



**NAVAL
POSTGRADUATE
SCHOOL**

MONTEREY, CALIFORNIA

MBA PROFESSIONAL PROJECT

**NON-FAR-BASED CONTRACTS AND ACQUISITION
ENVIRONMENTAL FACTOR ANALYSIS**

December 2021

**By: Peter A. Barringer
Craig Miles**

**Advisor: Robert F. Mortlock
Second Reader: Rene G. Rendon**

Approved for public release. Distribution is unlimited.

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington, DC, 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE December 2021	3. REPORT TYPE AND DATES COVERED MBA Professional Project	
4. TITLE AND SUBTITLE NON-FAR-BASED CONTRACTS AND ACQUISITION ENVIRONMENTAL FACTOR ANALYSIS			5. FUNDING NUMBERS	
6. AUTHOR(S) Peter A. Barringer and Craig Miles				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release. Distribution is unlimited.			12b. DISTRIBUTION CODE A	
13. ABSTRACT (maximum 200 words) Strategic competitors like China have the ability to sprint through technological hurdles by disregarding intellectual property laws, and can decide when contractors will work with the government. Meanwhile the U.S. remains tied down by regulation, laws, and bureaucracy. To help alleviate these barriers, acquisition offices are turning to non-Federal Acquisition Regulation- (FAR) based procurement. Other transactions and additional non-FAR-based acquisition represent an area of contracting that personnel are seeking out but do not understand. The environmental factors that lead these non-FAR-based acquisition offices to success are also shrouded in mystery. Interviews of personnel in organizations that do FAR-based acquisition and in organizations that do non-FAR-based acquisition brought to light environmental factors at play. The interviews produced quantifiable data highlighting a large gap in training with fewer than half of non-FAR-based contracting respondents having training available to them and fewer than half of finance and requirement owners knowing non-FAR-based acquisition laws and regulations. Data also showed a drive from leadership for legal, finance, and contracting personnel to work together as a team. Continued importance must be placed on acquisition teams to find risk-appropriate deregulated solutions. Training and education should also be a main priority to educate personnel on what non-FAR-based procurement and contracting is how to do it properly.				
14. SUBJECT TERMS FAR, non-FAR, non-traditional contracting, contracting, PIA, CRADA, OT, OTA			15. NUMBER OF PAGES 79	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU	

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release. Distribution is unlimited.

**NON-FAR-BASED CONTRACTS AND ACQUISITION ENVIRONMENTAL
FACTOR ANALYSIS**

Peter A. Barringer, Captain, United States Air Force
Craig Miles, Captain, United States Air Force

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

from the

**NAVAL POSTGRADUATE SCHOOL
December 2021**

Approved by: Robert F. Mortlock
Advisor

Rene G. Rendon
Second Reader

Rene G. Rendon
Academic Associate, Department of Defense Management

THIS PAGE INTENTIONALLY LEFT BLANK

NON-FAR-BASED CONTRACTS AND ACQUISITION ENVIRONMENTAL FACTOR ANALYSIS

ABSTRACT

Strategic competitors like China have the ability to sprint through technological hurdles by disregarding intellectual property laws, and can decide when contractors will work with the government. Meanwhile the U.S. remains tied down by regulation, laws, and bureaucracy. To help alleviate these barriers, acquisition offices are turning to non-Federal Acquisition Regulation- (FAR) based procurement. Other transactions and additional non-FAR-based acquisition represent an area of contracting that personnel are seeking out but do not understand. The environmental factors that lead these non-FAR-based acquisition offices to success are also shrouded in mystery. Interviews of personnel in organizations that do FAR-based acquisition and in organizations that do non-FAR-based acquisition brought to light environmental factors at play. The interviews produced quantifiable data highlighting a large gap in training with fewer than half of non-FAR-based contracting respondents having training available to them and fewer than half of finance and requirement owners knowing non-FAR-based acquisition laws and regulations. Data also showed a drive from leadership for legal, finance, and contracting personnel to work together as a team. Continued importance must be placed on acquisition teams to find risk-appropriate deregulated solutions. Training and education should also be a main priority to educate personnel on what non-FAR-based procurement and contracting is how to do it properly.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I.	BACKGROUND	1
A.	INTRODUCTION.....	1
B.	PURPOSE STATEMENT.....	3
C.	MOTIVATION	4
D.	RESEARCH QUESTIONS.....	4
E.	RESEARCH BENEFITS AND LIMITATIONS.....	5
F.	ORGANIZATION OF REPORT	5
G.	SUMMARY.....	6
II.	LITERATURE REVIEW	7
A.	NEAR PEER THREAT AND INTELLECTUAL PROPERTY	7
B.	HISTORY OF NON-FAR ACQUISITIONS.....	10
1.	Other Transactions	10
2.	Procurement of Experiments	12
3.	Cooperative Research and Development Agreements.....	13
4.	Partnership Intermediary Agreements.....	14
5.	Technology Investment Agreements	15
C.	NON-TRADITIONAL CONTACTORS	16
D.	ORGANIZATIONS AND NON-FAR.....	18
III.	METHODOLOGY	21
A.	INTERVIEW METHOD.....	21
B.	QUESTION DEVELOPMENT	21
C.	LIKERT SCALE.....	25
D.	SAMPLE SIZE.....	25
E.	RESEARCH ERROR MITIGATION	26
F.	VARIABLES	27
1.	Interviewee Organization.....	27
2.	Organization Question Responses	27
IV.	DATA ANALYSIS RESULTS.....	29
A.	INTERVIEW QUESTIONS BREAKDOWN AND ANALYSIS	29
2.	Trend Analysis	47
V.	CONCLUSION	49
A.	SUMMARY	49
B.	RECOMMENDATIONS	53

