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DOD Procurement: An Analysis of Navy Contracting Professionals' Procurement Fraud Knowledge

1 November 2017

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Graduate School of Business & Public Policy

Naval Postgraduate School

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Abstract

The purpose of this research was to assess Navy contracting professionals' procurement fraud knowledge, as well as contract management processes and related internal controls, and to analyze their perceptions regarding their organization's procurement fraud susceptibility. This research study utilized a previously developed web-based survey designed to assess the DOD procurement workforce's knowledge of procurement fraud schemes, internal controls, and contract management processes as well as their perceptions of fraud susceptibility in each of these areas. Based on the research findings, the Navy may be lacking auditability in their organizations due to a lack of procurement fraud knowledge. Recommendations are provided to the Navy and DOD regarding increasing the procurement fraud knowledge of their contacting professionals in order to help decrease procurement fraud vulnerabilities within their organizations. As DOD agencies continue to strive for accountability, integrity, and transparency in their procurement of goods and services, procurement fraud knowledge and auditability will continue to increase in importance.

Key Words: Procurement fraud knowledge, contract management processes, auditability, fraud, internal controls, competence, procurement fraud

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About the Author

Dr. Juanita M. Rendon is a Certified Public Accountant (CPA), a Certified Fraud Examiner (CFE), and a Lecturer at the Naval Postgraduate School (NPS). Dr. Rendon teaches auditing, finance, and accounting courses at NPS. She is a former IRS Revenue Agent. She is a member of the American Institute of Certified Public Accountants and the Association of Certified Fraud Examiners. She has published articles in the *Journal of Contract Management,* the *International Journal of Procurement Management*, and the *Managerial Auditing Journal*, as well as book chapters in *Cost Estimating and Contract Pricing* (2008) and in *Contract Administration* (2009) by Gregory A. Garrett. She has presented at the National Contract Management Association (NCMA) World Congress conferences as well as at NCMA's National Education Seminars and at the Institute of Supply Management (ISM) conference. She is also the recipient of the 2008 NCMA Award for Excellence in Contract Management Research and Writing.

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Background

The first purchasing action in the federal government dates back to 1778, and the first significant procurement was for six large frigates for the new U. S. Navy in 1794 (Thai, 2001). Currently, the Department of Defense (DOD) procurement workforce manages millions of contract actions and billions of taxpayer dollars for the procurement of vital supplies and services using public resources ("Federal Procurement," 2017). Billions of public dollars are spent on supplies and services in order to achieve the mission of the DOD. As public funds decrease, the DOD must ensure that each hard-earned tax dollar by the American people is being spent properly with the highest degree of public trust.

The Department of Defense Inspector General (DOD IG) and the Government Accountability Office (GAO) have identified issues such as lack of adequately trained contracting personnel, lack of capable contract management processes, and lack of effective contract management internal controls within the federal government (DOD IG, 2009, 2014; GAO, 2013a). These contract management issues may make the DOD vulnerable to procurement fraud (Rendon & Rendon, 2015).

Previous procurement fraud research indicates that incompetent personnel, incapable contracting processes, or ineffective internal controls can leave organizations vulnerable to procurement fraud occurrences (Rendon & Rendon, 2016; Tan, 2013). Due to contracting professionals' fundamental position in the procurement process, they have the distinct opportunity of being at the forefront for detecting and deterring procurement fraud. However, in order to meet the challenge of being effective procurement fraud-fighters, contracting professionals need to be knowledgeable of procurement fraud schemes as well as contracting processes and internal controls.

With procurement fraud cases on the rise, in order to achieve its mission, it is important that the DOD procurement workforce have the necessary procurement fraud knowledge to properly manage the procurement function with integrity, accountability, and transparency (Cohen & Eimicke, 2008; Thai, 2014). Analyzing the procurement

fraud knowledge level of Navy contracting professionals and making recommendations for improvement of procurement fraud education within the Navy, as well as within the DOD, can help ensure that taxpayer funds are used effectively and the public interest is protected. Integrity, accountability, and transparency in federal government procurement are crucial.

Research Purpose and Research Questions

The purpose of this research was to assess Navy contracting professionals' procurement fraud knowledge, as well as contract management processes and related internal controls, and to analyze their perceptions regarding their organization's procurement fraud susceptibility. The research questions for this research study include the following:

1. What is the Navy contracting professionals' procurement fraud knowledge level of procurement fraud schemes as related to contract management processes, internal control components, and procurement fraud scheme categories?
2. What is the Navy contracting professionals' perception of procurement fraud as related to the contract management processes, internal control components, and procurement fraud scheme categories?

Importance of the Research

As the DOD embarks on a financial statement audit in FY2018, auditability is of utmost importance. For an organization to be auditable, it should ensure that its people are competent, its processes are capable, and its internal controls are effective (Rendon & Rendon, 2016). The purpose of this research study is to assess the Navy's contracting professionals' knowledge level of procurement fraud. Competent people, which is the focus of this research, is one of the components of the auditability triangle (Rendon & Rendon, 2016). Attorney Laura Duffy from the U.S. Department of Justice (DOJ) stated "The more we learn about the extent of the greed and corruption, the more determined we are to eviscerate it" (DOJ, 2015, para. 3). This research is vitally important as the findings may indicate whether or not additional procurement fraud training is needed throughout the Navy's contracting workforce in order to detect and deter procurement fraud.

Organization of Research Paper

This research paper is organized in three parts. This first part, which was previously discussed, provided the background and purpose of this research, the specific research questions, and the importance of this research. The second section provides a brief literature review on auditability theory and the three components of auditability as they relate to public procurement. Additionally, contract management processes, internal control components, the fraud triangle, and procurement fraud schemes are addressed. In the third part, the research methodology, the research findings, and implications of the findings to the Navy and DOD are discussed. This report concludes by providing recommendations to the Navy and DOD regarding procurement fraud knowledge and awareness. The following section discusses the literature review.

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Literature Review

This section provides a brief literature review that sets the groundwork for this research study. Scholarly journal articles, professional journal articles, government reports, and previous research studies in the areas of auditability, contract management phases, internal controls, and procurement fraud scheme categories are discussed.

Auditability

Auditability occurs at different levels of an organization and flows from the lowest level of an organization upwards. Power (2007) states that "auditability is a condition of possibility of all inspection and auditing practices and also a mode of organizational transformation" (p. 14). The process of "making things auditable" requires organizations to establish and actively manage an institutionally acceptable knowledge management system supporting its governance of processes and practices (Power, 1996, p. 289). Rollins and Lanza (2005) support the need for an increased emphasis on effective internal controls due to an increase in procurement fraud cases. In addition, Crawford and Helm (2009) contend that public sector governance is important to ensure a commitment to compliance, accountability, and transparency. Prior research supports the importance of competent personnel and competent organizations related to capable processes in order to ensure successful procurement projects (Frame, 1999).

In response to internal control weaknesses and resulting procurement process deficiencies, the DOD is trying to increase its emphasis on procurement training and the development of procurement workforce competencies (GAO, 2002) as well as auditability in its procurement organizations. Auditability within federal government organizations is necessary in order to ensure the integrity, accountability, and transparency of its procurement programs, fight the battle against procurement fraud, and ensure value for money (Rendon & Rendon, 2015).

As reflected in Figure 1, Rendon and Rendon (2015) contend that auditability encompasses competent personnel, capable processes, and effective internal

controls. Having competent people includes personnel having appropriate education, adequate training, and relevant experience. The focus of this research is on competent personnel in terms of procurement fraud knowledge. The following section discusses the contract management phases.

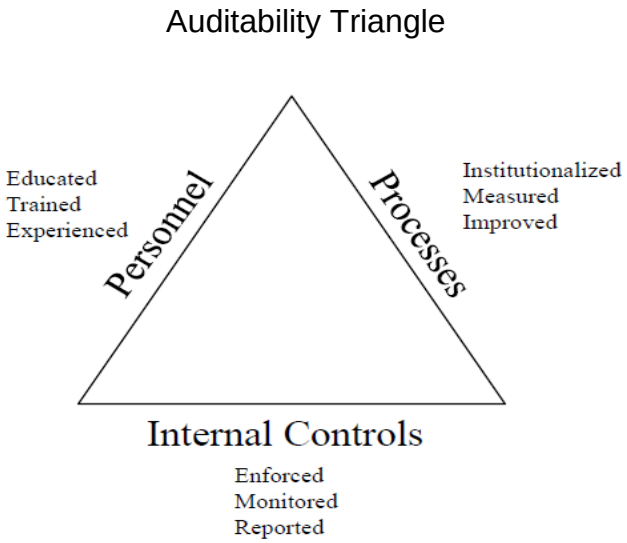

Figure 1: Auditability Triangle (Rendon & Rendon, 2015).

Contract Management Phases

Rendon and Snider (2008) state that the contract management phases include pre-award, award, and post-award. The pre-award phase consists of the procurement planning, solicitation planning, and solicitation processes, which are discussed in the following sections.

Pre-award: Procurement Planning

Procurement planning is "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 a vital aspect of contract management as it encompasses key activities such as defining the requirement, conducting market research, developing budgets and cost estimates, and conducting risk analysis (Rendon & Rendon, 2015b).

Pre-award: Solicitation Planning

Solicitation planning includes "buyer [understanding] its own requirements… and…able to communicate those requirements in the form of deliverables" (Garrett, 2007, p. 24). Solicitation planning includes key activities such as determining the procurement method and contract type, developing the solicitation document, determining the contract-award strategy, and finalizing the solicitation (Rendon & Rendon, 2015b).

