulnerable to fraud. One of the benefits could be that the results from the research may indicate whether or not contracting professionals need additional procurement fraud training to ensure competency in the Navy’s contracting workforce.

Another benefit to this research is that the data from this study can be compiled with other fraud research studies to assess the vulnerabilities for procurement fraud within the DOD. The data may also be able to provide a baseline to measure and possibly target areas for improvement within contract management processes and internal controls within the Navy and DOD.

This study has several limitations. One limitation is using an online survey method. To accurately assess the knowledge level of contracting professionals, a proctored survey may provide more accurate results. Unlimited access to online search engines enables survey participants to find an answer to virtually any question. However, the survey

questions in this research were originally developed by Chang. The questions did not come from a database. Additionally, every answer does not represent the same weight. For instance, one may consider “agree” of the same value as “strongly agree,” as both answers are subjective. (Wyse, 2012).

Furthermore, people may not like acknowledging or reporting fraud for fear of retribution. Having contracting professionals answer an anonymous survey honestly could create mistrust from their leadership even though the data is aggregated. People may not like the negative perception associated with fraud in their organization.

## **E. IMPORTANCE OF THE RESEARCH**

Every organization should ensure the competency of its workforce. Having competent personnel in an organization helps ensure detection and aids in limiting contracting fraud. The objective of this research is to assess the Navy’s contracting professionals’ knowledge level of procurement fraud. This research is significant because auditability in organizations is important. The DOD is trying to ensure all of its services are auditable. For an organization to be auditable, it should ensure its people are competent, processes are capable, and internal controls are effective. Auditability will be discussed more in Chapter II.

The results of this research may indicate whether more fraud training is needed throughout the Navy’s contracting workforce. Another result may indicate whether or not the DOD should be focused more on the vulnerabilities in the defense and acquisition process. Attorney Laura Duffy from the United States Department of Justice (DOJ) said “The more we learn about the extent of the greed and corruption, the more determined we are to eviscerate it” (DOJ, 2015, para. 3). A Navy contracting organization can identify possible areas of procurement fraud vulnerabilities by volunteering to participate in this survey.

## **F. METHODOLOGY**

The research methodology consists of a literature review discussing auditability theory and the three aspects of competent personnel, capable contracting management

processes, and effective internal controls. An online survey was deployed to a Navy organization. The results of the survey assessed the competency level of the contracting workforce in the areas of contracting processes, internal controls, and procurement fraud schemes. Based on the analysis from the survey responses, recommendations are provided to the Navy contracting command regarding procurement fraud competence of the contracting workforce.

## **G. ORGANIZATION OF REPORT**

This report is organized in five chapters. Chapter I provided an introduction covering a background of DOD contracting, the purpose of the research, research questions, benefits and limitations, the importance of the research, and the methodology. Chapter II consists of a literature review of DOD contracting, auditability theory, competent personnel, capable contract management processes, effective internal control components, and procurement fraud scheme categories. Chapter III discusses the methodology used in the utilization of a previously developed assessment tool, the deployment of the survey, and the analysis of the survey results. Chapter IV presents the findings from the demographic questions, findings from the knowledge-based questions, analysis of the organizational questions, and recommendations for improvement based on the analysis. Chapter V includes a summary, conclusion, and areas for further research.

## **H. SUMMARY**

The DOD is one of the largest government contracting agencies in the world, and the opportunity for fraud to be committed is an inherent risk whenever money is involved. This risk increases if there are poor processes in place. This chapter provided the background, the purpose, research questions, benefits and limitations, importance, methodology, and the organization of this research. The next chapter consists of a literature review of DOD contracting and auditability theory, which consist of competent personnel, capable contract management processes, and effective internal control components. The chapter concludes with a discussion of procurement fraud scheme categories.

## **II. LITERATURE REVIEW**

### **A. INTRODUCTION**

This chapter first reviews the literature on Department of Defense (DOD) contracting, the impact of fraud on DOD contracting, current problems in defense contracting, and the DOD response to procurement fraud. Next, the chapter expands on auditability theory while reviewing the competency of personnel, the defense contracting process, and internal controls. The chapter concludes with the six most common fraud schemes. This literature review examines the experts in the field and current research regarding these various subjects. Linking these areas together will illustrate modern defense contracting and possible weaknesses in defense contracting. An overview of DOD contracting is discussed in the next section.

### **B. DEPARTMENT OF DEFENSE CONTRACTING**

DOD contracting deals with a significant budget and significant issues. In fiscal year (FY) 2014, the DOD alone “obligated more money on federal contracts (\$285 billion) than all other government agencies combined” (Swartz, Ginsberg, & Sargent, 2015, p. 2). In 2015, the DOD obligation increased to \$290 billion and accounts for over half of the \$560.4 billion DOD budget (Harrison, 2014). The Department of Justice reported 4,801 fraud investigations in 2015 (2016). The Department of State Inspector General (OIG, 2015) indicates Defense contracting fraud and mismanagement accounts for questionable costs in the DOD in the amount of \$485.5 million, and \$1.84 billion was over-obligated (2015).

#### **1. Procurement Weaknesses**

The DODIG and Government Accountability Office (GAO) have reported on possible procurement weaknesses in Defense contracting. The GAO listed “defense contract management as a high risk due to their greater vulnerability to fraud, waste, abuse and mismanagement” and has listed Defense contracting as high risk since 1992 (Government Accountability Office [GAO], 2013, p. 2). The GAO identifies the four

segments of contract management that still face challenges as (1) a small acquisition workforce, (2) difficult contracting techniques, (3) several issues with the acquisition of services, and (4) limited support for operational contracting (GAO, 2013). The GAO (2015) considers the amount of dollars spent and the volume of transactions the DOD processed as an issue because of the lack of skilled personnel in the acquisition workforce.

Some of the problems in DOD contracting include an increasing acquisition force, decreasing contracting offices, and the lack of critical training. The DODIG summarized specific deficiencies over the course of seven fiscal years as 467 contract process deficiencies ranging from the more prevalent acquisition planning deficiencies to the rarer competition deficiencies during solicitation (Hidaka & Owens, 2015). The six contracting processes ranked from highest to lowest deficiencies are “contract administration, procurement planning, solicitation planning, source selection, contract closeout, and solicitation” (Hidaka & Owens, 2015, p. 50).

## **2. DOD Response to Procurement Weaknesses**

The DOD responded to the GAO’s high risk assessment and the DODIG’s contracting process deficiencies by providing more training to contracting professionals and additional guidance on contracting processes. As the DOD addresses the competency of contracting professionals and contracting processes, the results should reduce deficiencies. The Under Secretary of Defense for Acquisition, Technology and Logistics’ (USD[AT&L]) most substantial correction to deficiencies was the Better Buying Power initiative. Five of the seven principles in the Better Buying Power initiative focus on process improvements for the acquisition workforce. The remaining principles, “improve tradecraft in acquisition of services” and “improve the professionalism of the total acquisition workforce,” focus on training of personnel (Under Secretary of Defense for Acquisition, Technology and Logistics [USD(AT&L)], 2016, para.1). In addition, Castillo and Flanigan’s (2014) research concluded that the DOD had increased acquisition workforces, but it had never included additional required training for the workforce or Contracting Officer’s Representatives (CORs).

The solution does not solely rest on developing competency in contracting personnel. Rendon and Rendon propose that the “DOD [emphasizes] procurement training of its workforce” but that it is not “placing an equal emphasis on its procurement processes or internal controls” (Rendon & Rendon, 2015, p. 711). In 2011, the USD(AT&L) Ash Carter instituted other requirements, such as posting a DODIG Fraud Hotline Poster, establishing and maintaining internal controls, notifying the Office of the Inspector General whenever the organization becomes aware of fraud, and instituting additional required ethics training (USD[AT&L], 2011). In response to several department-wide issues concerning fraud, waste and abuse, Congress directed the creation of a Continuous Learning Module (CLM) 049—Procurement Fraud Indicators (Castillo & Flanigan, 2014). These responses from Congress and AT&L responses attempted to address procurement contracting weaknesses but failed to address the deficiencies that the weaknesses had created.

### **3. Implications of Contract Deficiencies**

Denis (2009) notes two issues in the contracting profession: a growing list of responsibilities and a shortage of trained personnel. This imbalance may inevitably slow procurement process and create more fraud opportunities. Despite the USD(AT&L)’s many new requirements imposed on the contracting workforce, in 2011 Carter remarked “it is not clear, however, that these remedies are sufficient” (USD[AT&L], 2011, p. 11). Between 2011 and 2015, suspensions for contractors almost doubled from 74 to 124, and debarments increased by almost 150% from 130 to 179 (OIG, 2015). These increases in suspensions and debarments may constrict future competition and possibly drive up prices.

Despite the apparent increases in suspensions and debarments, defense hotline calls dropped from 9,340 in 2011 (DODIG, 2011) to 5,932 in 2015 (OIG, 2015). The researchers contend that this decrease indicates that either fraud is detected during external audits vice during the contracting process, or that DOD is taking a harder stance on contractor misconduct. Furthermore, Castillo and Flanigan (2014) summarize that limited fraud indicators and internal control training taught within Defense Acquisition

University contribute to GAO's high risk designation. This lack of training may cause contracting personnel to miss signs of fraud. Competent personnel is one aspect of auditability in organizations. In total there are three aspects comprise auditability theory, which are discussed in the next section.

### **C. AUDITABILITY THEORY**

Auditability theory began with research conducted by Power. Power addressed a need for independent authentication that "has the virtues of objectivity, publicity, and replicability" (Power, 1996, p. 289). Rendon and Rendon view auditability as a transformation of an organization when "organizations establish data collection practices and systems of documentation to make them auditable" (R. G. Rendon & Rendon, 2015, p. 713). When effective auditability is in place, an organization is more capable of detecting and deterring fraud.

Weigand, Johannesson, Andersson, Bergholtz, and Bukhsh (2013) divided auditability into four separate audit focused levels shown in Table 1. The levels begin individually with tedious labor intensive transaction based audit types and ultimately reach management via accounting information systems. Weigand et al. (2013) contend that "if the manager is in control, by implication the validity of the accounts and the norm compliance of the agent performance are guaranteed" (p. 6). This guarantee allows transparent audits to infiltrate all levels and ensure auditability. Using the four-level auditability framework, organizations can have multiple internal controls in place and achieve a higher level of auditability (Weigand et al., 2013).

Table 1. Main Auditability Levels. Source: Weigand et al. (2013, p. 5).

	AUDIT FOCUS	INFRASTRUCTURE	AUDIT TYPE	PRIMARY STATEMENT
1	operational process	physical environment, possibly IT-based	transaction-based	self-report
2	accounts	(a) tracing infrastructure (b) accounting information system	system-based	self-report
3	operational policy	(a) policy (GRC) information system (b) enforcement infrastructure	risk-based	accounting information system
4	management process	Management Information System	governance-based	accounting information system

In addition to auditability occurring at different levels of an organization, auditability requires three aspects to be effective. Rendon and Rendon show in Figure 1 the auditability triangle concept as a synergy of “competent personnel, capable processes, and effective internal controls” (J. M. Rendon & Rendon, 2015, p. 1).

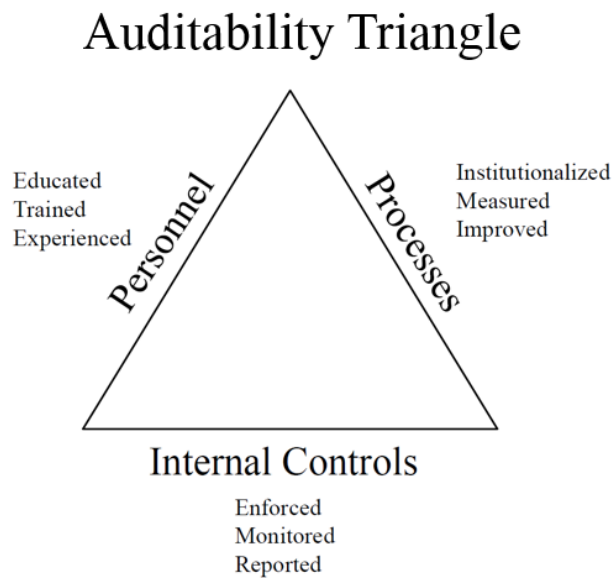


Figure 1. Auditability Triangle. Source: R. G. Rendon & Rendon (2015, p. 716).

Auditability flows from the lowest level up. Effective auditability occurs when such synergies are in place involving personnel, processes, and internal controls. The first aspect of auditability is competent personnel, which is discussed in the next section.

#### **D. COMPETENT PERSONNEL**

Rendon and Rendon define competent personnel as those with “necessary education, training, and experience requirements for each functional area” (R. G. Rendon & Rendon, 2015, p. 716). DOD contracting suffers from a low quantity of trained personnel and the low quality of the overall training (Hidaka & Owens, 2015). Contracting competency begins with education, training, and contracting field experience. In 1991, the Defense Authorization Act established the Acquisition Corps and with it the Defense Acquisition Workforce Improvement Act (DAWIA) to improve the effectiveness of training of personnel. DAWIA has established requirements for contracting personnel both military and 1102 Civil Servants at three levels of DAWIA certification (Defense Acquisition University [DAU], n.d.-a). Level I DAWIA certification requires “10 functional training classes, 24 hours in accounting, law, business, finance, contracts, purchasing, management, marketing, quantitative methods or organization and management, a Baccalaureate degree, and one year of contracting experience” (DAU, n.d.-a, para. 1). Level II DAWIA certification adds “one acquisition training class, eight functional training classes, and a second year of contracting experience” (DAU, n.d.-b, para. 1). Level III DAWIA certification adds “a second acquisition training class, eleven additional functional training classes, and a total of four years in contracting experience” (DAU, n.d.-c, para. 1).

Personnel competency encompasses more than DAWIA certification. Since the requirements of all DAWIA certifications include a Baccalaureate degree in any field and contracting work experience, many will start their contracting careers with limited or no on-the-job-training.

## 1. Low Quantity of Trained Personnel in Contracting

Figure 2 shows that the DOD has increased its acquisition workforce from 126,000 in September 2008 to about 153,000 in March 2015, but has under-targeted the growth in the contracting workforce (GAO, 2015).

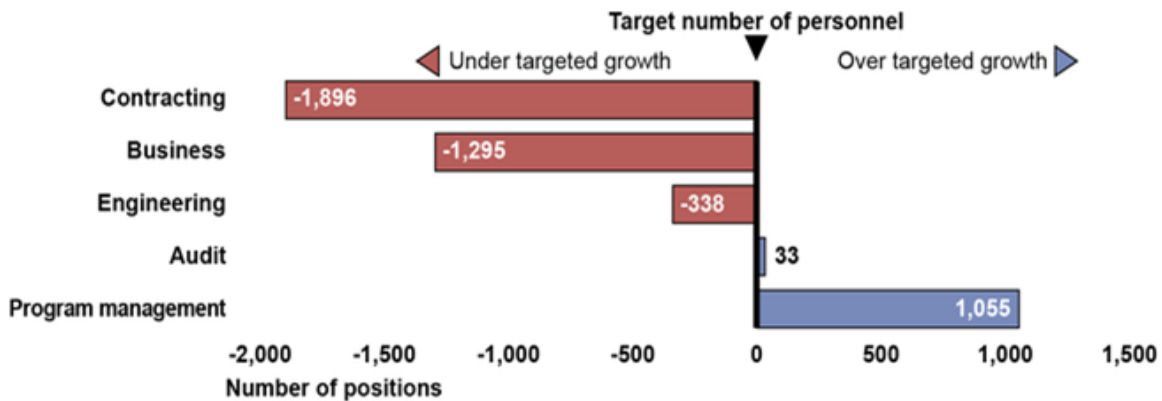


Figure 2. Decrease in Growth of Contracting. Source: GAO (2015).