C.	AREAS OF FUTURE RESEARCH.....	55
D.	CONCLUSION.....	56
	LIST OF REFERENCES.....	59
	INITIAL DISTRIBUTION LIST.....	63

LIST OF FIGURES

Figure 1.	Total OT Obligations 2016 – 2018 Source: Mayer et al. (2019, p. x).	12
Figure 2.	Active PIA by Year. Source: Peña et al. (2021, p. 18).	15
Figure 3.	Questionnaire Experiential Breakdown	29
Figure 4.	Question 2 Overall Breakdown.....	30
Figure 5.	Question 2 Experiential Breakdown	31
Figure 6.	Question 3 Overall Breakdown.....	32
Figure 7.	Question 3 Experiential Breakdown	33
Figure 8.	Question 4 Overall Breakdown.....	34
Figure 9.	Question 4 Experiential Breakdown	35
Figure 10.	Question 5 Overall Breakdown.....	36
Figure 11.	Question 5 Experiential Breakdown	37
Figure 12.	Question 6 Overall Breakdown.....	38
Figure 13.	Question 6 Experiential Breakdown	39
Figure 14.	Question 7 Overall Breakdown.....	40
Figure 15.	Question 7 Experiential Breakdown	41
Figure 16.	Question 8 Overall Breakdown.....	42
Figure 17.	Question 8 Experiential Breakdown	43
Figure 18.	Question 9 Overall Breakdown.....	44
Figure 19.	Question 9 Experiential Breakdown	45
Figure 20.	Question 10 Overall Breakdown.....	46
Figure 21.	Question 10 Experiential Breakdown	47

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF ACRONYMS AND ABBREVIATIONS

AFFARS	Air Force Federal Acquisition Regulation Supplement
CAS	Cost Accounting Standards
CFR	Code of Federal Regulation
CoFC	Court of Federal Claims
COs	Contracting Officer
CRADA	Cooperative Research and Development Agreements
DARPA	Defense Advanced Research Projects Agency
DAU	Defense Acquisition University
DFARS	Defense Federal Acquisition Regulation Supplement
DIU	Defense Innovation Unit
DOD	Department of Defense
FAR	Federal Acquisition Regulation
FM	Financial Management
GAO	Government Accountability Office
GOCO	Government Owned Contractor Operated
GOGO	Government Owned Government Operated
GPS	Global Positioning Service
IP	Intellectual Property
J&A	justification and approval
OT	Other Transaction
OTA	Other Transactional Authorities
OUSD	Office of the Under Secretary of Defense
PIA	Partnership Intermediary Agreement
R&D	research and development
SECDEF	Secretary of Defense
T3	Technology Transfer and Transition
TIA	Technology Investment Agreement
USC	United States Code
USTR	U.S. Trade Representative

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGMENTS

We would like to thank all of those that helped us with this research. To our families, peers, professors, interviewees, and everyone else: Thank you for taking the time to help us accomplish this report. We could not have done it without your continuing support.

THIS PAGE INTENTIONALLY LEFT BLANK

I. BACKGROUND

A. INTRODUCTION

Other Transactional Authorities (OTA) and other non-Federal Acquisition Regulation- (FAR) based contracts are becoming increasingly prevalent within the Acquisition and Contracting career fields. According to the Office of the Under Secretary of Defense (2018) for Acquisition and Sustainment, “the OTAs were created to give the DOD the flexibility necessary to adopt and incorporate business practices that reflect commercial industry standards and best practices into its award instruments” (p. 4). The main problem currently within the OTA discussion is the overall lack of training and understanding within the officer and enlisted career ranks. Miller (2019) stated, “They hear about this other transaction authority that gets them out from under the Federal Acquisition Regulations and the Defense FAR where they can be more agile in whatever contracting tool they are going to use. And there is a desire to use that without really fully understanding what they are for.”

Traditionally the Department of Defense (DOD) has been the example of how to develop new and emerging technology, however, Bressler (2018) stated, “While in decades past Department of Defense (DOD) research often produced revolutionary technological breakthroughs for the civilian sector, commercial innovation now increasingly outpaces the DOD” (p. 387). The DOD is no longer at the tip of the spear of technological innovation and risks losing the competitive edge. The DOD must change current policies and procedures to ensure compliant with the *National Defense Strategy* (Department of Defense [DOD], 2018) which stated the following:

Success no longer goes to the country that develops a new fighting technology first, but rather to the one that better integrates it and adapts its way of fighting. . . . Our response will be to prioritize speed of delivery, continuous adaptation, and frequent modular upgrades. We must not accept cumbersome approval chains, wasteful applications of resources in uncompetitive space, or overly risk-averse thinking that impedes change. (p. 10)

Non-traditional contractors hold the key to the future of technological innovation. Weinig (2019) stated, “OTs allow for unique and tailored business arrangements with nontraditional defense contractors bringing a potential for rapid advancement of critical technologies into

defense systems” (p. 123). Other Transactions as well as other non-FAR-based contracts can be utilized to cut through cumbersome approval chains. DiNapoli (2018) states, “Other transactions enable DOD and companies to negotiate terms and conditions specific to a project without requiring them to comply with most federal regulations that apply to government procurement contracts” (p. 2). The implementation of other transactions and other non-FAR acquisitions will not only cut through the bureaucracy, but the flexibility helps the DOD address non-traditional contractors’ concerns about generating cost accounting system (CAS) and intellectual property (IP) rights that will only be utilized for the government (DiNapoli, 2018, p. 2). Other transactions create new potential to renovate the current acquisition system, to keep pace with new and future requirements.

The Air Force has consistently been a leader among the Armed Services for the past several decades for integrating new systems and contracting methods. However, in 2020 Army Contracting Command New Jersey accounted for “60% of all DOD OTA obligations between FY2015 and FY2020” (McCormick, 2021, p. 35). While the Army holds the large majority of OTA spending, the Air Force’s Launch Enterprise Directorate and Space Development & Test Wing remain in the top ten offices utilizing OTAs (McCormick, 2021, p. 35). The Air Force has widely documented success with these OTAs, but they are not the only non-FAR based contracting tool we have available. Gagnon and Van Remmen (2018) state, “It is pivotal that the Air Force and the DOD fully understand the non-FAR-based contracting and how to do it successfully to compete with its near peer threats” (p. 2). Finding innovative ways for the defense organizations to engage with industry is growing in popularity, and not just within the United States.