Pre-award: Solicitation

A solicitation is "any request to submit offers or quotations to the government" (DAU, 2012, para. 1). The solicitation process involves obtaining information (proposals) from the sellers regarding how project needs can be met (Rendon, 2008). For the federal government, the three methods of procurement include using the government purchase card, using the Simplified Acquisition Threshold, and soliciting to contractors using the best value continuum as outlined in FAR 15 (FAR, 2016). The solicitation process includes key activities such as advertising the procurement opportunity, conducting a pre-proposal conference if needed, and developing and maintaining a qualified bidders' list (Rendon & Rendon, 2015b). The final solicitation is posted on the Federal Business Opportunities (FedBizOpps) website (https://www.fbo.gov). The award phase includes the source selection process, which is discussed in the following section.

Award: Source Selection

The award phase includes the source selection process of receiving proposals and applying the proposal evaluation criteria to select a supplier (Rendon, 2008). The source selection process includes key activities such as applying evaluation criteria to the management, cost, and technical proposals, negotiating with suppliers, and executing the contract award strategy (Garrett, 2013; Rendon, 2008). All aspects of the contract, such as cost, schedule, performance, and terms and conditions, are discussed with the seller prior to finalizing the negotiation and agreed-up contract (Rendon, 2008). The post-award phase includes the contract administration and contract closeout processes, which are discussed in the following sections.

Post-award: Contract Administration

Contract administration is “a process of ensuring each party’s performance meets the contractual requirements” (Garrett, 2013, p. 46). The contract administration process involves key activities such as conducting a pre-performance conference, monitoring the contractor’s work results, measuring the contractor’s performance, and managing the contract change control process (Rendon, 2008).

Post-award: Contract Closeout

Contract closeout is when “all administrative matters are concluded on a contract that is otherwise physically complete” (Garrett, 2013, p. 47). The contract closeout process includes key activities such as processing government property dispositions, finalizing acceptance of products or services, making final contractor payments, and documenting the contractor’s final past-performance report (Rendon, 2008). A government contract can end by being successfully completed, by being terminated for convenience of the government, or by being terminated for default, and it must be closed out regardless of how the contract ended (Rendon, 2008). Furthermore, the Contractor Performance Assessment Reporting System (CPARS) shows the evaluation of the contractor, which allows contractors to develop past performance that will be taken into consideration for future possible contracts (Grennan & McCrory, 2016).

In addition to capable contracting processes, as previously discussed, effective internal controls are also important for federal agencies to become more auditable (Rendon & Rendon, 2015). The following section discusses the integrated internal control framework and the importance of having effective internal controls.

Internal Controls

Effective internal controls ensure the organization is "[complying] with laws and regulations, monitoring procedures to assess enforcement, and reporting material weaknesses" (Rendon & Rendon, 2015, p. 716). The history of an integrated internal control framework dates back to 1992, when the Committee of Sponsoring Organizations (COSO) of the Treadway Commission was formed (COSO, 2013, p. 3). The COSO is currently composed of the American Institute of Certified Public Accountants (AICPA), the Institute of Internal Auditors (IIA), the Federal Executives Institute (FEI), the American Accounting Association (AAA), and the Institute of Management Accountants (IMA). The COSO defined internal controls and established the Internal Control Integrated Framework, which includes five internal control components (COSO, 2013).

In May 2013, COSO updated its internal control integrated framework, which now includes 17 principles within the five components of internal control (COSO, 2013). In September 2014, the GAO updated its *Standards for Internal Control for the Federal Government* (Green Book) (GAO, 2014). Figure 2 illustrates the five components of "control environment, risk assessment, control activities, information and communication, and monitoring activities" (COSO, 2013, p. 6).

Figure 2: Relationship of Internal Control Objectives and Components (COSO, 2013, p. 6).

The five components of the integrated internal control framework are discussed in the following sections (COSO, 2013).

Control Environment. The control environment component of the integrated internal control framework sets the tone at the top and is related to the integrity and ethical behavior of the organization's management (COSO, 2013). As illustrated in Figure 3, within the control environment, the five principles include exhibits a commitment to integrity; exercises oversight responsibility; establishes structure, authority, and responsibility; demonstrates commitment to competence; and enforces accountability (COSO, 2013). These principles have an effect on all personnel throughout all levels of any organization (McNally, 2013). Doss & Jonas (2004) contend that not having a strong control environment may decrease the ability of management to lead properly. A weak control environment can make an organization vulnerable to fraud, waste, and abuse and has the potential for loss of dollars, time, and personnel (GAO, 2006). For government organizations, public trust is at risk of being eroded, and public funds are at risk of being lost when the control environment is weak and compromised.

Risk Assessment. The risk assessment component of the integrated internal control framework involves assessing what could go wrong within the organization and what management can do to mitigate any potential risks, including fraud risks (COSO, 2013; GAO 2014). This component also includes determining what can be done to correct what went wrong within an organization (COSO, 2013). As illustrated in Figure 3, within the risk assessment component, the four principles of risk assessment include sets specific suitable objectives; identifies and analyzes risk; assesses fraud risk; and identifies and analyzes significant changes (COSO, 2013). Risk tolerance should not be thought of as compliance, which indicates whether or not the rules and regulations are being followed (GAO, 2014). Risks, such as fraud, waste and abuse, incorrect financial reporting, and mismanagement of assets, may increase if perceived pressure, perceived opportunity, and rationalization are present, which are the elements of the fraud triangle discussed later (Figure 3). Rendon and Rendon (2015) contend that risk has the potential to increase when "weak internal controls, poor

leadership, poor accountability, and lack of transparency nurture the opportunity for fraud in an organization" (p. 717).

Control Activities. The control activities component of the integrated internal control framework incorporates all of the control procedures that the organization needs to implement in order to reach its goals and objectives (COSO, 2013). As illustrated in Figure 3, within the control activities component, the three principles of control activities include creates control procedures, develops technology controls, and implements control procedures through policies (COSO, 2013). Segregation of duties or separation of duties or two-person integrity are examples of control activities which help decrease risk and segregate the authority, custody, and accounting recording functions in order to reduce possible conflicts of interest or fraud (GAO, 2014). It is of vital importance that no individual person be put in charge of all the procedures within a given process in an organization. Allowing this to happen in an organization opens the door for possible fraud vulnerabilities where unethical people are given the opportunity to commit fraud.

Information and Communication. The information and communication component of the integrated internal control framework includes internal and external communications both vertically and horizontally within an organization (COSO, 2013). In addition, the accounting system utilized by the organization is included in this component (COSO, 2013). As illustrated in Figure 3, within the information and communication component, the three principles of information and communication include uses relevant information, communicates internally, and communicates externally (COSO, 2013). Effective communication internally and externally and throughout all levels of an organization needs to be in the appropriate form, to the appropriate people, and at the appropriate time, which includes not only collecting and distributing information, but also protecting the information within the organization (GAO, 2001).

Monitoring Activities. The monitoring activities component of the integrated internal control framework entails the close observation of all of the other internal control components to ensure that the controls are being practiced appropriately and

are helping the organization reach its management's goals (COSO, 2013). As illustrated in Figure 3, within the monitoring activities component, the two principles of monitoring activities include conducts ongoing or separate evaluations and assesses and communicates deficiencies to the appropriate people (COSO, 2013). Management must have the capability to update, change, remove, or add any appropriate controls when necessary. Monitoring activities are vitally important for ensuring an ongoing process of planning, implementing, reviewing, and adjusting controls (COSO, 2013).

Figure 3 illustrates the five internal control components and their associated principles (COSO, 2013, p. 6). COSO (2013) states that an organization should apply "all principles to operations, reporting, and compliance objectives to achieve effective internal control" (p. 3; Grennan & McCrory, 2016).

In addition to effective internal controls, competent personnel are vitally important in order for federal agencies to be auditable. Material weaknesses in a federal agency's internal control system can make the agency vulnerable to procurement fraud. The procurement fraud schemes are discussed in the next section.

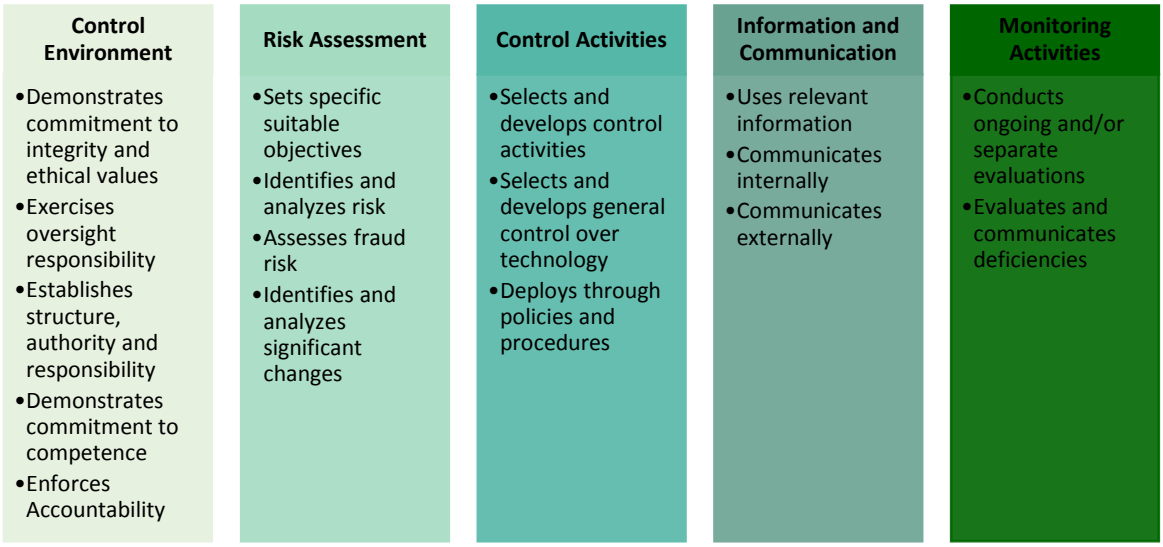

Figure 3: COSO's 17 Fundamental Principles. Adapted from COSO (2013, p. 6).