In FY 2012, Hidaka and Owens’ (2015) research found that 57% of personnel in the defense contracting field were within ten years of retirement. Since 2015, between 17% and 20% of personnel in the defense contracting field have retired. In addition, Rodriguez’s (2013) research found a decrease in contracting personnel hiring as low as 7% annually, despite an annual retirement of approximately 10%. The three combined traits of a low rehire rate, the reduction in force, and the increase in recent retirements has led to a reduction in the contracting professional workforce.

## 2. Low Quality in Training for Contracting Personnel

Certification is not sufficient for competency. Certification is important as “90.4% of all practitioners perceive a linkage between certification and knowledge” (Prier, McCue, & Behara, 2010, p. 524). Wilkinson stated, “if you are a GS-1102 federal employee with a Level II certification and 24 business credit hours, congratulations” but “they are minimum requirements of contract management” (Wilkinson, 2015, p. 3). Furthermore, in evaluating training for fraud, it is evident that DAU training has “limited offerings of procurement fraud, waste and abuse” (Rodriguez, 2013, p. 43). Specifically,

the Congress directed acquisition refresher CLM 049 is not a core curriculum for any of the 14 Acquisition fields for the various DAWIA Level I, II or III certifications (Rodriguez, 2013).

A 2013 survey assessed competent people and vulnerability perception. Chang (2013) surveyed Army personnel specifically on knowledge of fraud and internal controls with results of 64.3% accurate for military and 62.4% accurate for civilians. Castillo and Flanigan (2014) conducted a survey on Air Force personnel on the knowledge of fraud and internal controls, which also resulted poorly averaging 69.2% and 64.9% respectively. Castillo and Flanigan (2014) also concluded that the Air Force organization may lack the training to correctly identify fraud schemes in contracting. The fault does not solely lie on the contracting office, as there is “an important [need] for senior organizational management...to understand their roles and responsibilities in support of the contract management process” (Rendon, 2015, p. 1490).

After a sufficient number of contracting personnel have been properly trained and become competent in their areas, they must work together during the contract management process. The second aspect of auditability is capable contract management processes, which is discussed in the next section.

#### **E. CAPABLE CONTRACT MANAGEMENT PROCESSES**

Rendon and Rendon define capable processes as contracting processes that are “fully-established, institutionalized, mandated, integrated with other organizational processes, periodically measured, and continuously improved” (R. G. Rendon & Rendon, 2015, p. 716). Federal Acquisition Regulation (FAR) 2.101 states, “Acquisition planning means the process by which the efforts of all personnel responsible for an acquisition are coordinated and integrated through a comprehensive plan for fulfilling the agency need in a timely manner and at a reasonable cost” (FAR, 2016). The DOD maintains a credit card threshold of \$2,500 for services and \$3,500 for supplies. If it is above this threshold, a contract is a more suitable means of procurement. DAU defines a contract as “a mutually binding legal relationship obligating the seller to furnish supplies or services (including construction) and the buyer to pay for them” (“Contract,” n.d., para. 1). Schwartz noted

that the DOD's acquisition process is "highly complex and does not always produce systems that meet estimated cost or performance expectations" (Schqartz, 2014, p. 1). Castillo and Flanigan argue that "for those organizations not directly involved [in the contracting process], the contracting process is considered a simple one" (Castillo & Flanigan, 2014, p. 7). Regardless of perceived difficulty, defense contracting splits into three areas: pre-award, award, post-award. These areas subdivide further into six total processes. The next sections describe these six contract management processes.

### **1. Pre-Award: Procurement Planning**

Garrett defines procurement planning as "determining whether to procure, how to procure, what to procure, how much to procure, and when to procure" (Garrett, 2013, p. 43). Procurement planning is "an important part of contract management because it establishes the foundation for future successes or problems" (Hidaka & Owens, 2015, p. 13). Rendon (2007) summarizes key activities during this process as designing scope, conducting market research, evaluating funds, estimating an initial cost, predicting schedule, and determining manpower requirements.

Defining the requirement answers the question of whether to procure. Castillo and Flanigan (2014) reference FAR 7 in these questions during this process: Is it a product or service that a customer needs? Is it the first time it's been procured? Is it available commercially? How long is it required? How complex is it? This narrows the need for procurement to what is only required and at proper quantities. These procurements can be either a product or a service. FAR 37 summarizes services available for procurement but limits services to non-inherently government functions such as some defense-related duties and many consulting duties (FAR, 2016).

Once the decision to make or buy is made, market research commences to answer the question of how to procure. FAR 10 states that market research is used to answer if sources exist, if the products or services needed are commercial, if there are bundling options, and if there is a baseline for pricing (FAR, 2016). Finally, the requirements documents will capture the *what*, *when*, and *how much* in one of three documents. The statements of work are related to the acquisition of supplies (Moschler & Weitzner,

2012). Second, the statement of objectives is broader in order to describe unclear or technically developing solicitations (Moschler & Weitzner, 2012). Finally, the performance work statements are designed when there are service performance based outcomes (Moschler & Weitzner, 2012).

## **2. Pre-Award: Solicitation Planning**

Garrett defines solicitation planning as the “buyer [understanding] its own requirements...and must be able to communicate those requirements in the form of deliverables” (Garrett, 2007, p. 24). This is done by taking the management’s procurement plan, other planning documents, or a statement of work to create procurement documentation that uses the proper evaluation criteria (Garrett, 2007). Once an organization determines if the risk level is high for the government, the contract generally becomes cost reimbursable. The lower risk and commercially available contracts generally become fixed-price contracts. The DOD determines the type of contract based on risk, price, and incentives. FAR parts 19 and 26 also state federal contracting is to utilize “small businesses, woman-owned small business, small disadvantaged business, historically underutilized business zone, veteran-owned small business, and service disabled veteran owned small businesses” (FAR, 2016, section 19202). This phase results in the preparation of a solicitation document.

## **3. Pre-Award: Solicitation**

DAU defines solicitations as “any request to submit offers or quotations to the government” (DAU, 2012, para. 1). Three methods of procuring are via government purchase card, simplified acquisition threshold, and soliciting to contractors using the best value continuum outlined in FAR 15 (FAR, 2016). If procurement is above \$3,500, contracting might use pre-proposal conferences but must publicize to increase competition and broaden industry participation per FAR 5.002 (FAR, 2016). The Federal Business Opportunities (FEDBIZZOPS) website advertises the procurement opportunities of the federal government to contractors. During this phase, contracting offices will keep a list of qualified bidders and ensure contractors see amendments as they occur, but limit the exchange of information to those listed in FAR 15.201 (FAR,

2016). This phase concludes with the posting of the solicitation to the FEDBIZZOPS website.

#### **4. Award: Source Selection**

In this phase, the source selection board evaluates qualified proposals, applies evaluation criteria set in procurement planning, negotiates contract terms and conditions, sets contractor responsibility standards, and ultimately selects a contractor if enough competition exists (Garrett, 2013). If the contract is simple, proposals may be evaluated by one person. If the contract is complex, the source selection board has several tools to select proposals such as a weighing system, screening system, and the possibility of independent estimates (Garrett, 2007). During the evaluation criteria, the source selection board weighs each proposal based on attributes, management, technical, price, and past performance pre-determined in the request for proposal (Garrett, 2007). Once source selection concludes, negotiating starts, and cost analysis of the contractor begins. This phase concludes with the finalizing negotiations and producing an agreed-upon contract.

#### **5. Post-Award: Contract Administration**

Garrett defines contract administration as “a process of ensuring each party’s performance meets the contractual requirements” (Garrett, 2013, p. 46). Contract administration occurs through several agencies and in several ways. The contracting office conducts a pre-performance conference with the contracting officer, prime (or lead) contractor, sub-prime contractor, COR, and Defense Contracting Management Agency. Second, the team evaluates performance through earned value management, budget analysis, and schedule analysis with the Program Management team (Garrett, 2013). Third, the contracting officer must ensure the prime contractor is managing all FAR 22 and 23 applicable labor laws and restrictions (FAR, 2016).

The CORs are vital to this phase as they are responsible for surveying the contractor’s progress and documenting receipt and delivery. The contracting officer must measure and report a contractor’s cost against FAR 29–32. In addition, the contracting officer must ensure deliveries against the agreed upon master schedule. During this phase, the performance of the contractor is evaluated using the contract administration

office (CAO) or administrative contract officer (ACO) discussed in FAR 42.302 and 42.6 (FAR, 2016). Finally, the FAR 43 allows for contract modifications to ensure the contract reflects current requirements (FAR, 2016). If done correctly, this phase results in a completed contract. However, other results might include termination for cause or termination for convenience, which will be discussed next.

## **6. Post-Award: Contract Closeout**

Garrett defines contract closeout as “all administrative matters are concluded on a contract that is otherwise physically complete” (Garrett, 2013, p. 47). In short, a contract closeout is final delivery, receipt, inspection, acceptance, and payment. In order for a contract to be closed out, the government requires proper paperwork of a closeout report, certificate of completion, seller’s release of claims, and contract closeout checklist (Garrett, 2007). This phase results in the evaluation of the contractor via the Contractor Performance Assessment Reporting System (CPARS). This allows contractors to develop past performance that will be evaluated in future contracts.

Organizations must have capable contract management processes for sufficient auditability. Capable contracting management processes is the second aspect of auditability theory. The final aspect of auditability is effective internal controls, which is discussed in the next section.

## **F. EFFECTIVE INTERNAL CONTROLS**

The Committee of Sponsoring Organizations (COSO) defines internal controls as “a process, effected by an entity’s board of directors, management, and other personnel, designed to provide a reasonable assurance regarding the reliability of financial reporting” (Committee of Sponsoring Organizations of the Treadway Commission [COSO], 2013, p. 3). Effective internal control components ensure the organization is “[complying] with laws and regulations, monitoring procedures to assess enforcement, and reporting material weaknesses” (R.G. Rendon & Rendon, 2015). Internal controls are essential for organizations to maintain internal awareness and to enforce current protocols to ensure a standard of reporting. Figure 3 illustrates effective internal controls in an organization in order to achieve its objective (GAO, 2014). COSO (2013) considers

internal controls as regulations that affect all personnel and are designed to meet the organization’s objectives of operations, reporting, and compliance.

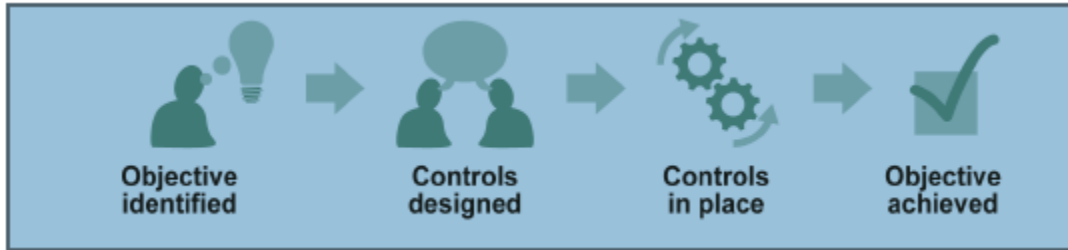


Figure 3. Achieving Objectives Through Internal Controls.  
Source: GAO (2014, p. 5).

The GAO’s Green Book Standards for Internal Control in the Federal Government published the current standards based on the COSO Internal Control Framework. Figure 4 shows the five components of “control environment, risk assessment, control activities, information and communication, and monitoring activities” (COSO, 2013, p. 6).

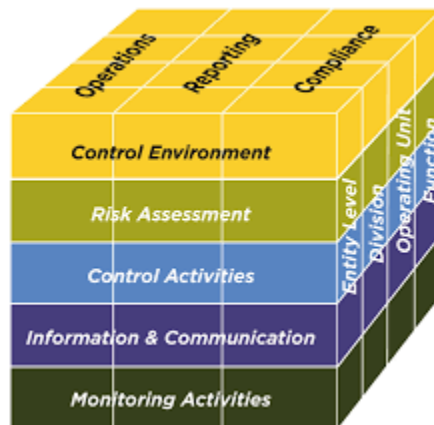


Figure 4. Relationship of Objectives and Components.  
Source: COSO (2013, p. 6)

Figure 5 shows that the five components are broken down into 17 principles. COSO 2013 describes an organization applying “all principles to operations, reporting, and compliance objectives to achieve effective internal control” (COSO, 2013, p. 3).

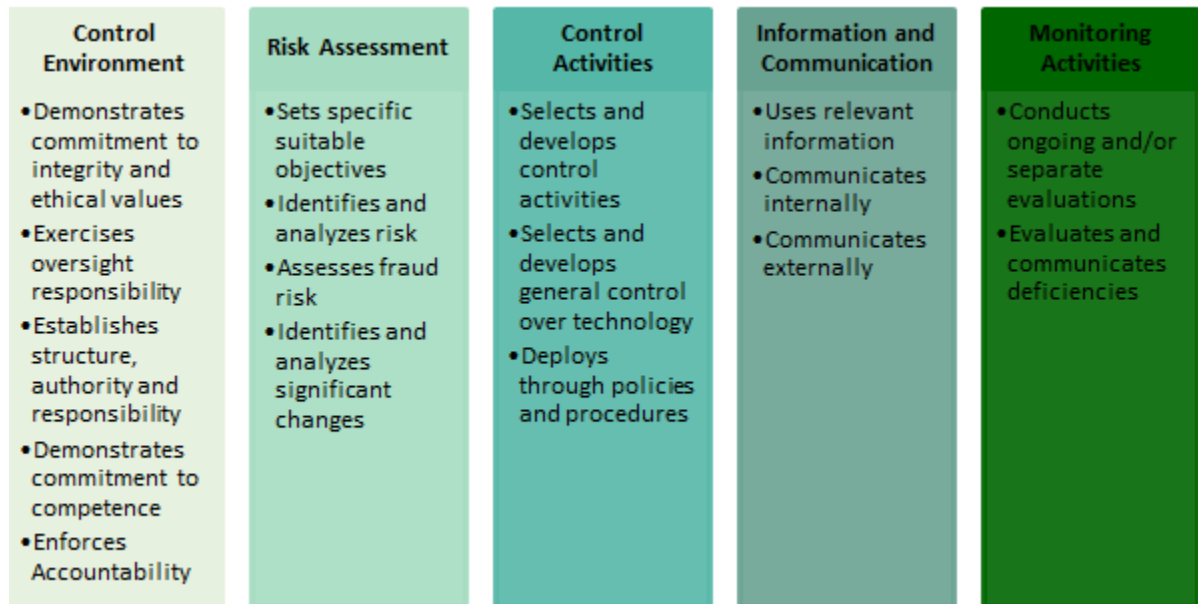


Figure 5. COSO’s 17 Fundamental Principles.  
Adapted from COSO (2013, p. 6).

### 1. Control Environment

COSO (2013) defines control environment as “the set of standards, processes, and structures that provide the basis for carrying out internal control across the organization” (p. 4). The control environment sets the tone for the organization. Figure 5 shows the five fundamental principles of control environment as a “commitment to integrity and ethical values, oversight of the internal control system, an understood chain of command, competent personnel, and subordinates’ responsibility and authority” (COSO, 2013, p. 6).

An effective control environment operates efficiently. A poor control environment can lead to loss of faith in financial reporting or possibly the company’s ability to lead (Doss & Jonas, 2004). The five fundamental principles affect all personnel in the

organization (McNally, 2013). The first integrated component is control environment; the second component is risk assessment.