If the Air Force wants to compete with its strategic competition in China and Russia, it needs to fully research, understand, and utilize the best practices for non-FAR-based acquisitions. These best practices should be replicated across the Service to attract nontraditional contracting industry leaders that otherwise would not do business with the federal government. The Office of the Secretary of Defense (OUSD; 2020) claims, “China seeks to become a leader in key technologies with military potential, such as AI, autonomous systems, advanced computing, quantum information sciences, biotechnology, and advanced materials and manufacturing” (p. 144). China’s technological capabilities are on the rise and

these new initiatives will make will help to cement their place as a tech giant. This growth is especially concerning considering, “China continues to undermine the integrity of the U.S. science and technology research enterprise through a variety of actions such as hidden diversions of research, resources, and intellectual property” (Office of the Secretary of Defense [OUSD], 2020, p. xi). China’s research into science and technology is compounded by their disregard for intellectual property allowing them to slingshot progress utilizing the work of other nations. The DOD needs to pivot by utilizing non-traditional contractors and non-FAR-based contracts to tap into currently scarce resources and underutilizing professional personnel for the United States to maintain global supremacy.

B. PURPOSE STATEMENT

This research provides insight into how non-traditional FAR-based contracts can be utilized and replicated to further protect against the United States’ near peer threats. These non-FAR-based contracts provide flexibility for the DOD and their use is increasing year over year in spending. The *National Defense Strategy* states that “our backlog of deferred readiness, procurement, and modernization requirements has grown in the last decade and a half and can no longer be ignored” (Department of Defense, 2018, p. 6). Non-FAR-based contracts are potentially the answer to ensure that the backlog of modernization requirements is solved before the next major conflict with a strategic competitor. The Air Force needs to ensure that their usage of non-FAR-based contracts is scalable and that they are properly executing these contracts.

There are three primary purposes of this research. The first purpose of this research is a detailed analysis of the environmental factors of non-FAR acquisition organizations. The second purpose of this research is to generate a way to make key factors identifiable for organizations seeking out non-FAR contracts and agreements. The final purpose of this research is for other contracting offices to see what environmental factors are necessary to execute non-FAR-based contracts effectively. These replicable environmental factors will be necessary to scale for the future increase in non-FAR-based spending. The usage of non-FAR-based contracts is only increasing, and the Air Force needs to replicate the success of its current offices in order to keep up with the increasing demand. If the Air Force does not find

a way to scale their successes, it could fall behind or the current offices could be overwhelmed with the increasing workload.

C. MOTIVATION

There is an Other Transaction Authority (OTA) guide available online for study and guidance; however, it does not provide practical applications on how to execute an OTA in a real-world situation. Captain Miles was in the process of attempting to do a non-FAR-based Partnership Intermediary Agreement (PIA) at his previous duty station in Louisiana and had an incredibly frustrating time trying to navigate this complex process. Non-FAR acquisition has the attention of the most senior leaders for expediency but is complex and hard to learn. The contracting system is already an interconnected web of rules and regulations that requires years to understand and even longer to master. The professional project authors are motivated to dive into the study of non-FAR-based acquisitions environments to make suggestions for improvements to better the Air Force as a whole.

D. RESEARCH QUESTIONS

Primary Question: Are there environmental factors present in organizations utilizing non-FAR-based acquisitions that are not present in organizations that do not utilize non-FAR-based acquisition strategies?

Secondary Question: What are the most prevalent environmental factors identified in organizations that practice non-FAR-based acquisitions?

The primary and secondary questions are designed to identify the environmental factors in organizations working with non-FAR-based acquisitions. For the purpose of this professional project, environmental factors are defined as all factors outside of the contracting officer's control that affect the performance of the contract. We want to understand if there are different environmental factors at play in primarily FAR-based organizations and organizations which work on non-FAR-based acquisitions. We also want to look into whether or not these factors can be utilized to enhance offices looking to apply non-FAR-based contracts. We want to provide the reader with the factors that have led these organizations to success.

Non-FAR-based contracting methods are becoming increasingly popular among key Air Force leadership. Non-acquisition Air Force personnel are hearing that there is a way to get around slow and rigid FAR-based contracting. If the contracting office is not properly equipped or trained for non-FAR-based contracting methods, however, it will either be impossible or take even longer than the traditional FAR-based approach to get the acquisition complete. As non-FAR-based contracting is becoming more and more common it is vital that the Air Force uses best practices while scaling for the future.

E. RESEARCH BENEFITS AND LIMITATIONS

The research from this professional project utilizes a multitude of interviews and online resources. The primary sources for the literature review are articles written by professionals in the acquisition career field or other military professionals. One of the primary benefits to using these sources is that most the articles are peer reviewed before they are published. These authors are also considered to be experts in their field which helps validate their opinion-based results. Another source of data was pulled directly from the interviews of the offices themselves to see what environment they are operating under.

One benefit of these data sources is that they are currently the most effective and the most up to date articles in the non-FAR contracting realm. Each article has the potential to have flaws in their data or biases towards a certain conclusion but because they have been peer reviewed, they are less likely to have these errors. This data is crucial in understanding the current trends for OTAs and the current research that is being conducted in this field. Moreover, the data gathered from the individual offices through interviews is crucial to discovering the best practices for non-FAR-based contracts. The data from the offices identifies important, replicable factors to help scale for the future of increased non-FAR-based contracting.