Procurement Fraud Scheme Categories

Internal controls that are not appropriately mandated and implemented may leave the federal government vulnerable to procurement fraud. Tan (2013) found that incidents of procurement fraud in the DOD and the federal government could be traced to ineffective internal controls which left government organizations vulnerable to fraud, waste, and abuse.

The Association of Certified Fraud Examiners (ACFE), a fraud-fighting organization based in Austin, Texas, defines fraud as "a knowing misrepresentation of the truth or concealment of a material fact to induce another to act to his or her detriment" (ACFE, 2016, para. 2). In the 1940s, after interviewing embezzlers in jail, Cressey (1972), a criminologist, found that that the embezzlers had a perceived pressure (motivation), a perceived opportunity, and a justification (rationalization) in common, now known as the fraud triangle (Wells, 2001). Individuals with these three common traits are more likely to commit fraud in an organization (Albrecht, 2014; Wells, 2001). The fraud triangle is illustrated in Figure 4 (Albrecht, 2014).

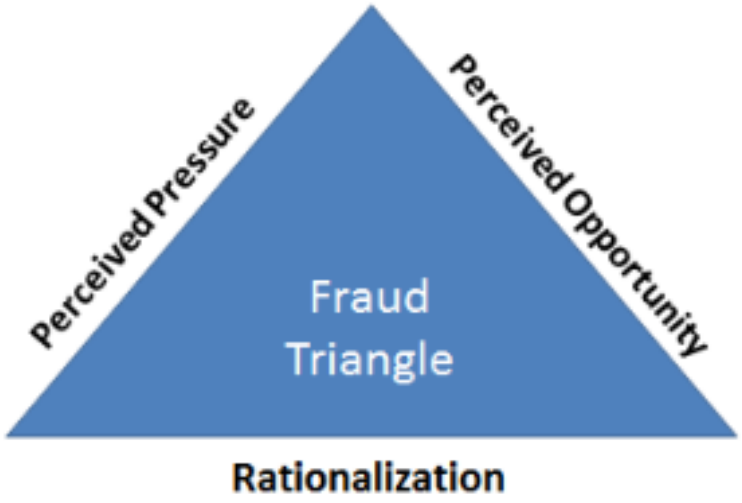

Figure 4: Fraud Triangle (Albrecht, 2014, para. 1).

Occupational fraud, also known as internal fraud, is “the use of one’s occupation for personal enrichment” (ACFE, 2016, para. 5). External fraud examples include dishonest suppliers, dishonest customers, and dishonest third parties (ACFE, 2016). While there are numerous fraud schemes, they can be categorized into six major procurement fraud scheme categories to include collusion, bid rigging, conflict of interest, billing schemes, fraudulent purchases, and fraudulent representation, which are illustrated in Table 1 (Rendon & Rendon, 2005b).

Collusion

Collusion is “a situation where two or more employees work together to commit fraud by overcoming a well-designed internal control system” (Wells, 2005, p. 122). The collusion fraud scheme category includes procurement fraud schemes such as kickbacks, bribery, and deliberate split purchases (Rendon & Rendon, 2015b). Kickbacks may occur when government officials receive something of value in exchange for a favor for personal gain. An example of bribery and kickbacks can be illustrated in a fraud case where contractors bribed the U.S. military in exchange for kickbacks in construction projects (DOD IG, 2015). The Copeland “Anti-Kickback Act” was passed by Congress in 1934 to prosecute people for violating the law and makes violators subject to imprisonment and/or fines (Thai & Grimm, 2000). Deliberate split purchases involve intentionally splitting purchase orders into separate purchases to avoid having to follow the Federal Acquisition Regulation (FAR) rules and regulations. In addition, in the 2012 Global Fraud Study conducted by the ACFE, it was determined that “corruption and billing schemes pose the greatest risks to organizations throughout the world and that for all geographic regions, these two scheme types comprised more than 50% of the frauds reported to us” (ACFE, 2012, p. 4).

Bid Rigging

Bid rigging “is a process by which an employee assists a vendor to fraudulently win a contract through the competitive bidding process” (Wells, 2005, p. 283). Bid rigging schemes include collusion bidding by contractors, excluding qualified bidders, leaking bid data, manipulation of bids, rigged specifications, and unbalanced bidding

(Rendon & Rendon, 2015b). A specifications scheme may involve paying off the buyer in exchange for "tailoring the specifications to a particular vendor" (Wells, 2005, p. 268). During the solicitation process, "bid pooling may occur where several bidders conspire to split up the contract and each gain an amount of work" (Wells, 2005, p. 269). A bid rigging fraud scheme may also occur during the solicitation process where a shell company, a fictitious company, bids and wins a bid (Wells, 2005). In addition, bid rigging during the solicitation process may also include such things as vendors failing to bid, price inflation, and last minute bid withdrawals (Wells, 2005). Bid rigging may also involve the use of bribes and kickback agreements during the source selection process (Wells, 2005). Falsification of information during the bidding process creates an unfair advantage to other honest companies attempting to bid and win contracts from the federal government (Wells, 2008)

Conflict of Interest

Conflict of interest is "when an employee, manager, or executive has an undisclosed economic or personal interest in a transaction that adversely affects the company" (Wells, 2005, p. 273). Conflict of interest fraud schemes include conflicts of interest, unjustified sole source awards, and phantom vendors (Rendon & Rendon, 2015b). Phantom vendors, also known as ghost vendors, are fictitious or non-existent vendors.

FAR 2.101-1 provides guidelines regarding conflicts of interest and states that federal employees need to strictly adhere to ethical standards (FAR, 2016). 18 USC §§ 208 and 209 provide protections against conflicts of interest. For example, under Section 208, contracting personnel are prohibited from financially benefiting from contracts that they administer or receiving a financial personal gain (Roberts, 2010). Furthermore, under Section 209, contracting officers are prohibited from receiving additional pay outside of federal wages and earned benefits (Roberts, 2010).

Billing, Cost, and Pricing Schemes

Billing, cost, and pricing schemes involve "fraudulent payment by submitting invoices for fictitious goods or services, inflated invoices, or invoices for personal purchases" (Wells, 2005, p. 98). Billing, cost, and pricing schemes include such things

as cost mischarging; defective pricing; change order abuse; co-mingling of contracts; false, inflated, or duplicate invoices; and false statement claims (Rendon & Rendon, 2015b). Labor cost mischarging by contractors may include padding employee timecards and adding extra hours not actually worked by employees and then charging the government for the extra hours. Another possible fraudulent activity involves ghost employee schemes where contractors create fictitious personnel on their payroll and then bill the federal government for the fictitious hours worked by the ghost employees.

Fraudulent Purchases

Fraudulent purchases involve purchasing "personal items with company money" (Wells, 2005, p. 114). Fraudulent purchases include purchases for personal use or resale, unnecessary purchases, and imprest fund abuse (Rendon & Rendon, 2015b). GAO (2002) found that fraudulent purchases occur in the government purchase card programs within the federal government.

Fraudulent Representation

Fraudulent representation includes failure to meet contract specifications and product substitution (Rendon & Rendon, 2015b). Product substitution is also known as "bait and switch." AEY, Inc., a company that won a contract to distribute weapons to Afghanistan, substituted the ammunition contracted for outdated and substandard People's Republic of China ammunition from an Eastern bloc country and intentionally hid original Chinese stickers to conceal the manufacture location ("Committee on Oversight and Government Reform," 2008).

Table 1: Categories of Procurement Fraud Schemes (Adapted from Rendon & Rendon, 2015b).

Categories of Procurement Fraud Schemes					
Collusion	**Conflict of Interest**	**Bid Rigging**	**Billing/Cost/ Pricing Schemes**	**Fraudulent Purchases**	**Fraudulent Representation**
Bribes & Kickbacks	Conflict of Interest	Collusive Bidding by Contractors	Cost Mischarging	Purchases for Personal Use or Resale	Failure to Meet Contract Specifications
Split Purchases	Unjustified Sole Source Awards	Excluding Qualified Bidders	Defective Pricing	Unnecessary Purchases	Product Substitution
	Phantom Vendor	Leaking Bid Data	Change Order Abuse	Imprest Fund Abuse	
		Manipulations of Bids	Co-mingling of Contracts		
		Rigged Specifications	False, Inflated, or Duplicate Invoices		
		Unbalanced Bidding	False Statement and Claims		

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Conceptual Framework

The conceptual framework for this research entails the auditability triangle. Rendon and Rendon (2015) contend that "the theory of auditability incorporates aspects of governance which emphasizes effective internal controls, capable processes, and competent personnel" (p. 715). These major elements of the auditability triangle, which are previously illustrated in Figure 1, present the conceptual framework for this research and focus on the competent personnel element.