## **2. Risk Assessment**

COSO (2013) defines risk assessment as “the possibility that an event will occur and adversely affect the achievement of objectives” (p. 4). During risk assessment, fraud vulnerability is addressed in relation to the risks taken (GAO, 2014). As Figure 5 (COSO, 2013, p. 6) shows, the four fundamental principles of risk assessment are “setting specific objectives, identifying and analyze risk, assessing fraud risk, and analyzing for significant changes” (COSO, 2013, p. 7). The risk should be measured against acceptable tolerance and against all regulations. Once senior leadership measures the risk, it should align with current operations, financial needs, and accurate reporting.

GAO (2014) concludes that risk tolerance is not the same as compliance. In other words, either an organization complies with rules and regulations, or it does not. Risk in one department may affect another department. For example, a deficiency in the contracting selection board might cancel the entire solicitation effort and double the workload if re-submittal has to occur. Proper response to risk is summarized in GAO’s report as acceptance, avoidance, reduction, and sharing (GAO, 2014). Incorrect financial reporting, misuse of assets, and other fraud must be evaluated when evaluating risk internally. These risks can increase if the fraud triangle components, which include perceived pressure, perceived opportunity, and rationalization, are present (Figure 7).

Rendon and Rendon discuss risk increasing when “weak internal controls, poor leadership, poor accountability, and lack of transparency nurture the opportunity for fraud in an organization” (J. M. Rendon & R. G. Rendon, 2015, p. 717). To decrease the likelihood of internal corruption, an organization should conduct a thorough self-assessment. Risk assessment is the second integrated component of internal controls; the third is control activities.

### **3. Control Activities**

COSO (2013) defines control activities as “actions established through policies and procedures that help ensure that management’s directives to mitigate risks to the achievement of objectives are carried out” (p. 4). This is the functional efficiency of the organization. The three fundamental principles of control activities are the management’s responsibilities to design, develop, and implement a system through policies to achieve objectives (Figure 5). The key is the correct level of control. If control is too onerous, work may become inefficient, and over-regulation may degrade effectiveness. If control is too weak, visibility may be limited. To decrease the risk further, GAO (2014) mandates segregating the key functions of authority, custody, and accounting functions in order to negate possible conflicts of interest.

Sabatier and Mazmanian (1979) theorize that five traits of policies must exist to be effective. Policies must have a correlation between target behavior and end state, must be unambiguous, must be enforced by competent leadership, must encourage buy-in, and must not contradict other policies currently in place (Sabatier & Mazmanian, 1979). The more traits covered by control activities, the greater the effectiveness of the policies and procedures to reach the organization’s objective. When personnel in organizations embrace control activities, policies feel less restrictive to them.

However, these control activities will not work without making policies and procedures mandatory. Boss, Kirsch, Angermeier, Shingler, and Boss (2009) discuss how “routine security policies can dissuade employees from using them, and thus become vulnerable to unwelcome externalities” (p. 151). By mandating rules or the term “mandatoriness,” employees commit in three different ways by internalizing the rules, identifying with the rules, and ultimately complying with the rules (Boss et al., 2009). Control activities that become mandated will become the culture of the organization for better or for worse.

GAO (2014) contends that effective control activities help prevent or detect fraud, are performed at a higher level, are routine and consistent, and are directly related to an operational process. Information systems that gather control activities should be

complete, accurate, and valid to be effective. With these elements in place, senior leadership has a deeper understanding of the financial intricacies of their organization. The third integrated component is control activities; the fourth component is information and communication.

#### **4. Information and Communication**

COSO (2013) defines information as “necessary [details] for the entity to carry out internal control responsibilities to support the achievement of its objective” (p. 5). Separately, COSO (2013) defines communication as “the continual, iterative process of providing, sharing, and obtaining necessary information” (p. 5). Communicating relevant and accurate information is the key to a successful organization and the starting point for identifying fraud. The three fundamental principles of information and communication are high quality information, internally communicated information, and externally communicated information (Figure 5).

Information gathered must be from a relevant and reliable source. A 1991 study showed a direct correlation between the success of a business and market research received from “trusted and immediate sources” (Hartman, 1994, p. 37). Information must be shown to senior members of the organization, as well as disbursed to other members directly influenced by the results of the information. GAO (2001) describes effective communication as information given in the correct form, to the correct recipients, and at the correct time.

Information is powerful in that it can be an equalizer between a company with larger capacity and a company with smaller capacity (Li, Li, Liu & Barnes, 2011). Therefore, protecting information is just as important as collecting information. For example, the contracting office gathers in-depth information regarding a company’s capacity and pricing data that would be detrimental if it fell into the hands of a competitor. Similarly, intellectual property, pricing data, and other critical knowledge must be guarded by the contractor against fraudulent acts like espionage. The fourth integrated component is information and communication; the fifth and final component is monitoring activities.

## **5. Monitoring Activities**

COSO (2013) defines monitoring activities as “ongoing evaluations, separate evaluations, or some combination of the two” which are used to determine whether internal controls are available and working (p. 5). As a note, GAO (2014) used the original title “monitoring” when addressing this component. This component entails making adjustments or changes to control procedures (J. M. Rendon & Rendon, 2016). The two principles of monitoring activities are conducting repetitive evaluations and taking a closer look at any deficiencies found (McNally, 2013).

Monitoring activities grant leadership a full visibility of changes, strengths, and weaknesses in their organization. It is a chance for subordinates to highlight deficiencies, senior leadership to analyze trends, and all to take follow-up actions. With “mandatoriness” in effect, leadership needs to encourage all its members to speak out and protect against reprisals. All domestic companies are subjected to the April 1989 Whistleblower Protection Act which gives freedom for employees to report fraud, waste, and abuse without fear of reprisal (Bond, 2009). The Whistleblower Protection Enhancement Act has expanded to include abuse of power and public health (Bond, 2009). Other avenues to address high risks, fraud, waste, and abuse are department-led inspector general offices such as DODIG.

Grant Thornton LLP (2009) developed additional guidance after noting many in industry have felt monitoring to be “a time-consuming task that involves a significant amount of annual management” (p. 1). For this reason, many organizations do not use monitoring to its fullest capacity in assessing effective internal controls. GAO (2001) encourages meetings for employees to see whether the current internal controls are effective. If separate evaluations occur, this assists in diffusing favoritism or internal collusion. Separate evaluations also ensure multiple evaluators are valuing reporting standards for clarity, quality, and accuracy. Separate evaluations occur when companies go through changes in leadership, inspector general inspections, and internal/external audits. All five integrated components are essential for internal controls. Organizations without these components in place may follow a five-step transition plan, which is discussed in the next section.

## 6. The Five-Step Transition

In the most recent update to COSO, McNally (2013) discussed how organizations can transition to the 2013 model. Figure 6 shows the five-step transition applicable for those organizations without internal controls in place or those lacking sufficient internal controls.



Figure 6. How to Transition to Proper Internal Controls Implementation.  
Source: McNally (2013).

Step one refers to managers ensuring internal controls are in working order (McNally, 2013). Step two refers to the analysis that should be done on the impact of any deficiencies found (McNally, 2013). Step three refers to employee awareness and training of updated internal control procedures (McNally, 2013). Step four refers to organizations developing a plan to finalize the COSO transition (McNally, 2013). Step five refers to organizations implementing continuous process improvement and self-evaluation

programs (McNally, 2013). As internal controls affect federal and non-federal companies alike, early controls act as prevention against a possible crisis (Chan, 2006). Companies that have proper internal controls in place benefit from leadership setting the tone, streamlining business processes, and maintaining the proper risk in management among other things (Chan, 2006).

Effective internal controls are the third aspect to the auditability theory (Figure 1). The three aspects of the auditability triangle, which include competent personnel, capable processes and effective internal controls, work together to reduce, detect, and help to deter the various types of fraud schemes. These fraud schemes will be discussed in the next section.

### **G. PROCUREMENT FRAUD SCHEME CATEGORIES**

The Association of Certified Fraud Examiners (ACFE) uses Black's Law Dictionary to define fraud as "a knowing misrepresentation of the truth or concealment of a material fact to induce another to act to his or her detriment" (Association of Certified Fraud Examiners [ACFE], n.d.-b, para. 2). Fraud theory was conceptualized in the 1940s by criminologist Cressey. While interviewing over 200 incarcerated embezzlers, Cressey identified that the fraudsters had three things in common, which included motivation (also called pressure), opportunity, and rationalization (Wells, 2001).

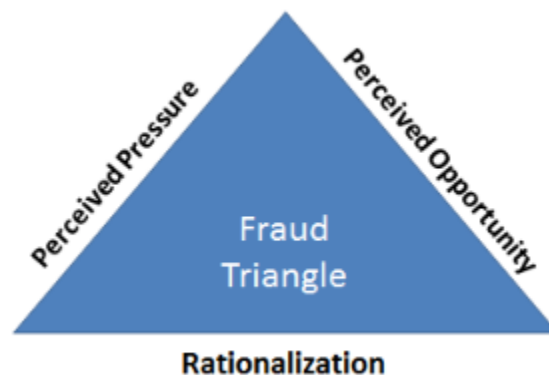


Figure 7. Fraud Triangle. Source: Albrecht (2014, para. 1).

Cressey determined that if three factors are met, the organization is more susceptible to fraud by individuals with these traits.

Fraud schemes in contracting can be divided into internal and external fraud. Internal or occupational fraud is “the use of one’s occupation for personal enrichment” (ACFE, n.d.-b, para. 5). Internal fraud does not only mean fraud intra-organization, but can also include collusion between employees and contractors (Tan, 2013). The ACFE classifies external fraud into subcategories of dishonest vendor, dishonest customer, and dishonest third party (ACFE, n.d.-b). Regarding the federal contracting organization, the six most common procurement fraud schemes are fraudulent bidding, billing schemes, collusion, conflict of interest, fraudulent purchases, and fraudulent representation.

### **1. Fraudulent Bidding**

Wells (2005) defines fraudulent bidding or “bid rigging as a process by which an employee assists a vendor to fraudulently win a contract through the competitive bidding process” (p. 283). Wells (2005) categorizes fraudulent bidding by when it occurs in the contracting process. During the procurement phase, a need recognition scheme may occur where the “buyer receives something of value” in exchange for developing the need for a good or service (Wells, 2005, p. 268). Similarly during the procurement phase, a specifications scheme can be a payoff of the buyer in exchange for “tailoring the specifications to a particular vendor” (Wells, 2005, p. 268). During the solicitation phase, “bid pooling may occur where several bidders conspire to split up the contract and each gain an amount of work” (Wells, 2005, p. 269). Another type of fraudulent bidding in the solicitation phase is the fictitious supplier where a shell company is used to ensure a bid is won (Wells, 2005). Other solicitation issues may arrive when vendors fail to bid, inflate prices, or withdraw bids at the last moment. During the source selection phase, fraudulent bidding may occur in the form of a bribe (Wells, 2005).

Protection against kickbacks during fraudulent bidding is the Anti-Kickback Act. Fraudulent bidding is unique in that it may be purely external to the contracting office. LaCasse remarks that fraudulent bidding is difficult for legal authority to determine “on the basis of bids alone, that a conspiracy has formed” (LaCasse, 1995, p. 398). Protection

against fraudulent bidding stems from market research conducted by the contracting office. No bids or extreme variances in a competitive market might be an indicator of fraud. Regarding internal collusion, contracting offices must ensure the selection process is objective as possible and free of bias.

## **2. Billing, Cost, and Pricing Schemes**

Wells (2005) defines billing schemes as a vendor receiving “fraudulent payment by submitting invoices for fictitious goods or services, inflated invoices, or invoices for personal purchases” (p. 98). The most effective way of detecting a billing scheme is a tip from an employee (Wells, 2005). As mentioned before, with the Whistleblower Protection Act in place, subordinates have an avenue to report concerns without fear of reprisals.

Protection against billing schemes may be as using a certain type of contract for the procurement. Inflated prices are not normally an issue with fixed-price contracts, as any inflated price directly results in lost profits for the company. However, in cost reimbursable contracts, the incentive is higher for price inflation. Price inflation may occur via payroll schemes including over-commission schemes, phantom employee schemes, and overpayment schemes. Phantom or ghost employee schemes occur when the payroll office invents non-existing personnel in order to obtain more money from a contract. Overpayment schemes occur with falsified hours or rates. Commission schemes are a type of inflated sales (ACFE, n.d.-a). Other schemes include check tampering and expense schemes. Manipulation of the billing system can occur in other ways to defraud the government of money not due the contractor. Generally, billing schemes are more common when pricing is not verified against current market competition, opening the door to price inflation.

## **3. Collusion**

Wells (2005) defines collusion as “a situation where two or more employees work together to commit fraud by overcoming a well-designed internal control system” (p. 122). Collusion can be done in falsification of hours, kickbacks, and shell companies. Falsification of hours can happen when a subordinate colludes with a supervisor to

increase hourly pay for a kickback (Wells, 2005). Fraudulent hours can also be obtained via payroll collusion where the subordinate seeks another administrative sign off on the incorrect hours (Wells, 2005). Collusion can also happen when the COR knowingly endorses an incorrect number of hours for a contractor's work. Kickbacks are schemes that occur "where vendor pays back a portion of the purchase price to an employee" in order to gain favor (Wells, 2005, p. 283). Shell companies are "a fictitious entity created for the sole purpose of creating fraud" (Wells, 2005, p. 122). This is the case when a larger company who may not qualify for the small business benefits, creates a shell company to attempt to win a bid. Collusion occurrences may be reduced by the Small Business Association ensuring legitimacy of small businesses, current market research, and past performance evaluations.

Both falsified hours and kickbacks can be seen in the PMA Services Limited case where contractors bribed the U.S. military in exchange for kickbacks in construction projects (OIG, 2015). Congress passed the Copeland "Anti-Kickback Act" in 1934 to prosecute violators (Thai, 2000). Violations of the Copeland Act are imprisonment and/or fines for both the vendor and the buyer receiving the kickback (Thai, 2000). Laffont and Martimort (1998) stipulate that in contracting offices where vendors are properly vetted, collusion is not an issue.

#### **4. Conflict of Interest**

Wells (2005) defines conflict of interest as "when an employee, manager, or executive has an undisclosed economic or personal interest in a transaction that adversely affects the company" (p. 273). If personnel have all attributes of the fraud triangle, then conflict of interest has a higher probability of occurring. Source selection is at risk of conflict of interest "when a member of the source selection team may have interests, financial or other, in one of the offerors" (Castillo & Flanigan, 2014, p. 24).

Protection against conflict of interest include Title 18 U.S.C. § 208 and 209, which restrict external compensation and delay or limit post-contracting office employment opportunities. Section 208, titled "Acts Affecting a Personal Financial Interest," makes it illegal for contracting personnel to financially benefit from contracts

that they administer (Roberts, 2010). Section 209 makes it illegal for a contracting officer to receive additional pay outside of federal wages and earned benefits (Roberts, 2010). Ethics regarding conflicts of interest are covered in detail in FAR 2.101-1 reminding federal employees to remain above reproach and impartial (FAR, 2016).

## **5. Fraudulent Purchases**

Wells (2005) defines fraudulent purchases as purchasing “personal items with company money” (p. 114). Fraudulent purchases occur when the requestor is buying materials or services for personal needs rather than for government needs. This can occur internally within contracting offices or externally via contractors. GAO (2002) indicates that fraudulent purchases are more prevalent in government purchase card programs.