F. ORGANIZATION OF REPORT

This professional project report for the Naval Postgraduate School Department of Defense Management includes the following chapters. Chapter I is the introduction to the professional project topic. This chapter focuses on the purpose statement, the research questions, the research benefits and limitations, and the organization of the report, and the

summary. Chapter II is the literature review. The literature review reports the non-FAR-based contracts and agreements, the history of non-FAR-based acquisitions, non-traditional contractors, and near peer threat and intellectual property. Chapter III details the methodology used for data analysis and reporting. It covers the interview methodology, the data collection from offices around the Air Force, data analysis, and data samples. The fourth chapter details the results of the data collection. These results show the offices' primary environmental factors and analyzes the interview data. Chapter V presents the discussion of the results, conclusions, and future areas of study.

G. SUMMARY

Non-FAR-based contracts are essential for curbing the threat of its strategic competitors and following the agenda of the National Defense Strategy. Non-FAR-based contracts are primarily OTAs but include other actions such as PIAs, Technology Investment Agreement (TIA), etc. These acquisition types allow the contracting professionals to be more agile and procure items more flexibly while attracting non-traditional contractors because they do not have to follow the FAR and other agency specific contracting supplements. Non-FAR-based contracts are the tool of choice of cutting-edge technological research and development purposes. Their primary purpose is intended to be for research and development acquisitions. OTAs are a widely researched topic due to their increased usage and weight among senior leaders in the DOD. They are seen as the way to get things done quickly without the typical rules and regulations of traditional FAR-based contracts. This increased demand has the potential for overuse and abuse, but if done correctly it can greatly increase the effectiveness of next generation acquisitions. Because these acquisitions are increasing at a steady rate, it is critical that the Air Force has a scalable plan in place to share across its organizations.

II. LITERATURE REVIEW

A. NEAR PEER THREAT AND INTELLECTUAL PROPERTY

As the DOD looks to its future, it is imperative to recognize the need for continued innovation. As the years progress, the gap between the DOD's military strategic competition continues to shrink at an alarming rate. The United States military no longer has a commanding lead in some military operations. In an article detailing how to keep the DOD acquisition relevant in the 21st century, Steinberg (2020) shared the following story:

Twenty-four years ago, the Third Taiwan Strait Crisis began when the People's Republic of China initiated an aggressive series of military exercises aimed at intimidating Taiwan (also known as the Republic of China) in the leadup to Taiwan's elections. In this crisis, the United States demonstrated that it could credibly deter aggression because of its military superiority. Today, if a similar crisis arose, it is much less certain that the U.S. military could exercise the same degree of credible deterrence. Steinberg (2020)

The power the United States held in 1996 is not the same power the DOD holds today. The DOD's near peers are doing everything they can to not only catch up but get ahead. Army Major General Eric Wesley said, "Some analysts have said of 10 major capabilities that we use for warfighting that by the year 2030, Russia will have exceeded our capability in six, will have parity in three, and the United States will dominate in one" (McBride, 2016). The DOD is falling behind and may not even maintain power until 2030. Steinberg (2020) stated, "China and Russia have improved their military capabilities and, in many areas, now match or surpass the capabilities of the U.S. military." It is imperative that the United States continues to hold its superiority lest the DOD allows its power and land near peers hungry to gain the leading edge.

The DOD's peers are on the move and have been for the last several years. In 2019, the Peoples Republic of China (PRC) announced, "its annual military budget would increase by 6.2%, continuing more than 20 years of annual defense spending increases and sustaining its position as the second largest military spender in the world" (Office of the Secretary of Defense, 2020, p. 138). To coincide with its annual military spending China also "seeks to become a leader in key technologies with military potential, such as AI,

autonomous systems, advanced computing, quantum information sciences, biotechnology, and advanced materials and manufacturing” (OUSD, 2020, p. 144). China’s hunger for technology is not only concerning as a new area of focus for the near peer, but when coupled with China’s and Russia’s acquisition practices and disregard for intellectual property it becomes a real problem for the DOD.

The DOD utilizes the FAR and DFARS to regulate its annual spend to keep fair competition and maintain the public’s trust in the government’s use of their tax dollars. Unfortunately, these regulations have also become a hindrance to modern technological acquisition. Steinberg said, “While the U.S. defense acquisition process stumbles in acquiring leading technology, near-peer competitors like Russia and China do not self-impose the same bureaucratic hamstrings” (2020). As discussed previously, small and mid-sized nontraditional contractors hold the key to future innovation. While mid-sized commercial contractors elude the U.S. government, “near-peer competitors such as Russia and China are not wasting time and resources on the regulations that cripple DOD’s engagement with the commercial technology sector” (Steinberg, 2020). To make things worse, China has the entirety of its economy under its strict control. Unlike in the United States, “every technology developed in the commercial sector is transferred to the People’s Liberation Army by fiat” (DOD, 2020). While the DOD struggles to interact with its Silicon Valley technology companies, the PRC is mandating its collaboration.

China does not have Silicon Valley, but it’s not stopping them from outreach. In 2015, China came out with its strategy to reach the commercial sector with the following:

“Made in China 2025” seeks to increase China’s domestic innovation by setting higher targets for domestic manufacturing in strategic industries such as robotics, power equipment, and next-generation information technology by 2020 and 2025. This plan seeks to strengthen China’s domestic enterprises through awarding subsidies and other incentives while increasing pressure on foreign firms to transfer technology in order to have market access in China. (Office of the Secretary of Defense, 2020, p. 15)

After the release of Made in China 2025 came the Rapid Response Teams. These rapid response teams can be thought of as the Chinese equivalents of the DIU. Similar to DIU these “Rapid Response teams link advanced commercial technologies and products to

national defense capabilities” (Bruyère, 2021). Chinese Rapid Response Teams solicit fast, generally with a 6-to-12-month timeline for delivery, innovative commercial solutions (Bruyère, 2021, p. 143). These Chinese Rapid Response Teams are similar to the DIU, but not exactly equivalent. Dissimilar from China’s commercial integration units, “the U.S. government can’t simply take technology developed in the private sector and require its use within the military. Instead, the military must entice the private sector to support the military. That’s DIU’s mission” (DOD, 2020). The DOD’s near peers are rapidly moving forward and beating us at our own game. China is doing everything they can to innovate and invest in new technologies, and their disregard for intellectual property rights is causing the distance in military power to shrink at an increasing rate.