In order for federal procurement organizations to be auditable, they need to have competent people, capable processes, and effective internal controls. It is crucial that the federal government acquisition workforce include competent people who are appropriately educated, properly trained, and adequately experienced in the area of federal government contracting. Prior research indicates that many personnel involved in the acquisition of goods and services, are, in fact, not actual members of the acquisition workforce. Therefore, these non-acquisition personnel may not be receiving the required education and training needed to perform their acquisition duties (GAO, 2002, 2011).

In addition to competent personnel, federal acquisition organizations also need to have capable contract management processes. The Contract Management Maturity Model (CMMM) has identified less-than-capable contracting processes in acquisition organizations (Rendon, 2008, 2009, 2010, 2011). Prior research utilizing the CMMM found contracting processes lacking process strength, management support, process measurement, and process improvement (Rendon, 2008, 2009, 2010, 2011).

Furthermore, federal acquisition organizations also need to have effective internal controls. The procurement deficiencies identified by the DOD IG were due to material internal control weaknesses in the procurement processes (DOD IG, 2009, 2014).

As previously stated, prior procurement fraud research shows that not having competent personnel, not having capable contracting processes, or not having effective internal controls can often open the door to higher risks to vulnerability to

procurement fraud (Rendon & Rendon, 2016; Tan, 2013). Since contracting professionals play an essential role in the procurement process, they have unique opportunities for detecting and deterring procurement fraud. However, without proper and adequate knowledge of procurement fraud schemes, as well as effective internal controls and capable contracting processes, these contracting professionals may not be able to deter or detect significant procurement fraud activities within the federal government organizations.

Therefore, the purpose of this research is to assess Navy contracting professionals' procurement fraud knowledge, as well as contract management processes and related internal controls, and to analyze their perceptions regarding their organization's procurement fraud susceptibility. The research is conducted using a web-based assessment tool. The research methodology is discussed in the following section.

Research Methodology

The research methodology for this research includes a literature review covering contract management phases, internal control components, and procurement fraud schemes. The literature review consists of the Government Accountability Office (GAO) reports in terms of contracting processes within the DOD, common procurement fraud indicators, and internal controls within the DOD. In addition, non-governmental literature is also reviewed regarding the fraud triangle and procurement fraud schemes. Furthermore, this research methodology involved the use of a previously developed knowledge assessment tool that was used to assess Navy contracting professionals. The assessment tool and the assessment tool deployment are discussed in the next section.

Assessment Tool

This research utilized a previously developed assessment tool that can be used to assess contracting professionals' knowledge level of contract management processes, internal controls, and procurement fraud as well as to assess their perceptions of susceptibility to procurement fraud within their organizations. The web-based assessment tool includes 27 knowledge-based questions regarding contracting processes, internal controls, and procurement fraud schemes.

Assessment Tool Development

In order to conduct the assessment, the web-based assessment tool was deployed to contracting professionals within a Navy acquisition agency. Based on the research findings, recommendations are made to the Navy and DOD for improving its contracting professionals' procurement fraud knowledge as well as its contract management processes and internal controls. These recommendations are provided to help the Navy and the DOD increase their contracting professionals' procurement fraud knowledge and awareness, improve contract management process capability, and strengthen procurement internal controls. The number of questions related to

each phase of the contract management process, internal control component, and procurement fraud scheme are shown in Figure 5.

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		
Total	27	Total	27	Total	27

Figure 5: Assessment Tool Items by Categories. Adapted from Chang (2013) and Grennan & McCrory (2016, p. 39).

Furthermore, the web-based assessment tool also includes 12 organization-based questions related to the contracting officers' perceptions of internal controls within their organizations. These survey questions were designed to assess the contracting officers' perceptions of their organizations regarding susceptibility to fraudulent activity. The organization-based items were adopted and modified from the Internal Control Survey developed by the New York State Internal Control Association (NYSICA, 2006).

Assessment Tool Deployment

After following the appropriate Institutional Review Board (IRB) procedures and obtaining the protocol approval from the Naval Postgraduate School IRB office, the web-based assessment tool was deployed using the Naval Postgraduate School online survey-hosting service LimeSurvey. The survey link was e-mailed to a Navy-designated person who was not in the chain of command, who forwarded the e-mail message with the web link to the Navy contracting professionals at a Navy contracting command. The web-based assessment tool was available for a four-week period. The next section discusses the research findings and analyses.

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Research Findings

Analysis of Knowledge Assessment Findings

The web-based assessment tool was deployed on January 26, 2016, to a total eligible population of 82 Navy contracting professionals located at a Navy contracting command. The assessment tool was initiated by 44 respondents, and was completed by 32 respondents, resulting in a response rate of 39% (Grennan & McCrory, 2016).

All of the 32 respondents were Navy civilian contracting professionals. Figures 6–8 reflect demographics of the respondents. The figures show the number of respondents as well as the percentage. For example, 1, 3% for the 11 to 20 years category in Figure 6 indicates one respondent, which was 3% of the total respondents had 11 to 20 years of experience. Regarding the experience level, the majority of the respondents (10 respondents, 32%) had 0–2 years of experience. Regarding their DAWIA levels shown in Figure 7, the majority of the respondents (15 respondents, 47%) had DAWIA Certification Level II, and 22% (7 respondents) had no DAWIA certification levels. Regarding their warrant status shown in Figure 8, the majority of the respondents (78.13%) did not have a warrant.

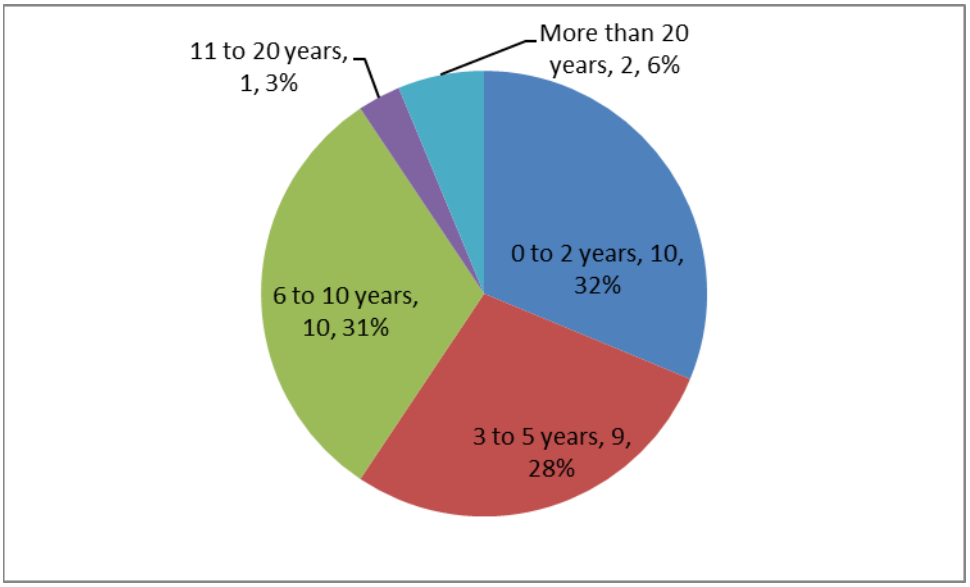

Figure 6: Number of Participants by Years of Experience (Grennan & McCrory, 2016).

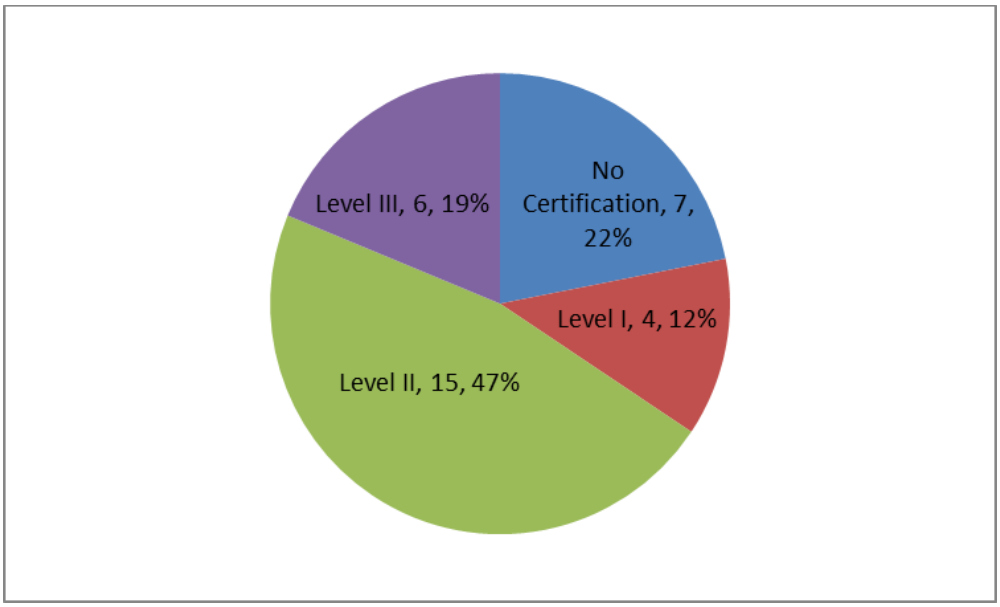

Figure 7: Number of Participants by DAWIA Certification Level (Grennan & McCrory, 2016).