Protection against fraudulent purchases on a government credit card is oversight by the approving officer prior to every purchase. Another fraudulent purchase issue involves vendors charging for items not received under initial order (GAO, 2002). Protection against vendor overcharge may include ensuring proper training of the COR or the receiving official correctly verifying receipt. The final fraudulent purchase issue involves collusion between a contractor and a contracting office which leads to requesting more items than is required to fulfill the mission (Wells, 2005). Protection against collusion on fraudulent purchases involves ensuring that the solicitation defines the actual requirement of the end user.

## **6. Fraudulent Representation**

Wells (2005) defines fraudulent representation as when “vendors provide real goods or services, albeit in an inflated price” (p. 265). Also called product substitution or “bait and switch,” the issue unfairly increases profit by the contractor at substandard quality. One notable case of this involves the contractor AEY, Inc. winning a \$300 million contract to distribute weapons to Afghanistan. AEY, Inc. substituted the ammunition contracted for outdated People’s Republic of China ammunition from an Eastern bloc country (Committee on Oversight and Government Reform, 2008). In this case, AEY Inc. purposely hid documents and original Chinese stickers to conceal the place of manufacturing. Not only was the ammunition substandard, but it broke the

Defense Federal Acquisition Regulation Supplement that states munitions “may not be acquired, directly or indirectly from a Communist Chinese military company” (Committee on Oversight and Government Reform, 2008, p. 22).

Protection against fraudulent representation stems from the “Lincoln Law” also called the False Claims Act (France, 1990). This law empowers those using the Whistleblower Protection Act to at least 15% of total damages and the fines that it recoups (France, 1990). This is a substantial incentive for those witnessing fraud in their organization.

## **H. SUMMARY**

This chapter provided foundational information on DOD contracting, the impact of fraud on DOD contracting, current problems in defense contracting, and the DOD’s response to fraud. Next, the chapter expanded on auditability theory and reviewed competency of personnel, the defense contracting process, and internal controls. The chapter concluded with the six most common fraud schemes. The literature review focused on examining the work of experts in the field and current research regarding these subjects. The next chapter describes the methodology used for this research.

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### **III. METHODOLOGY**

#### **A. INTRODUCTION**

This chapter discusses the methodology applied for this research. The chapter consists of three sections: development of the assessment tool, the deployment of the survey, and analyses of survey results. The development of the assessment tool discusses the sources used to develop the questions which consisted of demographic, knowledge-based, and the organizational perception. The deployment of the survey section discusses how the survey was deployed, who it was administered to, and the timeframe given to complete it. The researchers analyzed the survey responses based on the contract management processes, internal control components, and procurement fraud schemes. Furthermore, this research analyzes the contracting professionals' perceptions of procurement fraud susceptibilities within their organizations.

#### **B. DEVELOPMENT OF ASSESSMENT TOOL**

The function of the survey is to assess contracting professionals' knowledge level of procurement fraud. The survey allowed contracting professionals in a Navy organization to answer multiple choice questions relating to procurement fraud. This study used a survey by Chang and applied it to a different population. Chang states in page 31 of his report:

The aim was to base these questions on a general knowledge of fraud schemes and not on any information listed in regulations. The questions were developed for each process of the contract management process and further identified according to their associated internal control component and procurement fraud scheme. The survey also included Likert scale questions dealing with organizational environment and fraud. (Chang, 2013, p. 31)

##### **1. Sources Used to Develop Questions**

The assessment questions developed by Chang in a previous study are used in this research. According to Chang (2013), the main source used to develop the survey was the U.S. Agency for International Development (USAID), Office of the Inspector General, Office of Investigation's Fraud Indicators Handbook. The handbook classifies indicators

“based on schemes, contracting process, and personnel conducting the fraud” (Chang, 2013, p. 31). The DODIG’s report (2010) was also used to develop the survey questions. Chang states the two reports are similar because they both contain “lists of fraud indicators as organized by various processes in the contracting process, but also provides concrete examples of fraud occurrences” (Chang, 2013, p. 31). Chang also employed “organizational Likert scale questions” and used “the ACFE contract and procurement fraud data” (Chang, 2013, p. 32).

## **2. Development of Demographic Questions**

Using the previously developed survey, the demographic questions collected data about the contracting professionals participating in the research. The survey includes a range of questions that asks whether they are civilian or military, what their experience is within the contracting field, whether they currently hold a Contracting Officer warrant, and what their DAWIA certification level is (Chang, 2013).

## **3. Development of Knowledge-Based Questions**

As stated by Chang, the survey measured the level of procurement fraud knowledge among the participants “according to each of the six contract processes, five internal control components, and six procurement fraud schemes” (Chang, 2013, p. 32). The questions assess contracting professionals’ knowledge of contracting. The survey provides the contracting professionals with examples of fraud situations and asks them to identify the fraud scheme. “The questions were developed from the various fraud indicators listed in government reports and other resources. All of the 27 knowledge questions were multiple-choice format, with four possible answers” (Chang, 2013, p. 32).

## **4. Development of Organizational Perception Questions**

In addition to demographics and general knowledge questions, the previously developed survey asks the contracting professionals 12 questions about their organization. These questions use the Likert scale to assess what participants thought about their organization’s susceptibility to fraudulent activity (Chang, 2013). Furthermore, the organizational questions assess each contracting professional’s

awareness of fraud in their organization. The Naval Postgraduate School Institutional Review Board approved the assessment tool and the survey questions to insure protection of human subjects for previous research as well as this research.

### **C. DEPLOYMENT OF THE SURVEY**

A Navy designated person, not in the chain of command, was sent a hyperlink from the researchers. A Navy contracting command through an online website called LimeSurvey responded to the survey. The contracting professionals had four weeks to participate in the survey and no time limit once the survey was open to complete the questions. The Navy designated person, who sent out the initial email survey link, also sent reminder messages to complete the survey if the contracting professionals had not already done so throughout the four weeks. The participants solicited were military and civilian contracting professionals who work for the Navy contracting command. The contracting professionals included warranted contracting officers with different levels of contracting certifications.

### **D. ANALYSIS OF SURVEY RESULTS**

The researchers analyzed the survey responses using descriptive statistics identifying patterns and potential correlations among the demographics. The responses to the questions related to the processes of contract management, internal control components, and procurement fraud schemes. The researchers assessed all of the responses to see which process, component, or fraud scheme had the highest susceptibility to fraud within the organization (Chang, 2013). Similar to Chang, Castillo and Flanigan (2014), the researchers compared the survey responses to the participant's demographics (e.g., employment status, DAWIA certification level, and years of experience).

### **E. SUMMARY**

This chapter discussed the methodology used to develop this research, the use of the previously developed assessment tool, deployment of the survey to a Navy contracting organization, and how the results of the survey will be analyzed. The next chapter discusses the findings, analysis from the results of the survey, and recommendations.

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## **IV. FINDINGS, ANALYSIS, AND RECOMMENDATIONS**

### **A. INTRODUCTION**

This chapter discusses the results of the survey responses compiled from the LimeSurvey website. The survey questions address the competent personnel aspect of the auditability triangle (Figure 1) to assess contracting personnel's knowledge level regarding contract management processes, internal control components, and procurement fraud schemes. The researchers compare the demographic, knowledge-based, and organizational perception questions with the contract management processes, internal control components, and procurement fraud schemes. Based on the results of the analysis and implications, the researchers provide recommendations to improve the contracting professionals' knowledge on procurement fraud schemes.

### **B. FINDINGS FROM DEMOGRAPHIC QUESTIONS**

#### **1. Survey Response**

The survey was distributed to 82 contracting professionals in one Navy contracting organization on January 26, 2016, and the survey hyperlink remained open until February 12, 2016. Two additional email reminders were sent after week one to the 82 contracting professionals. Thirty-two contracting professionals completed the survey while another 12 opened the survey but did not complete it, resulting in a 39% response rate. The 12 contracting professionals who did not complete the survey were not included in the findings and analysis.

#### **2. Responses by Employment Category**

The 32 respondents to the survey were all civilian with zero participants from the uniformed military. A large number of civilian respondents were expected due to the organizational structure which has a low percentage of military personnel.

### 3. Responses by Experience

Figure 8 presents responses received from contracting professionals based on their level of contracting experience using the following contracting experience year groups: 0 to 2, 3 to 5, 6 to 10, 11 to 20, and over 20 years. Only one (3%) of the contracting professionals who had participated in the study had 11 to 20 years of experience. Two (6%) of the participants had more than 20 years of experience. Ninety-one percent of the respondents had less than 10 years of contracting experience.

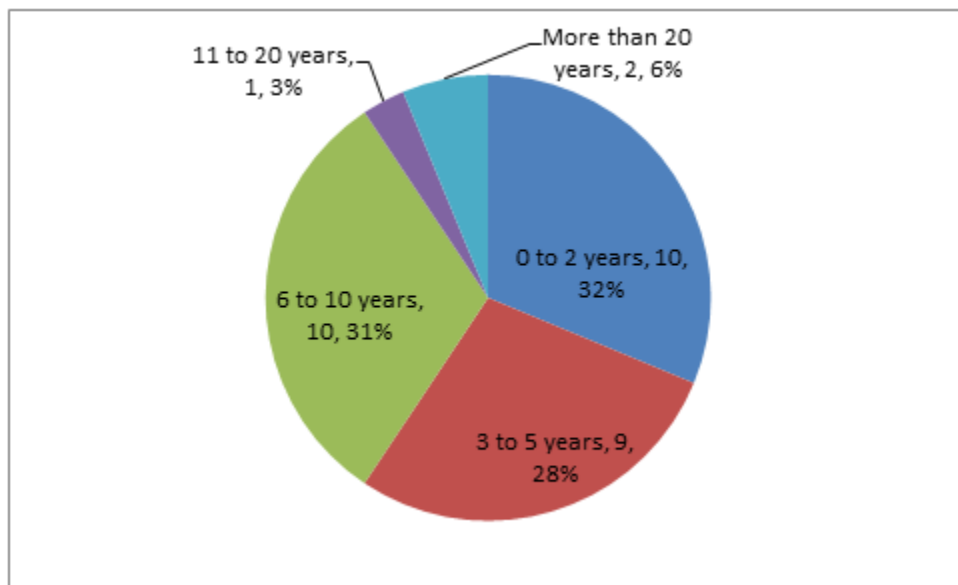


Figure 8. Number of Participants by Experience Category.

### 4. Responses by DAWIA Certification Level

Figure 9 presents the contracting professional's DAWIA certification level using the following contracting levels: no certification, Level I, Level II, or Level III certification, which is the highest level of certification. The highest number of respondents hold a Level II certification (47%), while the lowest number of respondents hold a Level I certification (12%). Seven (22%) of the respondents were contracting professionals who have no certifications.

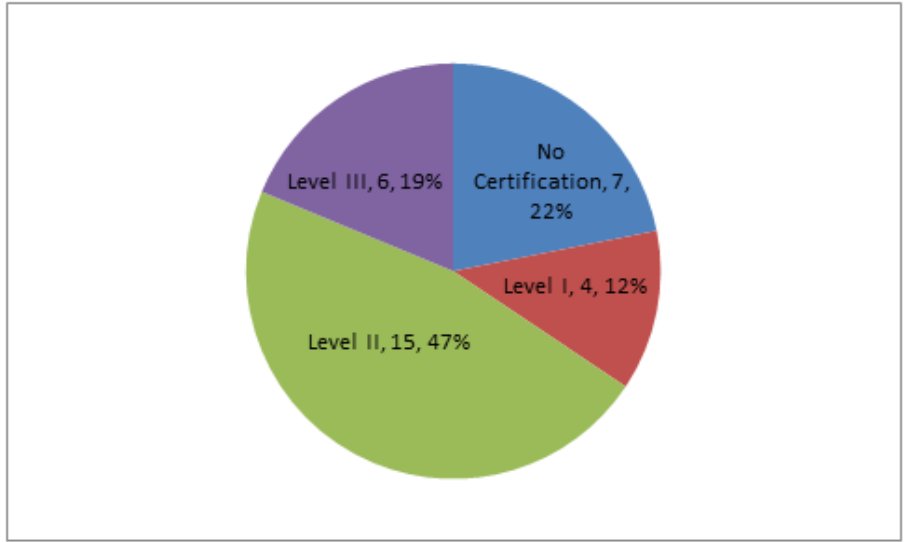


Figure 9. Number of Participants by DAWIA Certification Level.

### 5. Responses by Warrant Status

Figure 10 presents the contracting professional's response regarding warrant status. Twenty-five (78.13%) contracting professionals indicated that they did not hold a warrant, while seven (21.88%) contracting professionals indicated that they held a warrant.

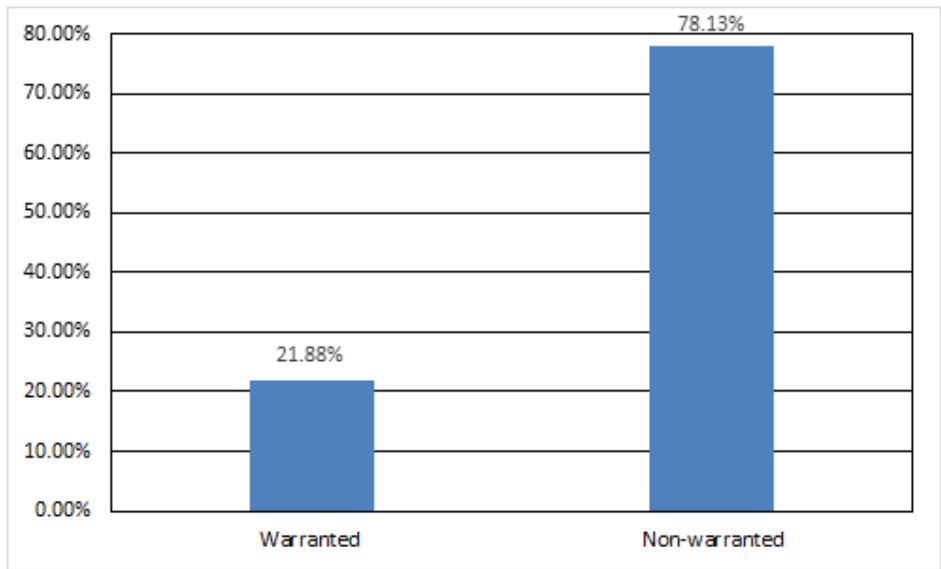


Figure 10. Responses by Warrant Status.

This section discussed the findings from the survey based on the demographics of the respondents. The next section discusses the findings from the knowledge-based questions.

### C. FINDINGS FROM KNOWLEDGE-BASED QUESTIONS

The survey consists of 27 knowledge-based questions classified as contract management process, internal control component, and procurement fraud scheme questions. Table 2 shows the distribution of questions categorized by contract management process, internal control component, and procurement fraud scheme. For the 32 contracting professionals who responded to the survey, the average score for all of the knowledge-based questions was 58%.

Table 2. Number of Knowledge-Based Questions by Categories. Adapted from Chang (2013, p. 38).

Contract Process	Number of Questions	Procurement Scheme	Number of Questions	Internal Control Components	Number of Questions
Procurement Planning	5	Collusion	3	Control Environment	4
Solicitation Planning	5	Conflict of Interest	6	Risk Assessment	6
Solicitation	5	Bid Rigging	6	Control Activities	6
Source Selection	5	Billing/Cost/Pricing Schemes	5	Information and Communications	4
Contract Administration	5	Fraudulent Purchases	4	Monitoring	7
Contract Closeout	2	Fraudulent Representation	3		
<b>Total</b>	<b>27</b>	<b>Total</b>	<b>27</b>	<b>Total</b>	<b>27</b>

## 1. Analysis by Demographic Classification

### a. Experience

Figure 11 presents the average scores of all survey participants based on years of work experience as a contracting professional. Contracting professionals with contracting experience of 0 to 2 years (60.37%) and 3 to 5 years (60.49%) had a higher average score compared to the contracting professionals who had 6 to 10 years (51.85%) and 10 to 20 years (51.85%). The contracting professionals who had more than 20 years of experience (75.93%) had the highest average score. The average scores ranged from 51.85% to 75.93%.