China is not the only country that is under the public eye for intellectual property theft. Countries with IP infractions end up in the Special 301 report conducted by the U.S. Trade Representative (USTR). Decades ago, countries like, “Japan, South Korea, and Taiwan were each perennial Section 301 violators until they reached a per capita GDP of about \$20,000–\$25,000. China draws special attention because of its size and its top-down, state-led model” (Huang & Smith, 2019). Most countries give up the practice as they grow in GDP and intellectual property, they require becomes affordable. In a peculiar turn of events China falls into this category as well. Athreye (2020) said, “2018 China paid US\$35,782,960,000 for the use of intellectual property which is up from US\$543,000,000 in 1997.” If China is paying \$35 billion for IP, then is this IP stealing a problem? Clearly, they are heavily investing in IP from the United States. The problem is, “technology owners worry about the extent of protection their innovations receive in China when they hear stories about industrial espionage and forced technology transfers” (Athreye, 2020). Even with the IP China is paying for they are still violating protection laws. In addition to this misuse of purchased patents it is estimated that, “Chinese IP theft has cost the United States US\$225 billion to US\$600 billion a year” (Huang & Smith, 2019). That mishandled \$35 billion dwarfs in comparison to the estimated theft annually.

Many will say that China has been making strides when it comes to IP laws, which is true. Papageorgiadis and McDonald (2019) state in regard to intellectual property, “Many emerging economies such as China have recently expanded the availability and

scope of law on the books” (p. 7). They have created and updated many of their laws to include strict adherence to theft. Papa Georgiadis and McDonald (2019) then go on to say:

The enforcement of the Law in practice remains problematic because most governmental institutional actors: a) do not consider IP violations to be a priority problem, b) lack suitable underpinning by norms of behavior, and c) follow enforcement procedures which operate under social protocols that are closed or hard to access by foreign firms. (p. 7)

It is true that on paper China appears to be on the road to redemption, but looking at their actions, they appear to be doing anything but following the laws.

The Department of Defense’s near peers know that in order to compete with the United States they need to sprint forward in the acquisition and advancement of technology. They have less bureaucracy to deal with, direct lines to their commercial markets, and a disregard for intellectual property protection. The odds are stacked against the United States and their opponents are playing dirty. Their threat continues to grow and without an updated playbook the DOD is getting outpaced.

B. HISTORY OF NON-FAR ACQUISITIONS

1. Other Transactions

Section 2371 of the 10 U.S. Code was originally enacted in 1989 for research contracts and grants. Section 2371b was established in 1993 for prototype authority. Like 2371, with which it is closely related, 2371b was intended specifically for the Defense Advanced Research Projects Agency (DARPA), but in 2016 it was extended to all of the Defense Department (Dunn, 2017). The Other Transaction (OT) guide states that follow-on production OTs are permitted per 2371b, “This designation does not apply to the military departments” (Office of the Under Secretary of Defense for Acquisition and Sustainment, 2018). Other Transactions are by far the most recognizable of the non-FAR acquisition methods. Many people hear about non-FAR contracting and leap for the opportunity for supposed speed and minimized regulations. MITRE (2021) claims, “Although OTs may be appealing due to perceived speed to award OT agreements, the primary goal of OTs is to encourage innovation and technological advances, NOT to award fast or avoid FAR competitive processes.” OTs are not suitable for every situation, but

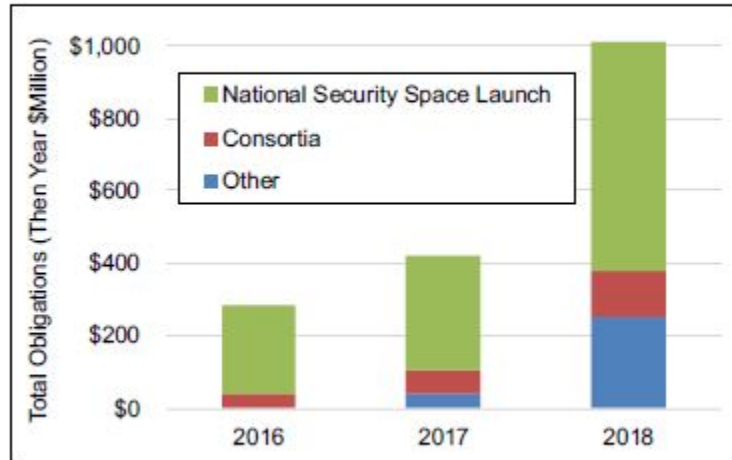
certainly still hold a very important place for research and development (R&D) contracting. Many elements within the DOD thrive on standardization provided by the FAR; however, in the world of innovative contracting becoming reliant on, procedures, detailed guidance, templates tend to hurt more than they help (Dunn, 2017). This lack of standardization for all non-FAR methods requires the contracting officer to have agreement officer authority to execute.

One aspect that stands out for OTs is the use of consortiums. Consortiums are generally run by the civilian industry, but some government sponsors choose to manage their consortiums in house (MITRE, 2021). Consortiums are a collection of non-traditional vendors such as non-profit organizations, academic organizations, and other vendors that traditionally do not work directly with the government. Consortiums offer several benefits such as supplying “a pool of vendors aligned to consortium focus area (i.e., cyber, space, undersea, propulsion) promotes an environment for collaboration with the government and with other consortium members” (MITRE, 2021). Consortiums also have the ability to complete white papers and demos quickly as well as move through, proposals, evaluations, and often contract awards in a more expedited manner than traditional government acquisition programs (MITRE, 2021). Consortiums certainly make the OT process even more simple by creating cooperative environments for non-traditional vendors, but there are also several drawbacks. MITRE talks about the dangers of membership dues and fees as well as issues of consortiums becoming resource constrained due to high demand (MITRE, 2021). Another issue is the lack of visibility in industry run consortiums. Money comes from the government to the consortiums and the trail essentially ends there. Understanding where the funding from the government is going becomes difficult because its distribution after entering the consortiums is untraceable.