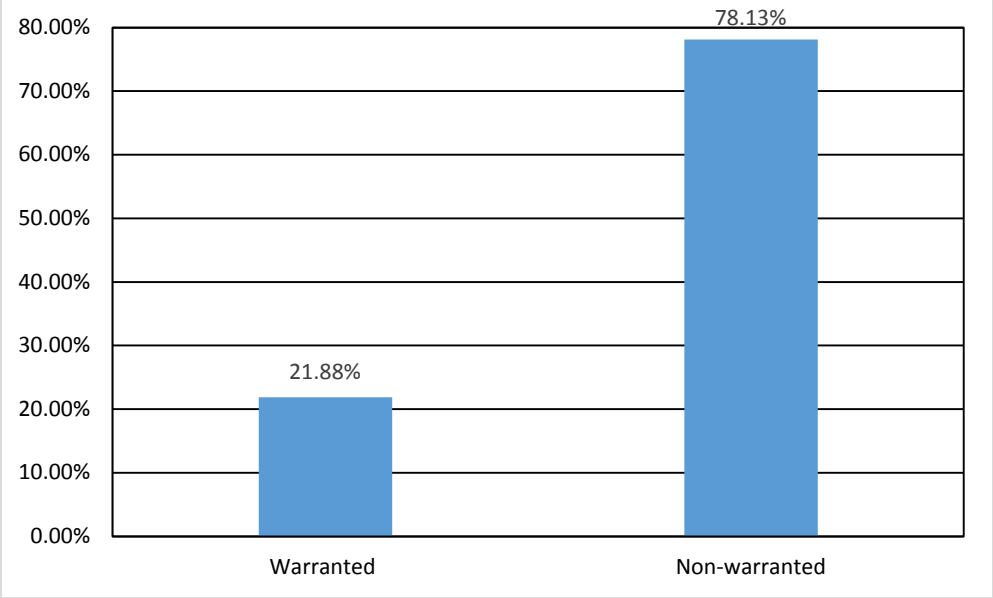

Figure 8: Percentage of Participants by Warrant Status (Grennan & McCrory, 2016).

The average score on the knowledge portion of the web-based assessment tool was 58% correct of the 27 knowledge-based questions. Figures 9–11 reflect the average score based on years of experience level, DAWIA certification level, and warranted contracting officer status. The results of the analysis show some differences in average scores by experience and DAWIA levels. As contracting experience and DAWIA level increases, so does the average score on the knowledge assessment. Although warranted contracting professionals scored higher than non-warranted contract specialists, there is less difference in average scores between non-warranted and warranted contracting professionals.

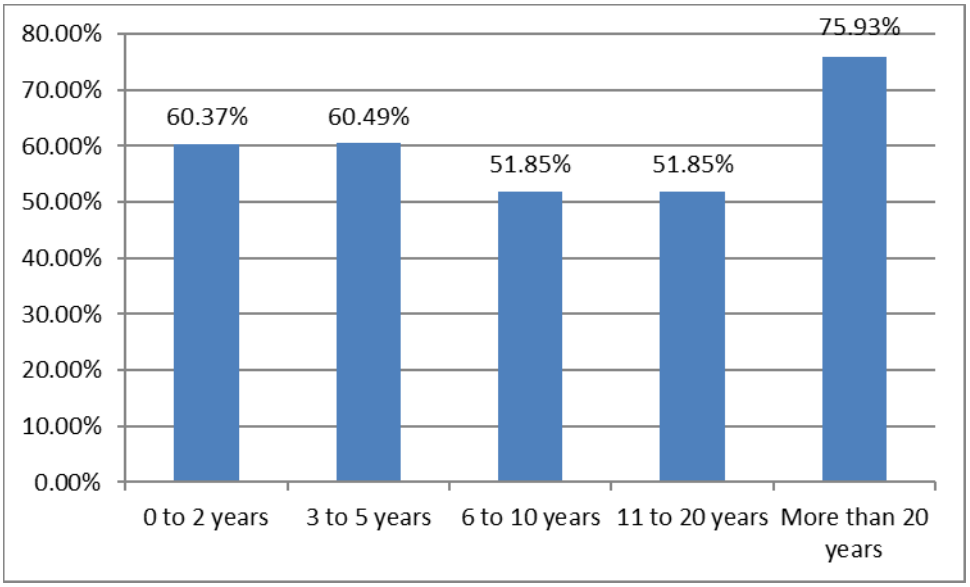

Figure 9: Average Score by Years of Experience (Grennan & McCrory, 2016).

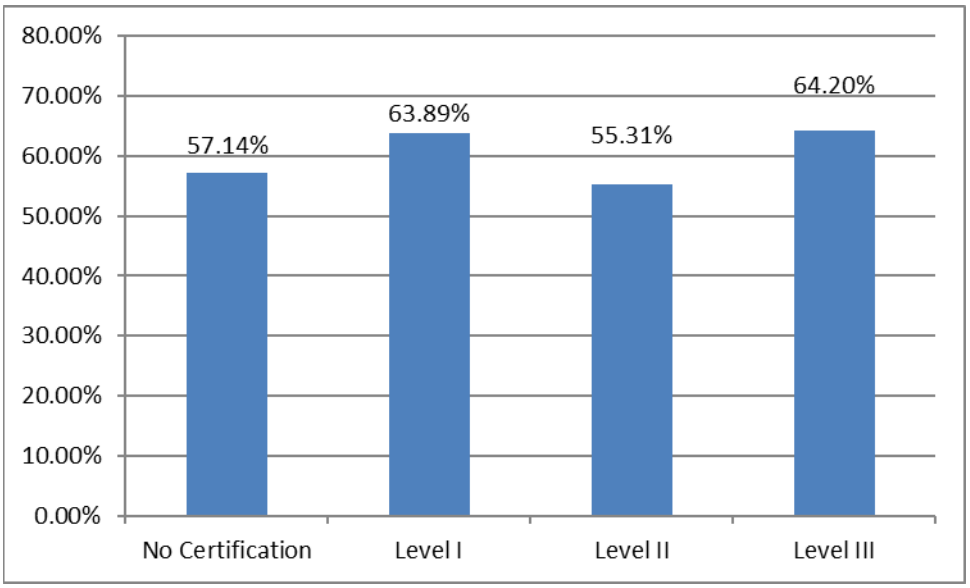

Figure 10: Average Score by DAWIA Level (Grennan & McCrory, 2016).

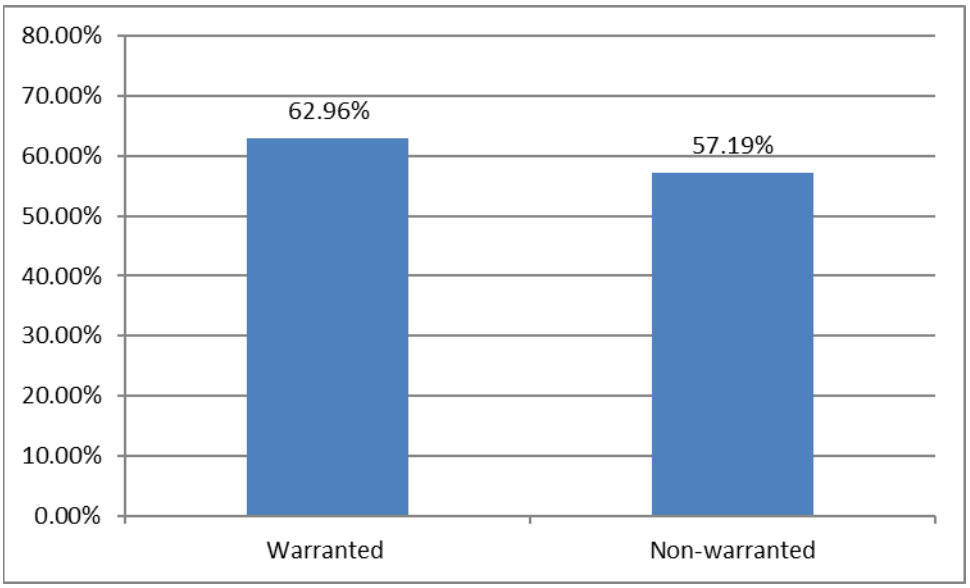

Figure 11: Average Score by Warrant Status (Grennan & McCrory, 2016).

As previously stated, each knowledge assessment question was related to contract management processes, internal control components, and procurement fraud schemes. Figures 12–14 reflect the average score based on each of these areas.

As can be seen in these figures, there is variation in the average knowledge assessment score among these three areas. From the perspective of the contract management process as shown in Figure 12, assessment knowledge questions related to the procurement planning process had the highest average score, compared to questions related to contract closeout, which had the lowest score. From the perspective of the internal control components as shown in Figure 13, assessment knowledge questions related to the control environment component had the highest average score, compared to questions related to information and communication, which had the lowest score. From the perspective of procurement fraud schemes as shown in Figure 14, assessment knowledge questions related to bid rigging scheme had the highest average score, compared to questions related to conflict of interest schemes, which had the lowest score.