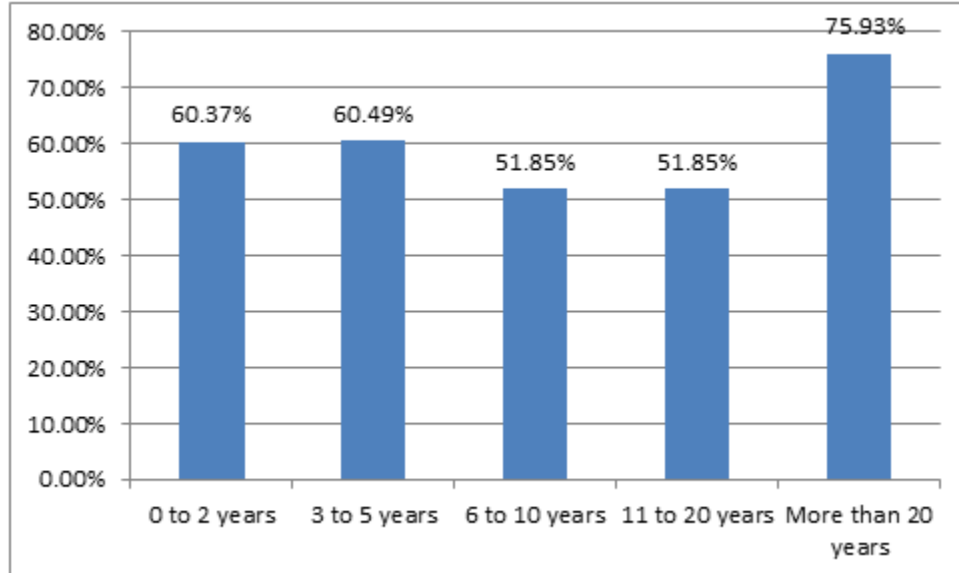


Figure 11. Average Score by Years of Experience.

### b. DAWIA Certification Level

Figure 12 presents the results of the knowledge-based survey questions related to the DAWIA certification levels. On average, the contracting professionals with Level III certification responded to the most questions correctly (64.20%). Contracting professionals with Level II certifications scored the lowest (55.31%) similar to the contracting professionals with no certification (57.14%).

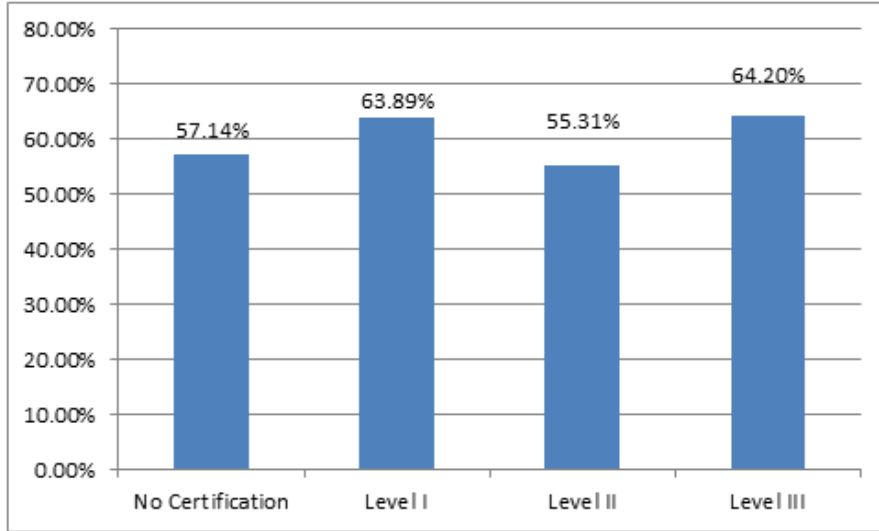


Figure 12. Average Score by DAWIA Level.

**c. Warrant Status**

Figure 13 presents the average scores of the contracting professional's warrant status. The contracting professionals who identified themselves as holding a warrant scored 62.96% compared to the contracting professionals who did not hold a warrant and scored 57.19%.

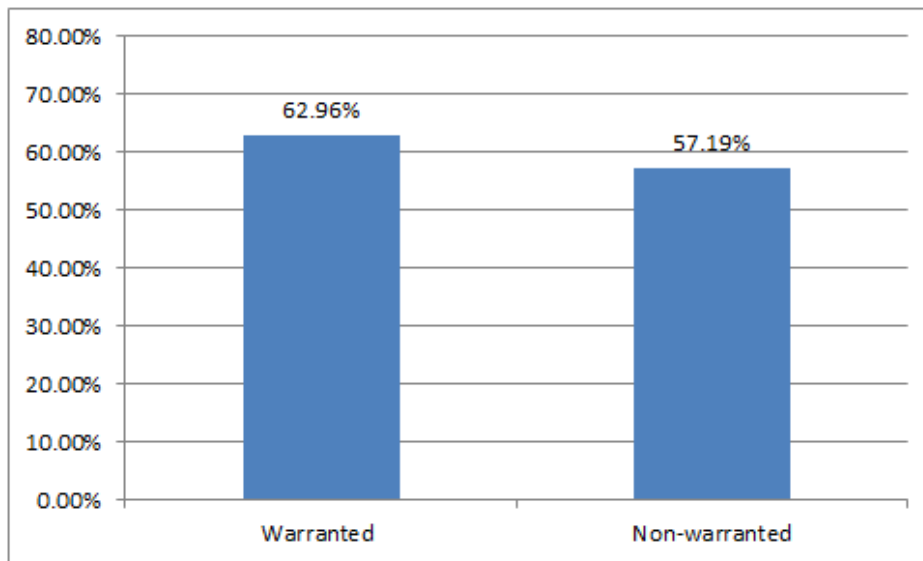


Figure 13. Average Score by Warranted Status.

## 2. Analysis of Contracting Processes

Figure 14 presents the average score of the questions assessing the ability to identify procurement fraud by contracting process. The scores range from 75.63% (procurement planning) to 25.56% (contract closeout). The average overall scores for all of the questions combined regarding contracting processes was 55%.

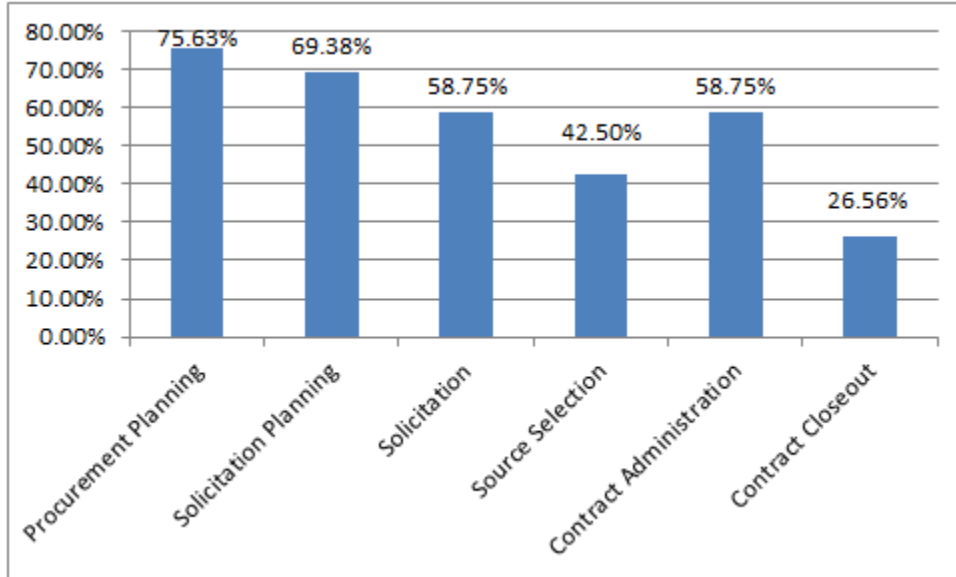


Figure 14. Average Score by Contracting Process.

## 3. Analysis by Internal Control Components

Figure 15 presents the average score of the questions assessing the ability to identify fraud by internal control components. The scores range from 67.19% (control environment) to 50.00% (information and communication). Monitoring activities was the next lowest scoring (54.91%, Figure 15). The average overall scores for all of the questions combined regarding internal control components was 58%.

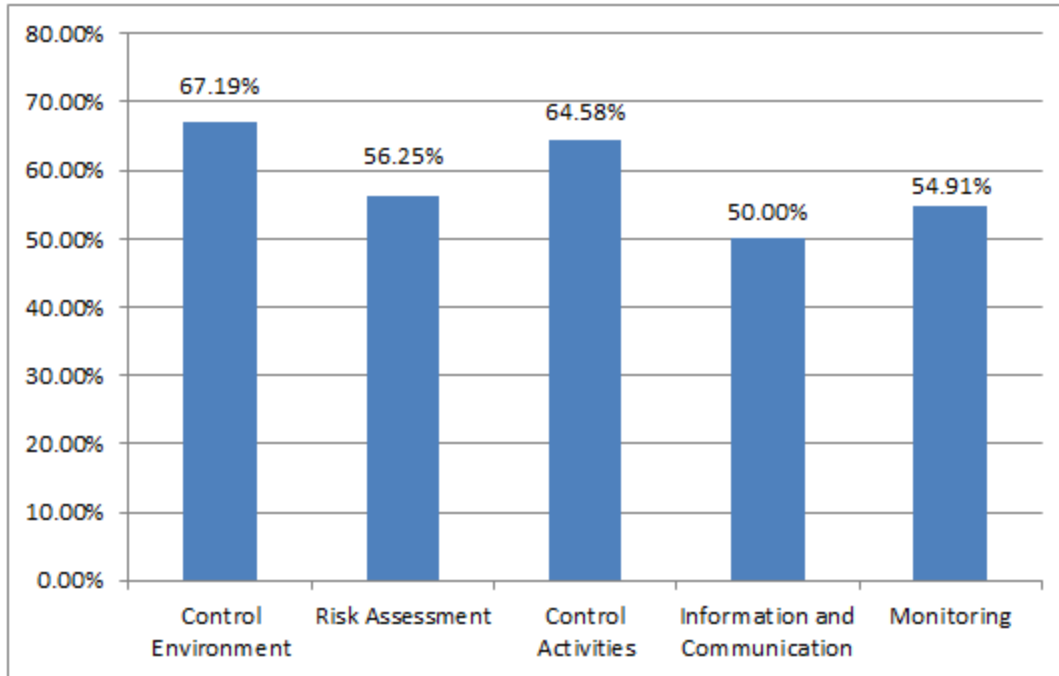


Figure 15. Average Score by Internal Control Components.

#### 4. Analysis of Procurement Fraud Schemes

Figure 16 presents the average score for each procurement fraud scheme area. The scores range from 77.60% (bid rigging) to 44.27% (conflict of interest). The respondents scored 69.79% for the collusion survey questions. The average overall score for all of the questions combined regarding procurement fraud schemes was 58%.

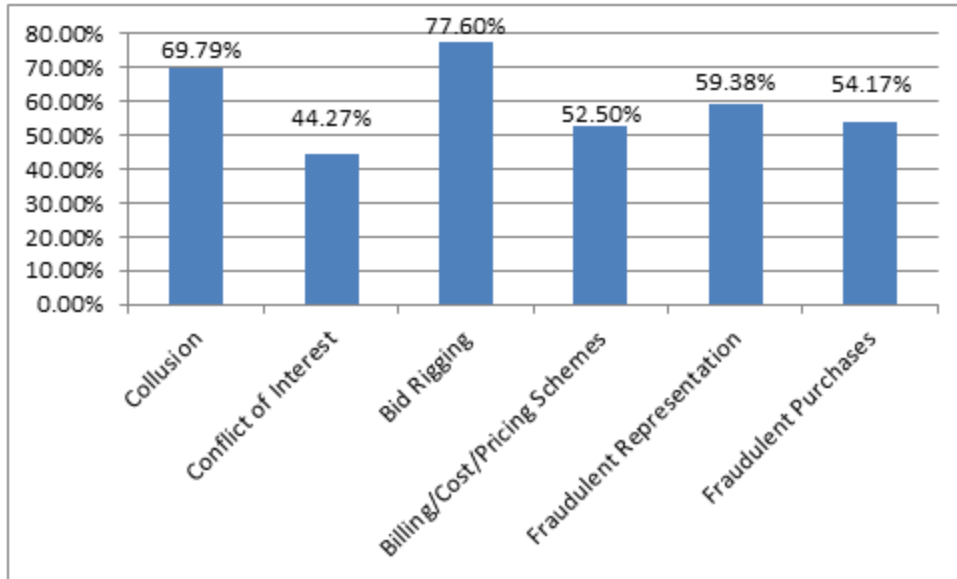


Figure 16. Average score by Procurement Fraud Schemes.

## 5. Analysis of Specific Questions

The survey results of the knowledge-based questions allowed for the isolation of the most and least missed questions. The researchers categorized the questions most and least missed by the contracting processes, internal control components, and procurement fraud schemes. Underlined is the correct response for each survey question.

### a. *Most and Least Missed Knowledge-Based Questions*

The most commonly missed question out of all of the 27 knowledge-based questions surveyed was knowledge question number 18. Only 15% (five contracting professionals) of the 32 survey respondents answered the question correctly. This question generated a wide range of responses. Seven contracting professionals answered “A,” eight answered “B,” nine answered “D,” and three answered “I don’t know.” The following survey questions were created by Chang (2013, p. 41).

K18. Which one of the following situations is MOST LIKELY an indicator of potential fraud during the evaluation of bids?

- A. Bids not being received at the expected location
- B. The majority of bids being received late

- C. The low bidder being allowed to withdraw their bid
- D. A greater than expected variation in prices among bids
- E. I don't know

The knowledge question least missed was question number two. Thirty-one (96%) out of the 32 contracting professionals answered the question correctly.

K2. Tailoring statements of work and specifications to suit a particular offeror

- A. Is an acceptable practice that shortens procurement lead times
- B. Helps level the playing field for disadvantaged competitors
- C. Is not acceptable because it prevents fair competition
- D. Is not acceptable because the government should not lower standards to industry levels
- E. I don't know

***b. Contracting Process Analysis***

The average score for all of the contracting process type questions was 55%, as previously discussed. The most commonly missed questions from the contracting processes were in contract closeout (26.56%, Figure 14). Out of the two contract closeout questions from Table 2, the most missed was number 27.

K27. When closing out a contract, which one of the following item will MOST LIKELY be an indicator of over-charging during the performance of the contract?

- A. Discovery that the contractor didn't disclose their discounts and credits
- B. Discovery of left over materials after the completion of performance
- C. Disclosure by the contractor of their greater than estimated profit in a fixed-priced contract
- D. The greater than expected amount of government furnished material that was returned
- E. I don't know

The question most commonly answered correctly from the contracting process analysis was from procurement planning (75.63%, Figure 14). Out of the five

procurement planning questions from Table 2, question number two was most often answered correctly.