OTs are the most appropriate non-FAR tool when there is a need for flexibility within the commercial terms and conditions, Cost Accounting Standards (CAS), and intellectual property rights (MITRE, 2021). OTs may be protested to the U.S. Court of Federal Claims (CoFC), and the Government Accountability Office (GAO) has limited jurisdiction to review OT decisions (Defense Acquisition University [DAU], 2021). As seen in Figure 1, OTs continue to grow and remain an excellent tool in the government’s

toolbelt. As the need for next-generation technology grows its usefulness to the DOD grows.

Figure S.1. Total Air Force Funded OT Obligations by Year



NOTE: RAND analysis of Federal Procurement Data System—Next Generation (FPDS-NG) data.

Figure 1. Total OT Obligations 2016 – 2018
Source: Mayer et al. (2019, p. x).

2. Procurement of Experiments

On July 2, 1926, the Air Corps Act changed the name of the Air Service to the Air Corps. With this change came the original authorization and utilization of procurement of experiments for the expansion of aviation and the air fleet. Later, during World War II the authority expanded beyond the use for only aviation. In 2016, congress endorsed wide use of the authority by greatly expanding the domains to also include ordinance, signal, chemical activity, transportation, energy, spaceflight, and aeronautical supplies, including parts, accessories, and designs thereof (Dunn, 2017). This type of acquisition is best used for experiments testing new capabilities within the authorized domains. While all non-FAR acquisition requires experienced staff, this procurement method can be especially difficult. Although this statute has been utilized since 1926, there is still little precedent and an overall lack of guidance (DAU, 2021). This coupled with the fact there is a potential for

protest makes it even more complicated and in need of educated acquisition professionals. Similar to Technology Investment Agreements (TIAs) these can be used in conjunction with OTs. They cannot, however, be utilized as a predecessor to a production OT, but can be utilized as a predecessor to a prototype OT. This distinction and “interchangeable use of terms and definitions confuse potential contractors and make it harder to determine compliance with the correct statute” (DAU, 2021). Procurement of experiments is currently delegated from the Secretary of Defense (SECDEF) to DARPA and the Navy, but only selectively to the Army and Air Force (DAU, 2021). This statute can be executed to a sole source without a competition justification and approval (J&A) making it a fast and flexible acquisition option (DAU, 2021). An interesting fact, statute 10 U.S.C. § 2373 is only 115 words long.

3. Cooperative Research and Development Agreements

The statute authorizing Cooperative Research and Development Agreements (CRADA) is 15 USC 3710a. CRADAs cannot provide direct funding but can be utilized by federal laboratories to provide support in the way of personnel, services, facilities, and equipment for a joint research and development effort (United States Naval Research Laboratory, 2021). CRADAs are designed to be a cooperative partnership that can help transfer technology to and from the private sector. According to Air Force Technology Transfer and Transition (T3) Mechanism’s page:

The most common and flexible way for federal labs to work with the public sector, and vice versa, is through collaborative R&D agreements. The Cooperative Research and Development Agreement (CRADA) is one of the most significant mechanisms for T2, and through them a federal lab can commit resources such as personnel, facilities, equipment, intellectual property, or other resources—but not funds—to any interested nonfederal party. A CRADA serves as a contract of sorts, whereby both parties should have the same expectations and understanding about the outcome of the agreement. (Air Force Technology Transfer and Transition, 2021)

CRADAs allow for streamlined processes and create a collaborative environment which can benefit both commercial and military applications without any direct monetary payment from the government (DAU, 2021). The main limitations of CRADA are they must be GOGO (Government Owned Government Operated) or GOCO (Government

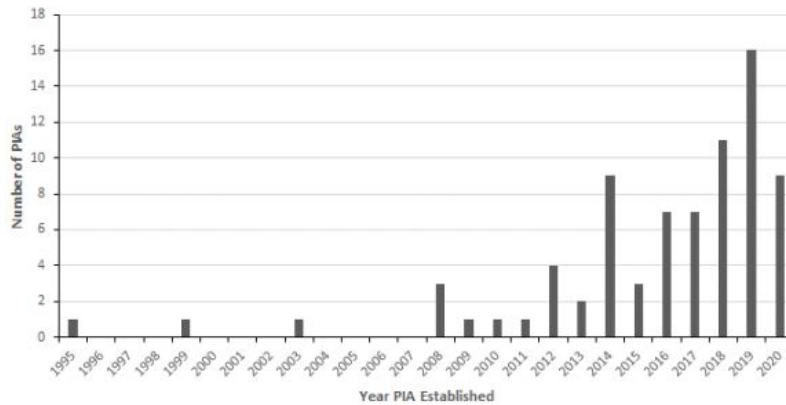
Owned Contractor Operated) labs. Additionally, while there are many services that can be provided by the government, funding is not one of them.