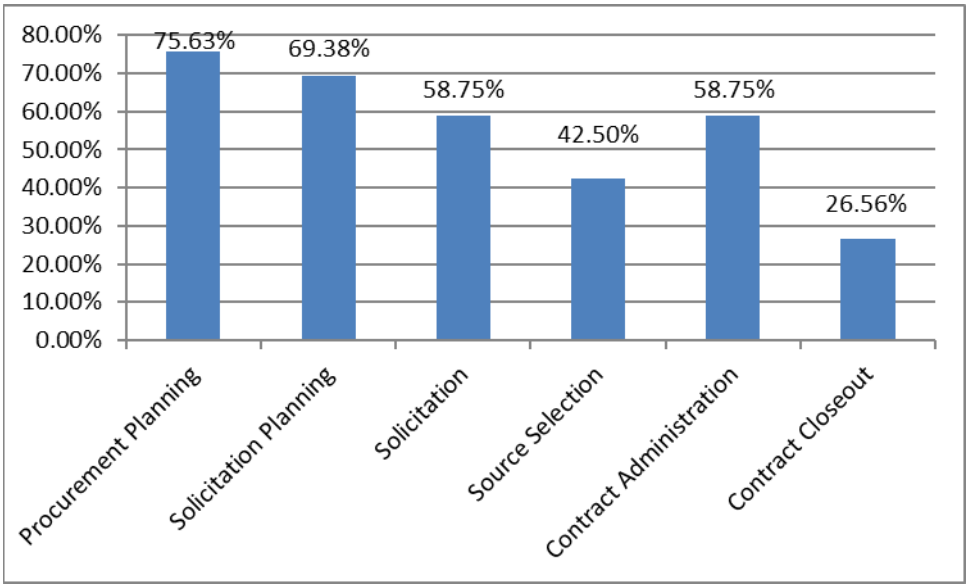

Figure 12: Average Score by Contract Management Process (Grennan & McCrory, 2016).

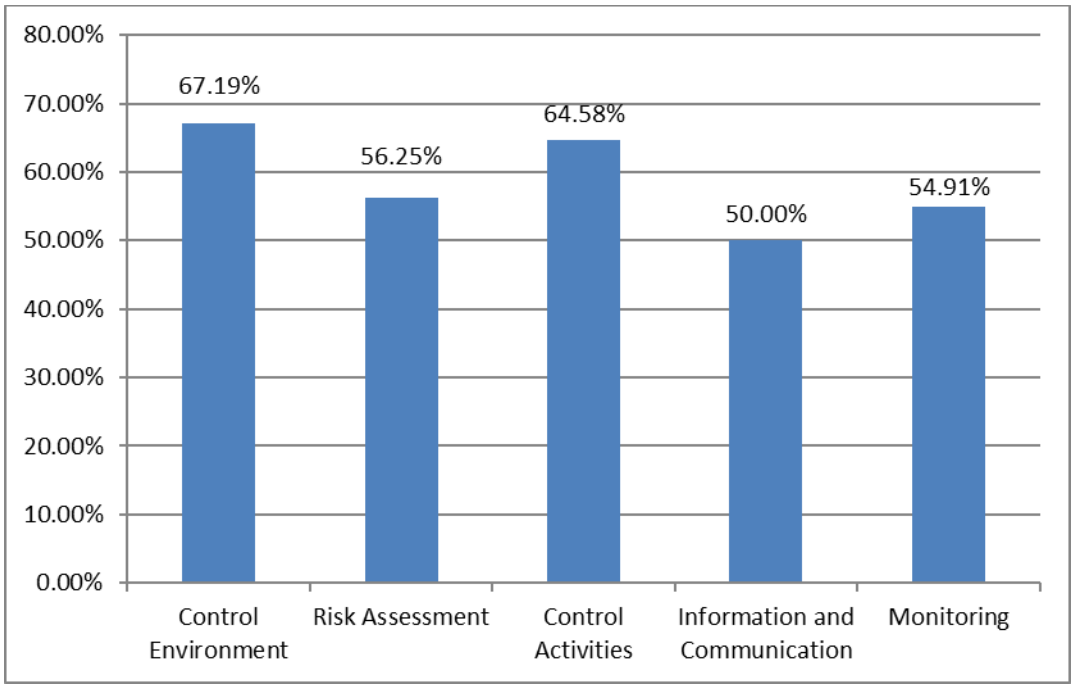

Figure 13: Average Score by Internal Control Component (Grennan & McCrory, 2016).

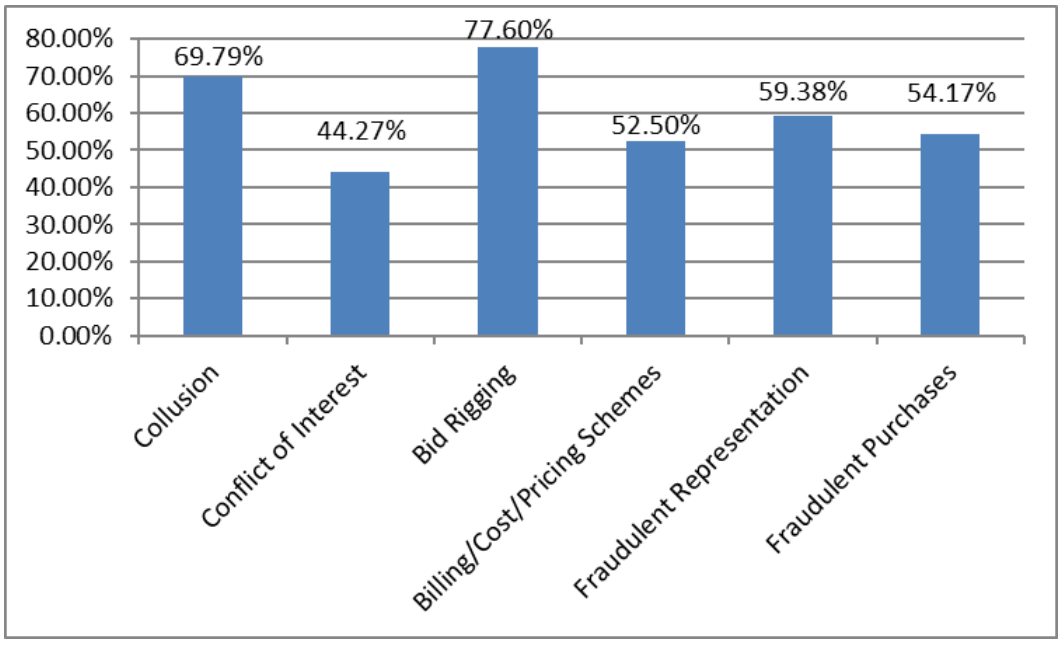

Figure 14: Average Score by Procurement Fraud Scheme (Grennan & McCrory, 2016).

Analysis of Organization Perception Findings

The web-based assessment tool also included survey questions related to the participants' perceptions of their organization's susceptibility to vulnerabilities to procurement fraud within the contract management phases, internal control components, and procurement fraud schemes. Figures 15–17 reflect the responses to these assessment questions.

As shown in Figure 15, when asked which contract management phase is most vulnerable to fraud in their organization, the contract administration phase was selected the most often (21.88%) and procurement planning, solicitation planning, and source selection were all selected the least often (0% for each one). Approximately 19% responded that they did not know, approximately 44% of the respondents stated they did not suspect fraud, and approximately 3% responded that they preferred not to answer.

As shown in Figure 16, when asked which internal control component is most vulnerable to fraud in their organization, the monitoring activities component was selected the most often (13%) and control environment was selected the least often (0%). Approximately 22% responded that they did not know, approximately 47% of the respondents stated they did not suspect fraud, and approximately 6% responded that they preferred not to answer.

As shown in Figure 17, when asked to which procurement fraud scheme they perceived their organization was most susceptible, collusion and conflict of interest were selected the most often (6.25% each) and bid rigging was selected the least often (0%). Approximately 19% responded that they did not know, approximately 53% of the respondents stated they did not suspect fraud, and approximately 6% responded that they preferred not to answer.

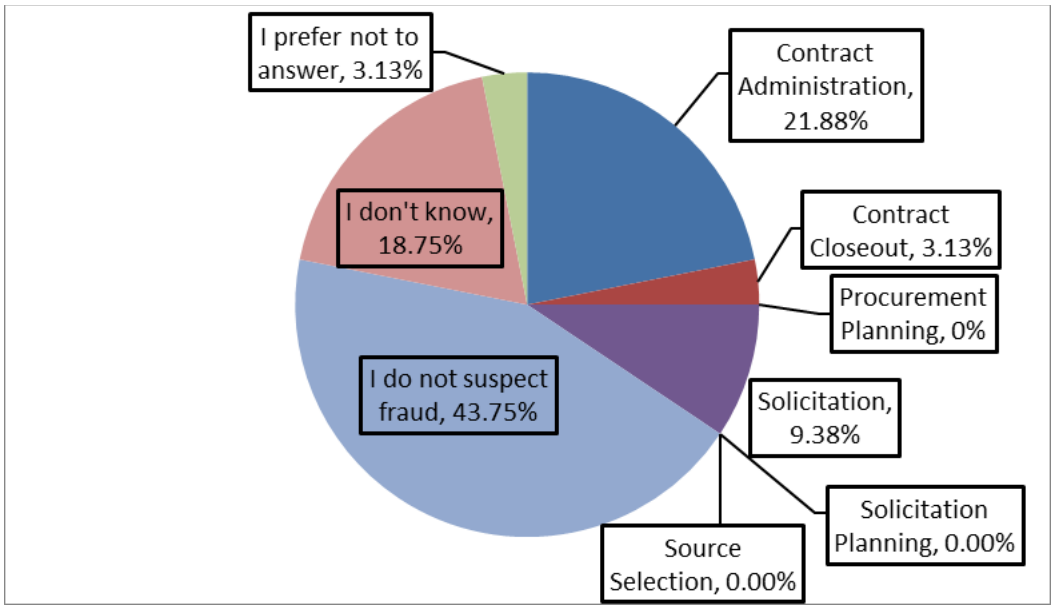

Figure 15: Percentage of Responses to Contract Management Phase Perception Question (Grennan & McCrory, 2016).