K2. Tailoring statements of work and specifications to suit a particular offeror

- A. Is an acceptable practice that shortens procurement lead times
- B. Helps level the playing field for disadvantaged competitors
- C. Is not acceptable because it prevents fair competition
- D. Is not acceptable because the government should not lower standards to industry levels
- E. I don't know

*c. Internal Control Component Analysis*

In the internal control components analysis, the average of all of the scores among the contracting professionals who responded to the survey was 58%, as previously discussed. The most commonly missed knowledge-based questions from the internal control analysis was in the information and communication (50.00%, Figure 15) component. The next most commonly missed knowledge-based questions came from monitoring activities (54.19%, Figure 15). Out of the four information and communication questions, the most missed was number 27 as mentioned earlier.

K27. When closing out a contract, which one of the following item will MOST LIKELY be an indicator of over-charging during the performance of the contract?

- A. Discovery that the contractor didn't disclose their discounts and credits
- B. Discovery of left over materials after the completion of performance
- C. Disclosure by the contractor of their greater than estimated profit in a fixed-priced contract
- D. The greater than expected amount of government furnished material that was returned
- E. I don't know

The most commonly answered correct questions in the internal control components analysis were from control environment (67.19%, Figure 15). Out of the four control environment questions from Table 2, question number 17 was most answered correctly.

K17. An offeror, whose proposal is claiming to meet the solicitation requirements without intending to do so is committing this type of fraud.

- A. Bid Rigging
- B. Cost Mischarging
- C. Product Substitution
- D. Fraudulent Representation
- E. I don't know

**d. Procurement Fraud Scheme Analysis**

In the procurement fraud scheme analysis, the average of all the scores among the contracting professionals who responded to the survey was 58% as previously discussed. The most commonly missed knowledge questions from the procurement fraud scheme analysis was in the conflict of interest procurement fraud scheme (44.27%, Figure 16). Out of the six conflict of interest questions from Table 2, question number 18 was the most missed question, as previously mentioned.

K18. Which one of the following situations is MOST LIKELY indicator of potential fraud during the evaluation of bids?

- A. Bids not being received at the expected location
- B. The majority of bids being received late
- C. The low bidder being allowed to withdraw their bid
- D. A greater than expected variation in prices among bids
- E. I don't know

The most commonly answered correct questions from the procurement fraud scheme analysis were in the bid rigging section (77.60%, Figure 16). Out of the six bid rigging questions from Table 2, question number 2 was the most often answered correctly, as previously mentioned.

K2. Tailoring statements of work and specifications to suit a particular offeror

- A. Is an acceptable practice that shortens procurement lead times
- B. Helps level the playing field for disadvantaged competitors
- C. Is not acceptable because it prevents fair competition

- D. Is not acceptable because the government should not lower standards to industry levels
- E. I don't know

This section discussed the findings from the knowledge-based questions. The next section discusses the analysis of the organizational questions.

## **D. ANALYSIS OF ORGANIZATIONAL QUESTIONS**

The survey concluded with 12 questions created by Rendon and Rendon (2015) assessing the contracting workforce's perception to fraud vulnerability. The first nine questions included the possible answers of "strongly disagree," "disagree," "neither agree nor disagree," "agree," "strongly agree," and either "I don't know" or "I prefer not to answer." Each answer was quantified and added to a Likert-Scale (see Appendix). The final three questions determined which procurement fraud scheme, contracting process, and internal control component the respondents believed the organization to be the most vulnerable.

### **1. Analysis of Likert-Scale Organization Questions**

The Likert-scale questions ranged in scores from zero to five: zero representing "I don't know," one representing "strongly disagree," two representing "disagree," three representing "neither agree nor disagree," four representing "agree," and five representing "strongly agree" (see Appendix). The mean for all the respondents to the first nine organizational questions regarding the contracting professionals' perception of their organization's ability to detect and respond to fraud was a 4.24. The mean for each question ranged from a low of 3.66 to a high of 4.72 (see Appendix). The question with the highest mean (4.72) asked whether the contracting professional would report suspicious activity or not (see Appendix, Question 3). Every contracting professional surveyed responded either "agree" or "strongly agree" to that organizational question.

The question with the lowest mean (3.66) asked whether the contracting professional had adequate knowledge of contracting fraud schemes to perform their duties (see Appendix, Question 6). Two contracting professionals answered "strongly

disagree,” four answered “disagree,” six answered “neither agree nor disagree,” 11 answered “agree,” and nine answered “strongly agree.”

## **2. Analysis of Perception Questions**

The perception questions fall into three categories: contracting processes, internal control components, and procurement fraud schemes. The researchers analyzed the categories by the percentage of fraud susceptibility.

### ***a. Contracting Processes***

Figure 17 presents the responses by the contracting professionals regarding which contracting process they believe is most vulnerable to fraud within their organization. Fourteen (43.75%) contracting professionals do not suspect any fraudulent activity in the contracting management process in their organization. Seven (21.88%) of the contracting professionals who responded to the survey believe “Contract Administration” to be the most susceptible to procurement fraud. Three (9.38%) contracting professionals selected the “Solicitation” process as the most susceptible to fraud in their organization. One (3.13%) contracting professional selected “I preferred not to answer.” Zero of the participants believed “Procurement Planning,” “Solicitation Planning,” and “Source Selection” were the most susceptible to fraud.

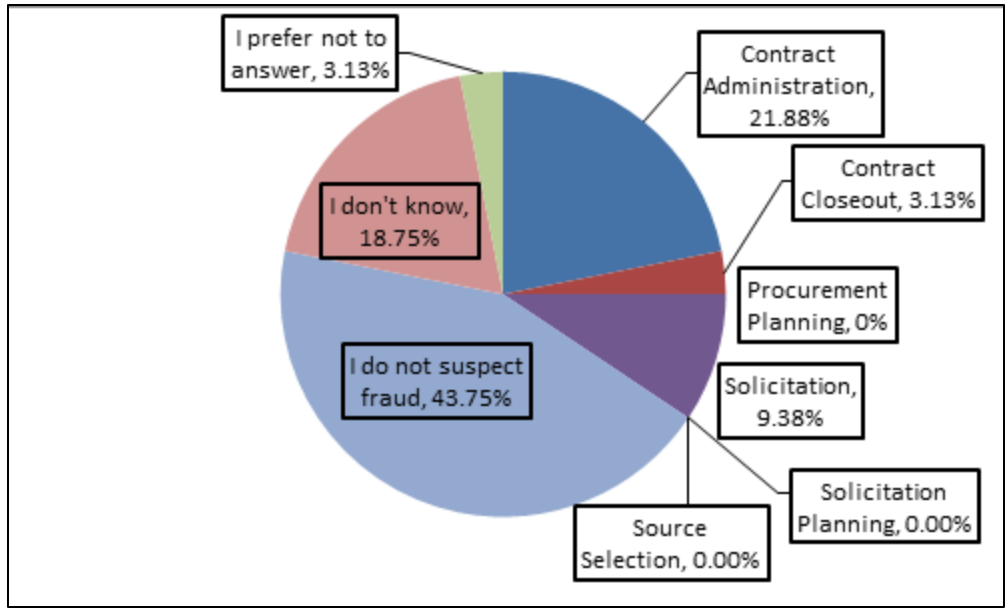


Figure 17. Percentage of Responses to Contracting Process Perception Question.

***b. Internal Control Components***

The survey asked the contracting professionals which control component they believed to be the most susceptible to fraud within their organization. Figure 18 shows 15 (46.88%) of the contracting professionals who responded to the survey do not suspect fraud in their organization, while seven (21.88%) of the contracting professionals answered “I don’t know.” Four (12.50%) of the contracting professionals believe “Monitoring” has the highest susceptibility to fraud. Two (6.25%) of the contracting professionals (one in each internal control component) believe “Control Activities” and “Information and Communications” are the most vulnerable to fraudulent activity, but none of the contracting professionals believed the “Control Environment” component is the most susceptible to fraud. Two (6.25%) of the contracting professionals selected “I prefer not to answer.”

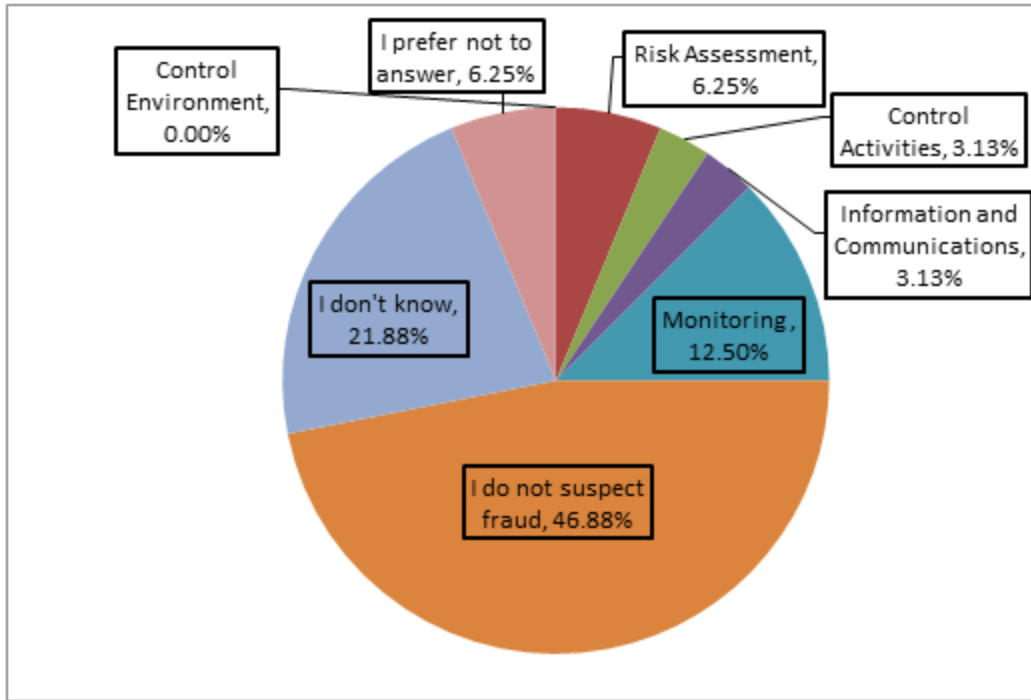


Figure 18. Percentage of Responses to Internal Control Perception Question.

***c. Procurement Fraud Scheme***

The survey asked the contracting professionals which procurement fraud scheme they believed their organization was most susceptible. Figure 19 shows 17 (53.13%) of the contracting professionals who responded to the survey do not believe their organization is susceptible to procurement fraud, while six (18.75%) answered “I don’t know.” Two (6.25%) of the contracting professionals selected the following: “I prefer not to answer,” “Conflict of Interest,” and “Collusion.” No one selected “Bid Rigging” as a susceptible fraud scheme in their organization.

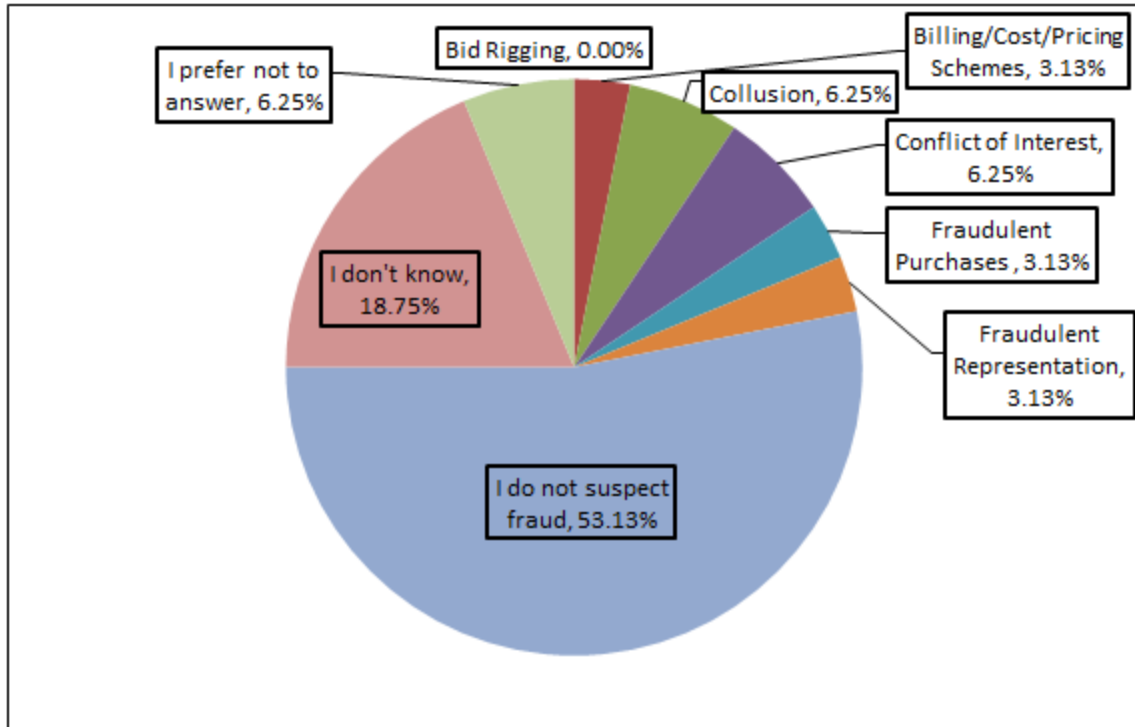


Figure 19. Percentage of Responses to Procurement Fraud Scheme Question.

This completes the findings of the research conducted. The next section discusses the analysis and implications of the findings of the knowledge-based questions with the perception questions of the organization.

## E. ANALYSIS AND IMPLICATIONS

### 1. Demographic

The first aspect of auditability is competent personnel. This survey assessed the contracting professionals' level of procurement fraud knowledge. As displayed in Figure 11, the findings showed the contracting professionals who had between 0 to 5 years of experience had approximately 9% higher scores than their counterparts with 6 to 20 years of experience. This may be due to the contracting professionals becoming complacent in their careers. As time goes on, the contracting professionals get further away from their initial institutional contracting training and/or may not be pursuing training on detecting fraud. This decrease in average scores might also indicate Level I contracting

professionals may have recently received procurement fraud training compared to their Level II counterparts.

DAWIA Level II certified contracting professionals scored (55.31%, Figure 12) similar to the contracting professionals who held no DAWIA certification (57.14%, Figure 12). This could indicate that having a DAWIA certification does not guarantee receiving training on detecting procurement fraud indicators. Alternatively, warranted contracting professionals scored higher than non-warranted contracting professionals (62.96% versus 57.19%, Figure 13). Selection for contracting officers to hold a warrant requires knowledge of acquisition policies and procedures, education, experience, and acquisition training courses (FAR, 2016). This could indicate that warranted professionals may have been required to receive training on detecting procurement fraud.

## **2. Contracting Processes**

The second aspect of auditability is capable processes. This survey assessed the contracting professionals' awareness of procurement fraud vulnerability within the organization's contracting process. When comparing the knowledge-based questions to the perception question on contracting processes, the lowest average score in the contracting processes were from source selection (42.50%, Figure 14) and contract closeout (26.56%, Figure 14). It is interesting to note that the contracting professionals deemed these same two contracting processes as the least vulnerable to procurement fraud. This indicates that the contracting professionals may not have been trained to detect procurement fraud within these processes. Additionally, this may also indicate that there might not be enough oversight during the sources selection and contract closeout process.

In Hidaka and Owens' (2015) research, they concluded that the biggest vulnerability in contracting processes, DOD-wide, was in procurement planning and contract administration. However, this current research indicates there may be sufficient training on procurement planning and contract administration in place at this Navy organization. This might indicate that the knowledge level for detecting actual fraud may

vary organization to organization based on the competency of the contracting professionals.