4. Partnership Intermediary Agreements

Similar to the other agreements, the Partnership Intermediary Agreement (PIA) is an excellent tool for technology transfer from the civilian industry to the DOD. The niche where the PIA comes in is specifically for use with government labs and federally funded research and development centers only. The United States Code (USC) states:

The term “partnership intermediary” means an agency of a state or local government, or a nonprofit entity owned in whole or in part by, chartered by, funded in whole or in part by, or operated in whole or in part by or on behalf of a state or local government, that assists, counsels, advises, evaluates, or otherwise cooperates with industry or academic institutions that need or can make demonstrably productive use of technology-related assistance from a center. (Use of Partnership Intermediaries, 2012)

This niche area of R&D makes PIA popular at U.S. Major Commands for bolstering innovation. Peña et al. (2021) stated that after PIA authority was made available to the DOD in 1991, PIA use was steady for the first 10 years, but has surged in the last few years (pp. 17–18) (see Figure 2) PIAs can function as objective third-party brokers between government and industry which both increases commercialization of new capabilities and enables tech transition and tech insertion. Additionally, PIA negotiations can be very complex and can take time in order to establish.



Source: STPI interviews and questionnaires

Note: STPI did not obtain information about the year established for 2 active PIAs.

Figure 4. Number of Active PIAs by Year Established (n=77)

⁴ STPI could not make further conclusion about historical trends from the data beyond the last 5 years since the typical life-span of a PIA is about 5 years.

Figure 2. Active PIA by Year. Source: Peña et al. (2021, p. 18).

5. Technology Investment Agreements

Technology Investment Agreement (TIA) serves as a catch-all for most R&D agreements. This agreement is often used by DARPA and those looking for templates can find them on DARPA’s website. The DAU (2021) states, “TIAs are appropriate when research objectives are unlikely to be achieved using other types of contract instruments.” In fact, research OTs are often used as TIAs in order for the government to retain intellectual property not included in the Bayh-Dole Act (DAU, 2021). When the government does not intend to deviate from the Bayh-Dole Act the TIA is used on its own as a cooperative agreement (DAU, 2021). The C.F.R. states:

The ultimate goal for using TIAs, like other assistance instruments used in defense research programs, is to foster the best technologies for future defense needs. Reduce barriers to commercial firms’ participation in defense research, to give the Department of Defense (DOD) access to the broadest possible technology and industrial base. Promote new relationships among performers in both the defense and commercial sectors of that technology and industrial base. Stimulate performers to develop, use,

and disseminate improved practices. (Technology Investment Agreement, 2011)

There are some significant differences between the TIA and the other agreements. First, it requires delegated authority from the SECDEF, or Service Secretary, and you must justify why a TIA is being used rather than another contract instrument (DAU, 2021). Next, the cost-sharing arrangements should be split 50/50 to the maximum extent practicable and can be either expenditure-based or fixed support (DAU, 2021). Additionally, TIA recipients are not able to receive any fee or profit (DAU, 2021). Lastly, TIAs can be especially difficult to negotiate and execute and therefore, similar to all other R&D agreements, the contracting officer must have an agreement officer authority to execute.

C. NON-TRADITIONAL CONTACTORS

During World War II and the Cold War, thinking about cutting-edge technology likely brought to mind images of government facilities conducting experiments in secret laboratories. Thoughts of organizations like DARPA that brought the world things like the internet and the Global Positioning System (GPS) are the best examples of military development. DARPA continues to do amazing work, but they are no longer the sole leaders in rapid technological advancement. Steinberg (2020) said, “Technological innovation is no longer led by military funding, and today’s private technology companies have largely outpaced the capabilities of the traditional defense industrial base.” The government is no longer leading the technology field. Some may find this concerning, but they may not realize how incredible of an opportunity this is for the United States. In fact, the United States is fortunate that things like Silicon Valley exist without the need for subsidies from the government. The question is how can the DOD integrate itself more with these entities?

The tip of the spear seeking out nontraditional vendors is the Defense Innovation Unit (DIU). Mike Brown, the director of the DIU stated, “Unlike in China, the U.S. government can’t simply take technology developed in the private sector and require its use within the military. Instead, the military must entice the private sector to support the military” (Department of Defense [DOD], 2020). Getting contracts with the government is

not an easy task for most contractors. The rules and regulations imposed by the government make even simple contracts complex and burdensome for the civilian sector. Steinberg (2020) said, “Small and mid-size defense technology companies face a dismaying menu of options in engaging with the DOD acquisition process.” The government does not make it easy; and due to the DOD’s complex nature, the DOD has created a class of contractors labeled as nontraditional defense contractors. These contractors are unable to do work with the DOD because they are not large enough to navigate the FAR rules and regulations, or they just do not need or choose not to work with the government due to other business opportunities. Nontraditional contractors are paving the way for future technology and therefore the future of warfighter technology as well.

In 2015 the DOD stood up a unit which “looks to the private sector for successfully deployed commercial technologies to solve problems within the Department. Areas of interest include artificial intelligence, cybersecurity, autonomous systems, human systems, commercial space, 3D printing, and augmented reality” (DOD, 2020). Since the DIU’s inception they have accomplished the following:

Today—five years later—DIU has headquarters in Silicon Valley, as well as offices in Washington, Boston, and Austin, Texas. They’ve awarded more than 160 contracts to commercial companies at a faster rate than what might have been expected from the Defense Department—sometimes in as little as 60 days. DIU has initiated 72 projects and brought 33 to completion, transitioning 20 commercial solutions to the Defense Department. The number of companies submitting to projects is up 40% this year. The DIU has also worked with around 120 non-traditional vendors—those not typically involved in defense contracts—and has attracted 60 companies who have never before worked with the Department to come forward with solutions to help the warfighter. (DOD, 2020)

DIU has found success in pulling in non-traditional contractors, but they are not the only avenue for attracting nontraditional contractors. The utilization of non-FAR-based acquisitions allows for the flexibility and expediency demanded by the commercial sector. Weinig (2019) said, “OTs (Other Transactions) allow for unique and tailored business arrangements with nontraditional defense contractors bringing a potential for rapid advancement of critical technologies into defense systems.” DIU is leading in the innovation environment, but the DOD needs nontraditional contractors on contracts with

other acquisition offices as well and should take advantage of the benefits of non-FAR based contracting to the maximum extent practicable.