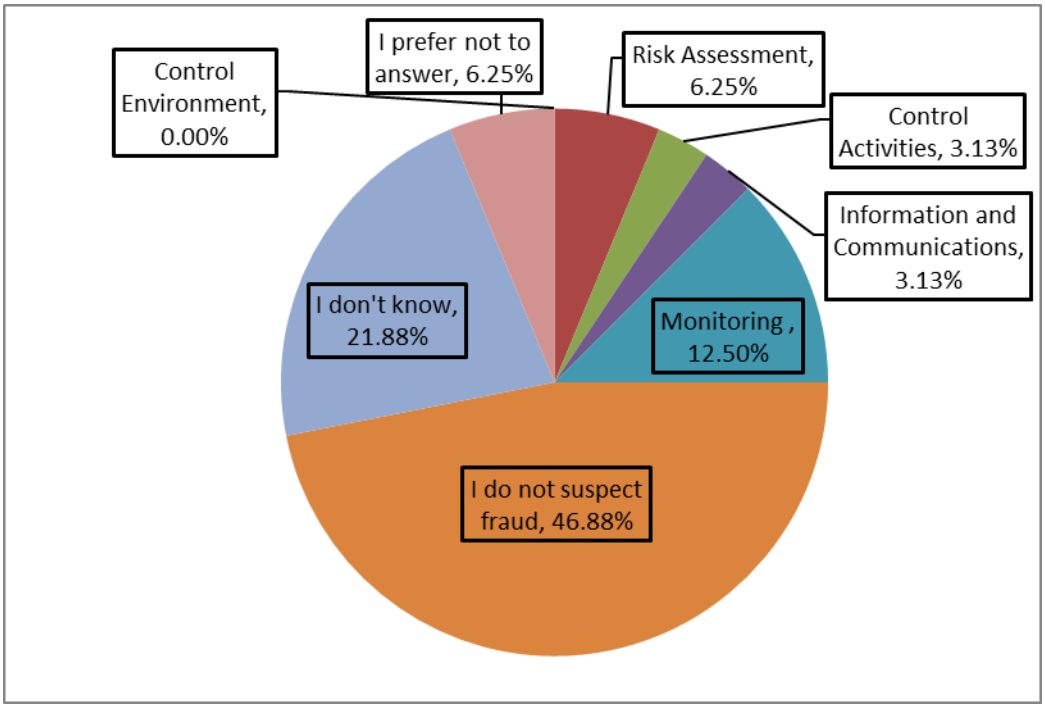

Figure 16: Percentage of Responses to Internal Control Component Perception Question (Grennan & McCrory, 2016).

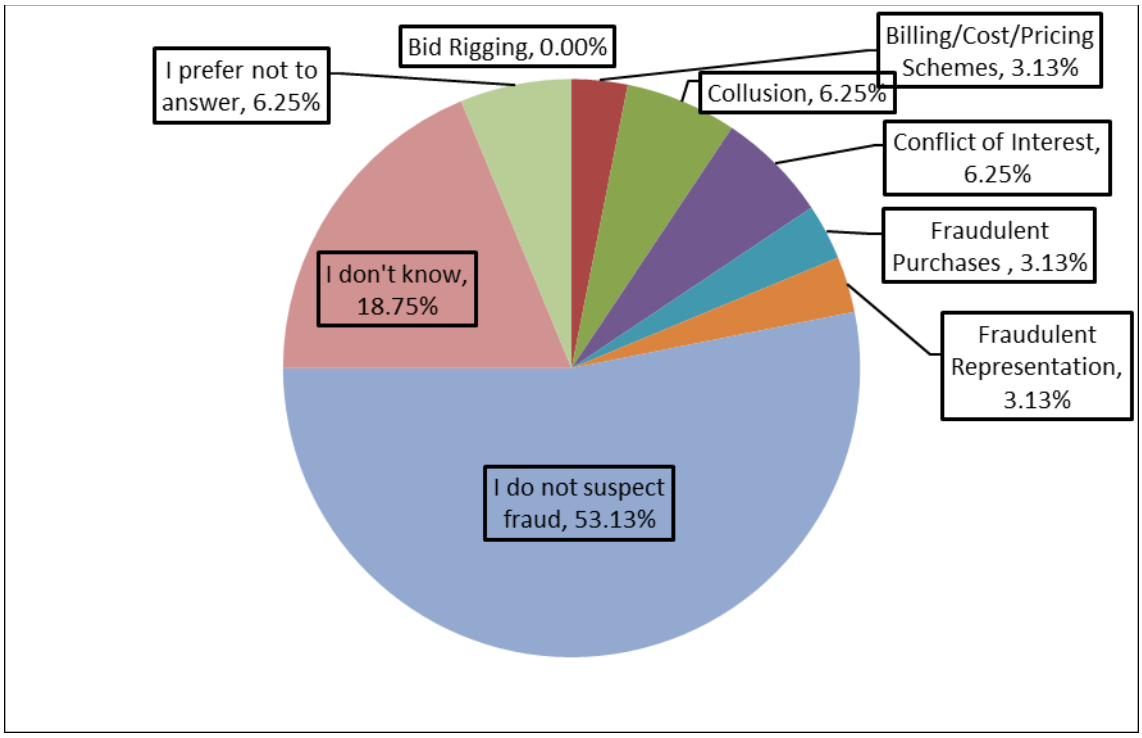

Figure 17: Percentage of Responses to Procurement Fraud Scheme Perception Question (Grennan & McCrory, 2016).

Nine of the organizational questions were related to the contracting professionals' perceptions of their organization's internal controls. These items were designed to determine if any aspects of the organizations' internal control structure, processes, or culture made the organization more susceptible to fraudulent activity. The Likert Scale responses ranged from 1 (Strongly Disagree) to 5 (Strongly Agree). The average response mean to all of the nine questions was 4.24, and the range of responses was from 3.66 to 4.72. The lowest response mean (3.66) was for the item "I have adequate knowledge of contracting fraud schemes to perform my duties." Zero respondents answered "I Don't Know." The highest response mean (4.72) was for the item "I would report fraudulent or suspicious activity if I saw or suspected it." Zero respondents answered "I Don't Know." Appendix A provides a listing of these items as well as the average Likert Scale responses. The next section discusses the implications of these findings.

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Implications of Findings

The results of both the knowledge assessment and the organization perception assessment have interesting implications. The average score on the knowledge assessment varied by contract management process, internal control component, and procurement fraud scheme. The contracting professionals' average score on the overall knowledge assessment (58%) indicates a possible knowledge deficiency in procurement phases, internal controls, and procurement fraud schemes. Using a traditional college grading protocol, this score would be converted to a grade of F. This finding, along with the average response mean to the organization perception item "I have adequate knowledge of contracting fraud schemes to perform my duties" of 3.66 (Appendix A, Item 6), suggests that perhaps the contracting professionals are overly-optimistic in self-assessing their knowledge of procurement fraud schemes.

Furthermore, a significant percentage of the respondents indicated that "I do not suspect fraud" in relation to the organization's contracting phases (43.75%), internal control components (46.88%), and procurement fraud scheme susceptibility (53.13%). These findings, along with the low scoring knowledge assessment may indicate that although the majority of contracting professionals do not suspect fraud in their organizations, they also do not have a sufficient working knowledge of procurement fraud. The contracting professionals' limited knowledge of procurement fraud and their perception that their organization is not susceptible to fraud may reveal that the organization could in fact be vulnerable to some form of procurement fraud. An example of this type of vulnerability to procurement fraud can be found in the Fat Leonard case, which is still currently under investigation.

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Recommendations

The results of the knowledge-based assessment indicated that, although the average score was 58%, the contracting professionals' knowledge of contracting processes, internal controls, and procurement fraud schemes increases as years of experience and DAWIA certification level increase. Recent research shows that the DAWIA required courses for contracting certification do not include a mandatory fraud training or awareness course (Castillo & Flannigan, 2014). As in a prior research study where Army contracting officers were surveyed (Chang, 2013), the first recommendation is for the Defense Acquisition University (DAU) to incorporate coverage of internal controls and procurement fraud schemes in the mandatory contracting curriculum.

Another recommendation is to further explore the organization's information and communication internal control component. This was the internal control component with the lowest score on the knowledge assessment. The internal control component chosen as most vulnerable to procurement fraud in the organization was monitoring activities. Therefore, a greater emphasis in improving both the information and communication component and the monitoring activities component of the contracting command may prove helpful. This may increase the Navy command workforce's knowledge level of the information and communication aspect of their organization's internal controls and decrease their perception of the monitoring activities being the most susceptible to fraud vulnerability.

Yet another recommendation is for the Navy and DOD as a whole to place serious emphasis on educating its contracting professionals regarding procurement fraud schemes and fraud awareness as well as areas vulnerable to procurement fraud.

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Conclusion

In an environment of increased spending in government contracting for goods and services in the DOD, there is also an increased risk of public dollars being vulnerable to fraud, waste, and abuse (GAO, 2006). In addition, there is an increased risk of contracting organizations not getting the best value and not having contracting requirements met. Because of these concerns and other issues, the GAO has kept DOD Contract Management on its High Risk Series list since 1992 (GAO, 2009, 2011).

Tan (2013) found that the rise in globalization, the increase of outsourcing of goods and services, and the increasing pressure to reduce costs, have resulted in government organizations being more vulnerable to the risk of fraud in their procurement processes. The majority of the public procurement organizations in the procurement fraud case studies that Tan (2013) analyzed lacked three internal control components to include control environment, control activities, and monitoring activities. Additionally, contract management deficiencies and related internal control weaknesses have resulted in procurement fraud within the DOD (GAO, 2006; DOD IG, 2009). Therefore, an effective internal control system can help deter fraud in public procurement processes and practices, and fraud prevention education and strategies are necessary for deterring, detecting, and managing procurement fraud (Tan, 2013).