### **3. Internal Control Components**

The third aspect of auditability is effective internal controls. This survey assessed the contracting professionals' awareness of procurement fraud vulnerability within the organization's internal controls. When comparing the knowledge-based questions compared to the perception question regarding the internal control components, the lowest knowledge-based score was in the information and communication (50.00%, Figure 15) component. The next lowest was monitoring activities (54.19%, Figure 15). The survey participants do not believe that information and communication is susceptible to fraud in their organization. Four (12.50%, Figure 18) contracting professionals believe monitoring activities was susceptible to fraud in their organization. As previously discussed, COSO (2009) provided additional guidance on monitoring activities due to the lack of implementation in industry. The results of this research indicate a lack of knowledge regarding monitoring activities and possible fraud vulnerabilities. This indicates that perhaps the contracting professionals may not be able to detect fraud in areas in which they have not been trained. In contrast, the highest knowledge-based score was in the control environment (67.19%, Figure 15) component. None of the respondents believes that control environment is susceptible to procurement fraud. This may indicate that the management and structure of internal controls in the organization is effective.

### **4. Procurement Fraud Schemes**

In reference to the auditability triangle, procurement fraud schemes is one of the components. When comparing the knowledge-based questions to the perception question regarding the procurement fraud schemes, the lowest score was in conflict of interest (44.27%, Figure 16). Two (6.25%, Figure 18) of the contracting professionals surveyed believed that their organization was susceptible to this type of fraud. Yet two (6.25%, Figure 18) contracting professionals selected "I prefer not to answer" whether their organization was susceptible to procurement fraud. This could indicate the possibility of vulnerabilities to fraud in the organization.

Each of the organizational type questions had responses of “I prefer not to answer” by one or two contracting professionals. This may indicate that the organization does not want the reputation of fraud in their organization or that the organization does not try to deter procurement fraud by publishing the ramifications of fraud for those who have been caught.

## **5. Likert-Scale Questions**

The mean score of all the Likert-Scale organizational type questions was 4.24, which equates to just above “agree” (4.0). This is a reflection of the respondents’ perceptions that there are sufficient procedures in place in their organization to combat procurement fraud. However, the respondents only scored 58% on the knowledge-based questions. This discrepancy could indicate that more training is needed for the contracting professionals to detect procurement fraud.

## **F. RECOMMENDATIONS BASED ON ANALYSIS**

The findings from the research lead to several recommendations for change within the contracting profession, Navy contracting, and DOD procurement. The recommendations consist of additional procurement fraud training, improve monitoring activities of all contract processes, and improve understanding of procurement fraud schemes.

### **1. Add Procurement Fraud Training Programs**

The findings indicate that there is a gap between the knowledge level of contracting professionals and what they should know. According to DOD Instruction 5000.66, as long as an individual remains a member of the acquisition workforce, he/she must earn 80 Continuous Learning Points (CLP) every other year until they are no longer in an acquisition related position (USD[AT&L], 2005). Procurement fraud training such as CLM 049 could be mandated for contracting professionals who are DAWIA Level II certified. In addition to contracting professionals, the Contracting Officer’s Representative (COR) should complete training on procurement fraud during the contract closeout process.

## **2. Improve Monitoring Activities of All Contract Processes**

The findings indicate that the contract closeout process scored the lowest among the six contracting processes (26.56%, Figure 14), and one person perceived this process to be the most vulnerable to procurement fraud. There may have only been a small number of contracting professionals who work in the contract closeout section for this organization, which would justify the low scores as well as perception of fraud vulnerability. Since monitoring activities and information and communication both received low levels (54.19% and 50.00%, Figure 15), this may indicate that there is a direct correlation between monitoring activities and procurement fraud vulnerability, specifically to the contract closeout process. Improved monitoring activities will assist in detecting organizational weaknesses in areas of procurement fraud regardless of the contracting process. For organizations that are not aligned with COSO's 2013 internal control standards, they can refer to McNally's five step approach discussed earlier to ensure effective internal controls are in place. If the organization has relatively few professionals involved in contract closeout, a recommendation is to rotate the contracting professionals in each contracting process to strengthen process capability and ensure competent knowledge.

## **3. Improve Understanding of Procurement Fraud Schemes**

The lowest average score of the procurement fraud schemes were in the conflict of interest (44.27%, Figure 16) areas. Organizations should consider including ethics training to all of those involved in the contracting process. Contracting professionals should also limit personal relationships with individuals or companies seeking DOD contracts.

This completes the recommendations based on the analysis section. The next section discusses the summary for this chapter.

## **G. SUMMARY**

This chapter covered the findings, results, and analysis from the survey. The findings reflect the demographics of the contracting professionals who responded to the

survey. The researchers analyzed the responses by procurement processes, internal control components, and procurement fraud schemes. Based on the results and analysis of the responses, the researchers provided the implications from the findings and recommendations to improve procurement fraud detection for contracting professionals in the Navy and the DOD. The next chapter presents the summary, conclusions, and other areas for further research.

## **V. SUMMARY, CONCLUSIONS, AND AREAS FOR FURTHER RESEARCH**

### **A. SUMMARY**

The opportunity to commit procurement fraud is still a great concern of the federal government. Regardless of the budget, the possibility of fraud being committed should always be a concern. Therefore, competent personnel, capable contract management processes, and effective internal controls, which are the three aspects of auditability, are crucial to reduce the opportunities for fraud to be committed. Although this falls heavily on the contracting professionals, it is also the responsibility of all those who work in acquisition. The purpose of this research was to analyze the knowledge level of Navy contracting professionals regarding contract management processes, internal controls, and procurement fraud schemes.

### **B. CONCLUSIONS**

To answer the research questions presented in Chapter I, the researchers reviewed current literature, discussed the deployment of the survey tool, and analyzed the responses from the survey for findings so that recommendations could be provided.

The first research questions is:

- (1) “What is the [Navy’s] contracting professionals’ knowledge level of procurement fraud as related to the contract management process, internal control components, and procurement fraud schemes?” (Chang, 2013, p. 2)**

The analysis of the responses from the knowledge-based questions revealed that there is a significant discrepancy in the ability of the contracting professionals to detect procurement fraud. Among the contracting processes, procurement planning received the highest score (75.63%, Figure 14) and contract closeout received the lowest score (26.56%, Figure 14). When examining the responses to the internal control knowledge-based questions, control environment received the highest score (67.19%, Figure 15) and information and communications received the lowest score (50.00%, Figure 15). The contracting professionals’ knowledge level in detecting procurement fraud schemes also

presented a discrepancy. The highest score came from bid rigging (77.60%, Figure 16) and the lowest score came from conflict of interest (44.27%, Figure 16). These findings suggest vulnerabilities in the organization's contract management processes and internal control components as well as susceptibility to procurement fraud schemes.

The second research question is:

- (2) **“What is the [Navy’s] contracting professionals’ perception of procurement fraud vulnerability as related to the contract management process, internal control components, and procurement fraud schemes?” (Chang, 2013, p. 2)**

The results from the responses of the organizational perception questions reveal the contracting professionals are relatively self-assured in their organization's processes, knowledge level to detect procurement fraud, and capability to effectively respond to fraud, if detected. The average score of all of the responses to the Likert-scale questions was a 4.24. A score of three means “neither agree nor disagree” and a score of four means “agree.” When analyzing the responses by contracting processes, 43.75% (Figure 17) of those surveyed did not suspect fraud in any of the contracting processes. When analyzing responses by internal controls, 46.88% (Figure 18) did not suspect procurement fraud. Finally, when analyzing responses of possible procurement fraud schemes, 53.13% (Figure 19) of those surveyed did not suspect procurement fraud. All of the areas had a high response of “I don't know.” This suggests that even though the majority of the respondents do not suspect procurement fraud, they may not be competent enough to detect fraud indicators. The next section discusses areas for further research that can be conducted.

### **C. AREAS FOR FURTHER RESEARCH**

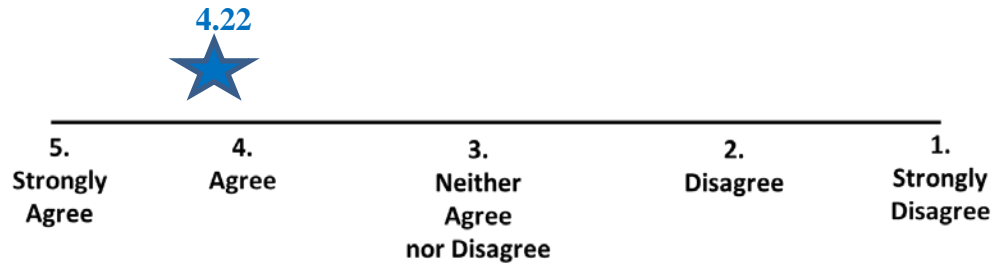
This section has four suggestions for further research. This research was limited to only a specific Navy contracting agency. The first suggestion is to expand this research to other Navy organizations. The literature review identified past research that was performed in this area for the Army and the Air Force. The second suggestion would be to compare the Navy with the Army and the Air Force. This will evaluate if there is a standard level of knowledge across the DOD. The third suggestion is to conduct research

assessing the procurement fraud knowledge level of senior leadership. Assessing the senior contracting officials or the heads of contracting activities will test if effective internal controls are in place against procurement fraud. The final suggestion is to expand the procurement fraud knowledge assessment to other federal contracting or non-contracting acquisition workforce. Procurement fraud affects all acquisition personnel; therefore, further research may be appropriate.

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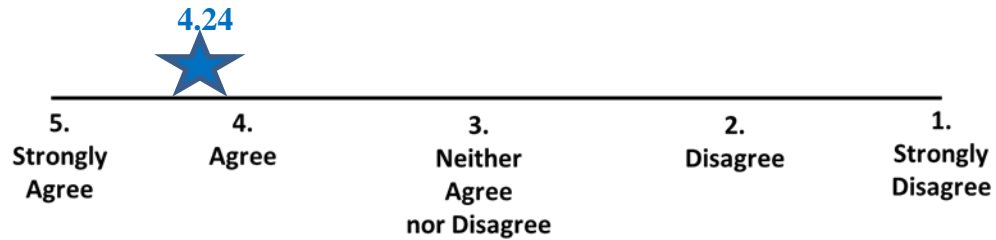
## APPENDIX: LIKERT SCALE QUESTIONS AND ANSWERS

- (1) “My department has clear lines of authority and responsibility”  
(Rendon & Rendon, 2015, p. 721).



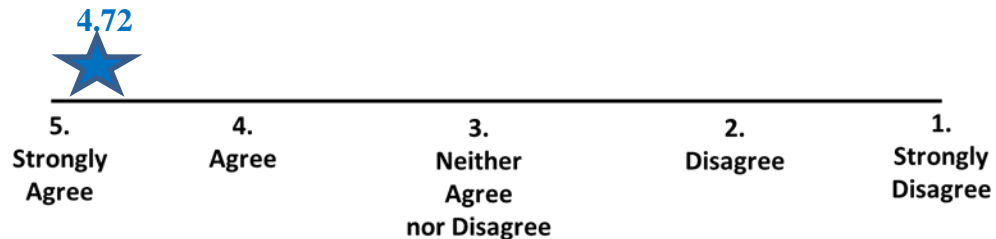
I prefer not to answer: 0

- (2) “My department is regularly reviewed by internal or external auditors” (Rendon & Rendon, 2015, p. 721).



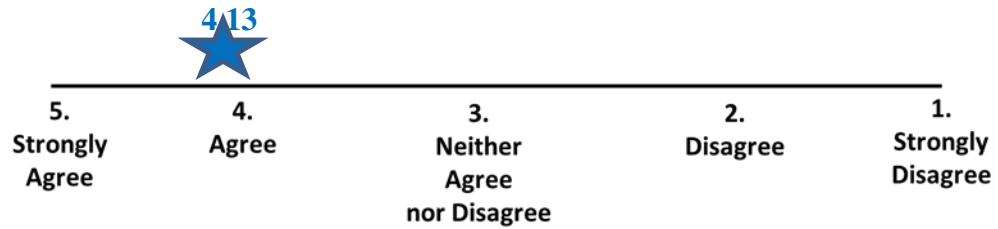
I do not know: 3

- (3) “I would report fraudulent or suspicious activity if I saw or suspected it” (Rendon & Rendon, 2015, p. 721).



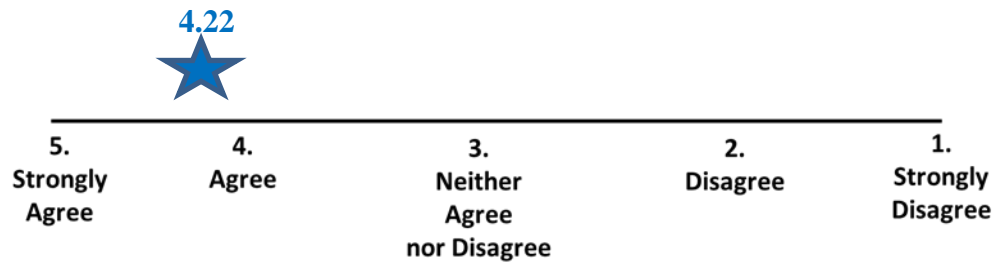
I do not know: 0

- (4) “I have a clear way of reporting fraudulent or suspicious activity within my organization” (Rendon & Rendon, 2015, p. 721).



I do not know: 2

- (5) “I know who to report to if I saw or suspected fraudulent activities” (Rendon & Rendon, 2015, p. 721).



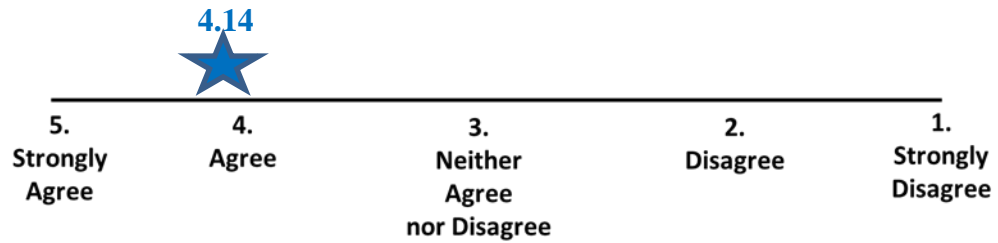
I do not know: 0

- (6) “I have adequate knowledge of contracting fraud schemes to perform my duties.” (Rendon & Rendon, 2015, p. 721).



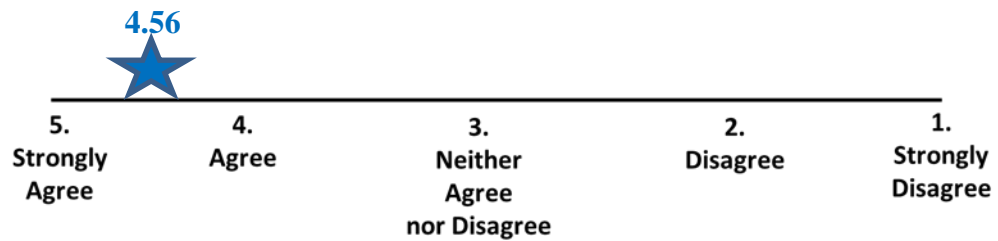
I do not know: 0

- (7) “Instances of reported suspected fraudulent or suspicious activity have been adequately investigated by my organization” (Rendon & Rendon, 2015, p. 721).



I do not know: 18

- (8) “Employees in my organization who are found to have participated in fraudulent activities will be subject to appropriate consequences” (Rendon & Rendon, 2015, p. 721).



I do not know: 7

- (9) “My organization places sufficient emphasis on the importance of integrity, ethical conduct, fairness and honesty in their dealings with employees, vendors and other organizations” (Rendon & Rendon, 2016, p. 721).