The results of this research indicate that contracting professionals in the Navy scored low in their knowledge of procurement fraud (Grennan & McCrory, 2016). At the same time, the contracting professionals self-assessed that they had sufficient procurement fraud knowledge to deter and detect procurement fraud. The implications of the results of the analysis indicate that there is a need for making procurement fraud education available to contacting personnel in order to make them more aware of vulnerabilities to fraud in federal government procurement.

This research investigated the Navy contracting professionals' perception of their organization's vulnerability to procurement fraud. The research findings indicate Navy contracting professionals may have a possible knowledge deficiency in the area of procurement fraud schemes as well as in the area of contracting phases and internal controls. Additionally, the findings indicate that Navy contracting professionals

are possibly overly optimistic in self-assessing their knowledge of procurement fraud schemes. Finally, this research indicates that the Navy contracting professionals' limited knowledge of procurement fraud and their perception that their organization is not susceptible to fraud may reveal that the organization could in fact be vulnerable to procurement fraud as in the case of the Fat Leonard incidents, which are still under investigation.

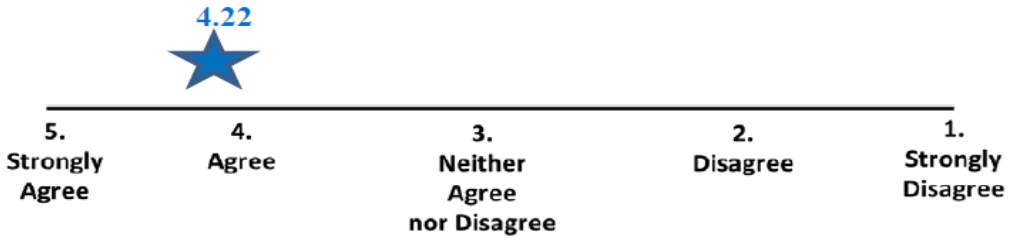
Based on these findings, it is recommended that the DAU incorporate coverage of internal controls and procurement fraud schemes in the mandatory contracting curriculum. In addition, a greater emphasis in improving both the information and communication component and the monitoring activities component of the contracting command should be considered. It is also recommended that the Navy and DOD as a whole place serious emphasis on educating its contracting professionals regarding procurement fraud schemes and fraud awareness and areas vulnerable to procurement fraud.

While contract management in the DOD is critically important, the DOD is still inundated with deficiencies in its contracting processes and internal controls (Rendon & Rendon, 2015). Overall, competent personnel, capable processes, and effective internal controls, which are the three components of the auditability triangle, may help federal agencies in their efforts to reduce, detect, and deter procurement fraud in their organizations throughout the Navy and DOD.

Furthermore, the GAO (2006) noted that lack of a capable acquisition workforce and the lack of proper contract surveillance are some ways that can open the door to vulnerabilities which can lead to procurement fraud, waste, and abuse. In light of the potential fraud vulnerabilities within federal government contracting organizations, it is crucial that the Navy and DOD acquisition workforce have the necessary knowledge of procurement fraud schemes and procurement fraud indicators in order to help deter and detect procurement fraud and attain the best value for the government. As the federal government continues to increase procurement of goods and services, the pressure to reduce costs warrants federal agencies to strive to decrease its vulnerability to procurement fraud.

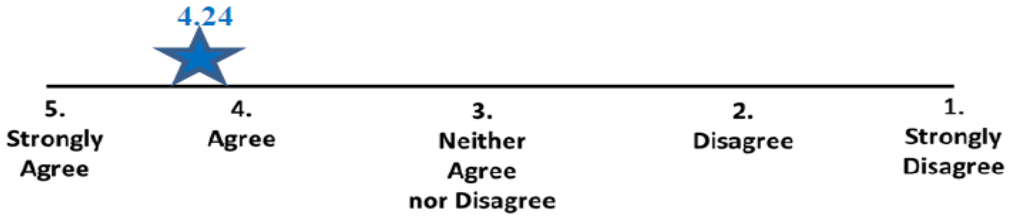
Appendix

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



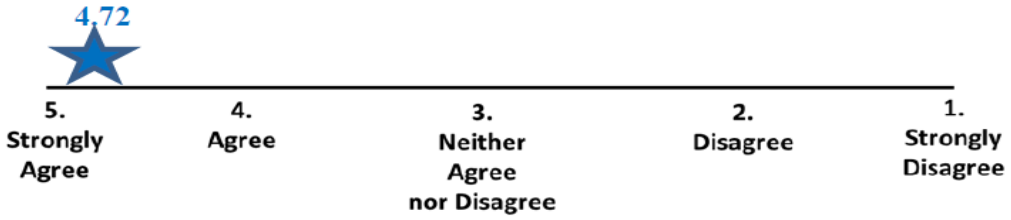
I prefer not to answer: 0

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



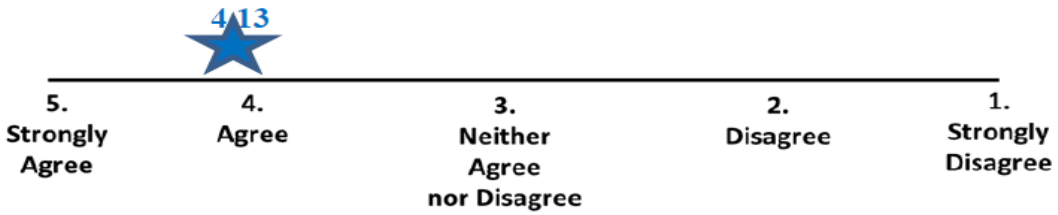
I do not know: 3

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



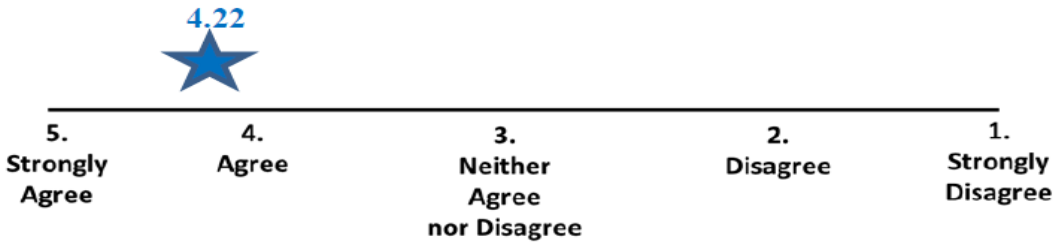
I do not know: 0

(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).

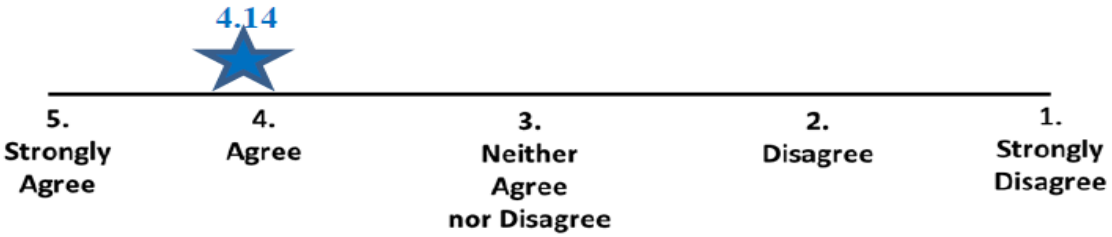


I do not know: 0

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

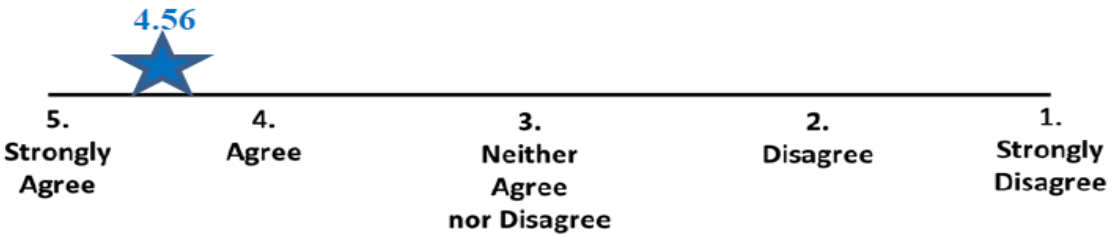
I do not know: 0

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



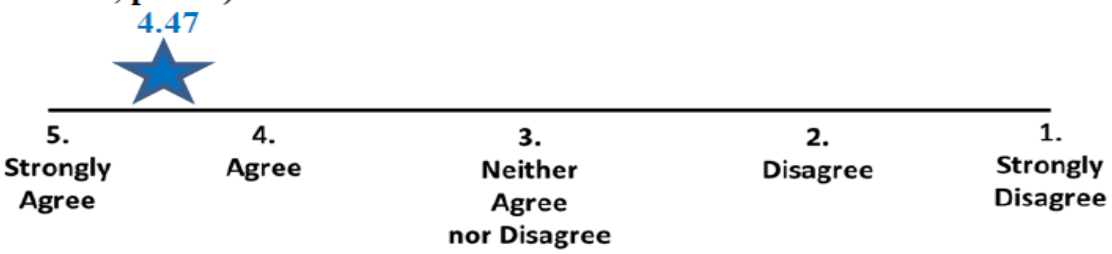
I do not know: 18

(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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