I do not know: 0

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## LIST OF REFERENCES

- Albrecht, W. S. (2014). *The compromise triangle* (Fellow notes). Retrieved from [http://wheatley.byu.edu/fellow\\_notes/individual.cfm?id=3](http://wheatley.byu.edu/fellow_notes/individual.cfm?id=3)
- Association of Certified Fraud Examiners (ACFE). (n.d.-a). Module 9: Payroll scheme. Retrieved from [http://www.acfe.com/content.aspx?id=6866&terms=\(scheme\)+](http://www.acfe.com/content.aspx?id=6866&terms=(scheme)+)
- Association of Certified Fraud Examiners (ACFE). (n.d.-b). What is fraud? Retrieved from <http://www.acfe.com/fraud-101.aspx>
- Bond, J. P. (2009). Efficiency considerations and the use of taxpayer resources: An analysis of proposed Whistleblower Protection Act revisions. *Federal Circuit Bar Journal*, 19(1), 107.
- Boss, S. R., Kisch, L. J., Andermeier, I., Shingler, R. A., & Boss, R. W. (2009, April). If someone is watching, I'll do what I'm asked: Mandatoriness, control and information security. *European Journal of Information System*, 18(1), 151–164.
- Castillo, J. C., & Flanigan, E. M. (2014). *Procurement fraud: A knowledge-level analysis of contracting personnel* (Master's thesis Naval Postgraduate School). Retrieved from Calhoun <http://hdl.handle.net/10945/44533>
- Chan, A. S. (2006). The benefits of early controls assessment: Prevention is better than a cure. *The CPA Journal*, 76(11), 6–9.
- Chang, P. W. (2013). *Analysis of contracting processes, internal controls, and procurement fraud schemes* (Master's thesis). Retrieved from <http://hdl.handle.net/10945/34642>
- Committee of Sponsoring Organizations of the Treadway Commission. (2013). *The updated COSO internal control-integrated framework* (No. 26). Retrieved from [https://www.coso.org/documents/990025p\\_executive\\_summary\\_final\\_may20\\_e.pdf](https://www.coso.org/documents/990025p_executive_summary_final_may20_e.pdf)
- Committee on Oversight and Government Reform. (2008). The AEY investigation. Retrieved from <http://democrats.oversight.house.gov/sites/democrats.oversight.house.gov/files/migrated/20080624102358.pdf>
- Contract. (n.d.). In Glossary: Defense acquisition acronyms and terms. Retrieved August 4, 2016 from Defense Acquisition University website: <https://dap.dau.mil/glossary/pages/3337.aspx>
- Cressey, D. R. (1972). *Other people's money: The psychology of embezzlement*. Montclair, NJ.

- Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management Review*, 22(1), 20–47.
- Defense Acquisition University. (2012). Solicitations. Retrieved from <https://aom.org/amj/>
- Defense Acquisition University (DAU). (n.d.-a). Certification standards and core plus development guide: Contracting Level I. Retrieved August 4, 2016, from <http://icatalog.dau.mil/onlinecatalog/CareerLvl.aspx?lvl=1&cflid=3>
- Defense Acquisition University (DAU). (n.d.-b). Certification standards and core plus development guide: Contracting Level II. Retrieved August 4, 2016, from <http://icatalog.dau.mil/onlinecatalog/CareerLvl.aspx?lvl=2&cflid=3>
- Defense Acquisition University (DAU). (n.d.-c). Certification standards and core plus development guide: Contracting Level III. Retrieved August 4, 2016, from <https://dap.dau.mil/career/pmt/Pages/Certification3.aspx>
- Denis, A. (2009, Summer). Stewardship and accountability in public contracting. *Journal of Contract Management*, 61. Retrieved from <https://www.inthepublicinterest.org/wp-content/uploads/Denis-CM-Journal-Summer-2009.pdf>
- Department of Defense Inspector General (DODIG). (2010). *Contingency contracting: A framework for reform* (D-2010-059). Arlington, VA: DODIG. Retrieved from <http://www.dodig.mil/audit/reports/fy10/10-059.pdf>
- Department of Defense Inspector General (DODIG). (2011). *Semiannual report to the Congress: April 1, 2011 - September 30, 2011*. Alexandria, VA: DODIG. Retrieved from [http://www.DODig.mil/sar/SAR\\_OCT\\_2011.pdf](http://www.DODig.mil/sar/SAR_OCT_2011.pdf)
- Department of State Inspector General (OIG). (2015). *Semiannual report to the Congress: April 1, 2015 to September 30, 2015*. Retrieved from [https://oig.state.gov/system/files/oig\\_fall\\_2015\\_sar.pdf](https://oig.state.gov/system/files/oig_fall_2015_sar.pdf)
- Department of Justice (DOJ). (2015). *Former supervisory contracting officer arrested in Navy bribery scandal [News release]*. Retrieved from <http://www.justice.gov/opa/pr/former-supervisory-contracting-officer-arrested-navy-bribery-scandal>
- Department of Justice (DOJ). (2016). *FY 2015 annual performance report and FY 2017 annual performance plan*. Retrieved from <https://www.justice.gov/doj/file/824711/download#page=12>
- Doss, M., & Jonas, G., (2004, October). *Section 404 reports on internal control: Impact on ratings will depend on nature of material weaknesses reported*. Moody's Investors Service, Global Credit Research. Retrieved from [https://pcaobus.org/Rulemaking/Docket018/008\\_Moody\\_s\\_Investors\\_Service.pdf](https://pcaobus.org/Rulemaking/Docket018/008_Moody_s_Investors_Service.pdf)
- Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *The Academy of Management Review*, 14(1), 57–74.

- Federal Acquisition Regulation (FAR), 48 C.F.R. ch. 1 (2016). Retrieved from <http://farsite.hill.af.mil/>
- France, S. (1990). The private war on pentagon fraud. *ABA Journal*, 7(6), 46.
- Garrett, G. A. (2007). *World class contracting* (4<sup>th</sup> ed.). Chicago, IL: CCH.
- Garrett, G. A. (2013). How to evaluate a purchasing system: Tools, techniques, and best practices. *Contract Management*, 53(1), 41–51.
- Government Accountability Office (GAO). (2001). *Internal control management and evaluation tool (GAO-01-131G)*. Retrieved from <http://www.gao.gov/assets/80/76615.pdf>
- Government Accountability Office (GAO). (2002, September). *Purchase cards: Navy is vulnerable to fraud and abuse but is taking action to resolve control weaknesses (GAO-02-1041)*. Retrieved from <http://www.gao.gov/new.items/d021041.pdf>
- Government Accountability Office (GAO). (2013, February). *High-risk series: An update (GAO-13-283)*. Retrieved from <http://www.gao.gov/assets/660/652133.pdf>
- Government Accountability Office (GAO). (2014). *Standards for internal control in the federal government (GAO-14-704G)*. Retrieved from <http://www.gao.gov/assets/60/665712.pdf>
- Government Accountability Office (GAO). (2015). *Defense acquisition workforce: Actions needed to guide planning efforts and improve workforce capability (GAO-16-80)*. Retrieved from <http://www.gao.gov/assets/680/674152.pdf>
- Grant Thornton LLP. (2009). *Guidance on monitoring internal control systems*. Committee of Sponsoring Organizations of the Treadway Commission (COSO). Retrieved from [http://www.coso.org/documents/COSO\\_Guidance\\_On\\_Monitoring\\_Intro\\_online1\\_002.pdf](http://www.coso.org/documents/COSO_Guidance_On_Monitoring_Intro_online1_002.pdf)
- Harrison, T. (2014). *Analysis of the FY 2015 defense budget*. Center for Strategic and Budgetary Assessments. Retrieved from [www.csbaonline.org/uploads/documents/ANALYSIS-OF-THE-FY-2015-DEFENSE-BUDGET.pdf](http://www.csbaonline.org/uploads/documents/ANALYSIS-OF-THE-FY-2015-DEFENSE-BUDGET.pdf)
- Hartman, E. A., Tower, C. B., & Sebor, T. C. (1994). Information sources and their relationship to organizational innovation in small businesses. *Journal of Small Business Management*, 32(1), 36–47.
- Hidaka, D., & Owens, J. L. (2015). *An analysis of internal controls for DOD contract management* (Master's thesis, Naval Postgraduate School). Retrieved from <http://hdl.handle.net/10945/47961>

- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
- Karpoff, J. M., Lee, D. S., & Vondracik, V. P. (1999). Defense procurement fraud, penalties, and contractor influence. *Journal of Political Economy*, 107(4), 809–842.
- LaCasse, C. (1995). Bid Rigging and the Threat of Government Prosecution. *The RAND Journal of Economics*, 26(3), 398–417.
- Laffont, J., & Martimort, D. (1998). Collusion and delegation. *RAND Journal of Economics*, 29(2), 280–305. Doi:10.2307/2555889
- Li, Y., Li, X., Liu, Y. & Barnes, B. R. (2011), Knowledge communication, exploitation and endogenous innovation: The moderating effects of internal controls in SMEs. *R&D Management*, 41(2), 156–172. Doi:10.1111/j.1467-9310.2011.00634.x
- McNally, J. S. (2013). *The 2012 COSO framework SOX compliance: One approach to an effective transition*. Committee of Sponsoring Organizations of the Treadway Commission (COSO). Retrieved from [http://www.coso.org/documents/COSO%20McNallyTransition%20Article-Final%20COSO%20Version%20Proof\\_5-31-13.pdf](http://www.coso.org/documents/COSO%20McNallyTransition%20Article-Final%20COSO%20Version%20Proof_5-31-13.pdf)
- Moschler, J., & Weitzner, J. (2012). Nine steps to a better statement of work. Retrieved from <http://dau.DODlive.mil/2012/11/12/nine-steps-to-a-better-statement-of-work/>
- Power, M. (1996). Making things auditable. *Accounting, Organizations and Society*, 21(2), 289–315.
- Prier, E., McCue, C., & Behara, R. (2010). The value of certification in public procurement: The birth of a profession? *Journal of Public Procurement*, 10(4), 512. Retrieved from [http://www.academia.edu/419641/Prier\\_McCue\\_and\\_Behara\\_2010\\_The\\_Value\\_of\\_Certification\\_in\\_Public\\_Procurement\\_The\\_Birth\\_of\\_a\\_Profession](http://www.academia.edu/419641/Prier_McCue_and_Behara_2010_The_Value_of_Certification_in_Public_Procurement_The_Birth_of_a_Profession)
- Rendon, R. G. (2007). Using a modular open systems approach in defense acquisitions: Implications for the contracting process. *2007 IEEE International Conference on System of Systems Engineering*, Monterey. 1–6. doi:10.1109/SYSOSE.2007.4304231
- Rendon, J. M., & Rendon, R. G. (2015). Contracting processes, internal controls and procurement fraud: A knowledge assessment. *Proceedings off the Twelfth Annual Acquisition Research Symposium*. 10(1). Retrieved from <http://www.acquisitionresearch.net/files/FY2015/SYM-AM-15-099.pdf>

- Rendon, R. G. (2015). Benchmarking contract management process maturity: A case study of the U.S. Navy. *Benchmarking: An International Journal*, 22(7), 1481–1508.
- Rendon, J. M., & Rendon, R. G. (2016). Procurement fraud in the U.S. Department of Defense: Implications for contracting processes and internal controls. *Managerial Auditing Journal*, 31(6/7), 748–767. Doi:10.1108/MAJ-11-2015-1267
- Rendon, R. G., & Rendon, J. M. (2015). Auditability in public procurement: an analysis of internal controls and fraud vulnerability. *International Journal of Procurement Management*, 8(6), 710–730.
- Roberts, R. N. (2010). Mandatory contractor codes of ethics and defense procurement integrity. *Journal of Public Procurement*, 10(2), 247–274.
- Rodriguez, E. (2013). *Analysis of the United States defense and civilian contracting workforce's training on procurement fraud, waste and abuse* (Master's thesis, Naval Postgraduate School). Retrieved from [http://calhoun.nps.edu/bitstream/handle/10945/37702/13Sep\\_Rodriguez\\_Elisban.pdf?sequence=1](http://calhoun.nps.edu/bitstream/handle/10945/37702/13Sep_Rodriguez_Elisban.pdf?sequence=1)
- Sabatier, P., & Mazmanian, D. (1979). The conditions of effective implementation: A guide to accomplishing policy objectives. *Policy Analysis*, 5(4), 481–504.
- Schwartz, M. (2014). *Defense acquisitions: How DOD acquires weapon systems and recent efforts to reform the process* (CRS Report RL34026), Washington, DCL Congressional Research Service. Retrieved from <https://www.fas.org/sgp/crs/natsec/RL34026.pdf>
- Solicitations. (2012). In ACQuipedia: Your online acquisition Encyclopedia. Retrieved August 4, 2016 from <https://dap.dau.mil/acquipedia/pages/articledetails.aspx?aid=c9ff043b-a90e-4213-9e9a6a15a1bc03e9>
- Stigler, G. J. (1957). Perfect competition, historically contemplated. *Journal of Political Economy*, 65(1), 1–17.
- Swartz M., Ginsberg, W., & Sargent, J. F. (2015). Defense acquisitions: How and where DOD spends its contracting dollars (CRS Report R44010). Washington, DC: Congressional Research Service. Retrieved from <https://www.fas.org/sgp/crs/natsex/R44010.pdf>
- Tan, L. H. (2013). *An analysis of internal controls and procurement fraud deterrence* (Master's thesis). Retrieved from <http://hdl.handle.net/10945/39022>
- Thai, K. V., & Grimm, R. (2000). Government procurement: Past and current developments. *Journal of Public Budgeting, Accounting & Financial Management*, 12(2), 231–247.

- Under Secretary of Defense for Acquisition, Technology, and Logistics (USD[AT&L]). (2005). *Operation of the defense acquisition, technology, and logistics workforce education, training, and career development program* (DOD Instruction 5000.66). Retrieved from [www.dtic.mil/whs/directives/corres/pdf/500066p.pdf](http://www.dtic.mil/whs/directives/corres/pdf/500066p.pdf)
- Under Secretary of Defense for Acquisition, Technology, and Logistics (USD[AT&L]). (2011, October). *Report to the Congress on contracting fraud*. Retrieved from <http://www.sanders.senate.gov/imo/media/doc/102011%20-%20DOD%20Fraud%20Report.pdf>
- Under Secretary of Defense for Acquisition, Technology, and Logistics (USD[AT&L]). (2016). Better buying power. Retrieved from <http://bbp.dau.mil/>
- Weigand, H., Johannesson, P., Andersson, B., Bergholtz, M., & Bukhsh, F. (2013). Conceptualizing auditability. *Proceedings of the CAiSE 13 Forum*, 49–56. Retrieved from <http://urn.kb.se/resolve?urn=urn:nbn:se:su:diva-97716>
- Wells, J. T. (2001, February 1). Why employees commit fraud. *Journal of Accountancy*, 191(2), 89–91. Retrieved from <http://www.journalofaccountancy.com/issues/2001/feb/whyemployeescommitfraud.html>
- Wells, J. T. (2005). *Principles of fraud examination* (1<sup>st</sup> ed.). Hoboken, NJ: John Wiley and Sons.
- Wilkinson, J. W. (2015, September 1). So you're climbing the ladder: Now what? *Contract Management*, 55(1), 24–29. Retrieved from <http://search.proquest.com/docvie/1781205588>
- Wyse, S. E. (2012). Advantages and disadvantages of surveys. Retrieved from <http://www.snapsurveys.com/blog/advantages-disadvantages-surveys/>

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