D. ORGANIZATIONS AND NON-FAR

The Air Force, as well as Air Force contracting, has a very unique culture that varies from organization to organization. Military organizations have a history of standardization, conformity, and task-oriented work. This overall culture can be seen in every microculture within the DOD. As time progresses, the need for innovation and creative thinking becomes increasingly important. The commercial industry is rife with examples of innovation and outside-the-box ideas and inventions. Silicon Valley has become known as a global center for technological innovation, but many companies in Silicon Valley don't want to do business with the DOD. Steinberg (2020) stated, "Technological innovation is no longer led by military funding, and today's private technology companies have largely outpaced the capabilities of the traditional defense industrial base." Since the DOD no longer holds the mantle, it needs to look to contract out this innovation. The Air Force and DOD as a whole have a need to seek out what they can no longer do internally.

Non-FAR acquisition methods are a powerful acquisition tool for technological acquisition with nontraditional vendors. There are two issues when it comes to navigating non-FAR acquisition. First, non-FAR acquisitions are not easy. The DAU Contracting Cone lists each method as having multiple pros and cons. The cons of each method are listed below:

- Other Transactions: Pursuit and execution of an OT requires highly experienced and empowered staff; lack of guidance, structure, and processes can challenge and intimidate inexperienced staff (DAU, 2021).
- Procurement of Experimental Purposes: Pursuit and execution of this provision, especially when used in combination with an OT, requires highly experienced and empowered staff; lack of guidance, structure, and processes can challenge and intimidate inexperienced staff (DAU, 2021).

- Partnership Intermediary Agreements: Complexity to negotiate and execute increases time to establish agreement (DAU, 2021).
- Technology Investment Agreement: Requires knowledgeable and skilled contracting officer to negotiate and execute (DAU, 2021).

The common thread and take-away from this comparison is that maximum utilization of non-FAR acquisition requires a knowledgeable and skilled contracting officer. The Air Force contracting culture is driven by clearly defined boundaries which contracting officers are required to follow. The FAR, DFARS, and AFFARS set the parameters and boundaries that enable contracting officers to execute their work from start to finish. Non-FAR acquisitions eliminate all of the guidance from the FAR and its supplements. The definitions provided by the non-FAR statutes dictate when they can be used, but not how to use them. This requires a cohesive team of experts. According to Dunn (2017), “Program managers, contracting personnel, fiscal experts, and lawyers need to be equipped with the knowledge that enables them to make maximum use of business judgment and common sense.” In interview after interview of our pre-data collection phase it became apparent that a strong acquisition team was key to success. They stressed how important finance, legal, and, most importantly, the end-user became in the lawless land of non-FAR-based acquisitions.

The ability to make sound decisions without explicit guidance is something that needs to be cultivated in those not familiar with non-FAR acquisitions . Dunn (2017) goes as far as to say, “It may be necessary to establish entirely new offices to execute innovative contracting in order to insulate practitioners from business-as-usual thinking.” Dunn’s quote brings attention to the second critical issue involving non-FAR methods. The culture within Air Force contracting is mostly homogeneous. The United States’ military history creates a lockstep culture which is then compounded by extremely rigid laws and rules from the FAR and DFARS. This makes non-FAR acquisition a more difficult venture as it does not land within the contracting officer’s typical skillset. Carillo and Gromb (2006) describe this phenomenon by saying, “Many organizations are reluctant to undertake ventures outside their core business.” When discussing non-FAR, Dunn (2017) states,

“Nothing short of culture change is required.” It could be argued that the Air Force is amidst this culture change now. While it may be slow and misunderstood, the change is happening. Carillo and Gromb’s (2006) research stated, “Our theory predicts that younger organizations should be more malleable and therefore succeed better in the new environment than older ones. By contrast, firms with a homogeneous culture are likely to suffer the most from the contextual change.” The Air Force is not a young organization. In addition, it is not a traditional business and therefore it does not operate in terms of revenue gained or lost. Instead, the Air Force suffers by losing a long-held lead in the technological race against its strategic competition.

In organizations as old, large, and standardized as the Air Force, it is imperative that the changes are directed from the top leadership within the service. Dunn (2017) states, “Selecting good personnel and educating them will not work in the long run absent positive leadership from the top, from intermediate levels and at the working level.” Interest in non-FAR acquisition comes from personnel hoping to get their acquisitions done more efficiently. Unfortunately, many of individuals seeking speed and simplicity get disappointed when they are educated on the proper use of non-FAR acquisitions. To reach the right personnel to maximize the utilization of these incredible tools, the Air Force needs to educate the right personnel. Dunn (2017) states, “Leaders themselves need to be educated on what might be possible, using other transactions and other available authorities.” The Air Force as an organization is on the right track, but the transition is not complete yet.

III. METHODOLOGY

The methodology section explains the process and purpose of the data collection from interviews and overall collection of data. The literature and primary and secondary research questions led to the design of the interview questionnaire.

A. INTERVIEW METHOD

Interviews were held over the course of several months to gather data. The interviewees' personally identifiable information was not collected, as this report attempts only to find data on organizational process and not personal opinions. These individuals span across the entire Air Force contracting career field and all individuals interviewed were asked to give answers that are traceable to specific doctrine, documents, or statements from their leadership. This method of asking for documentation allows for higher accuracy and the removal of any personal bias from the results. The protocol for the interviews allowed for an open discussion of their role within the organization. Criteria for the interviewee was kept strict to ensure the best data collected possible. They must have accurate knowledge and accessibility to documents within the organization if necessary. Once it was clear that the interviewee could accurately answer the questions, the interviewers asked each question one at a time and the answers were recorded. This type of quantitative data is essential to help answer the primary and secondary research questions on how to better improve non-FAR-based acquisitions.

B. QUESTION DEVELOPMENT

The primary and secondary research questions were the inspiration for question development as seen below. With our research questions as the baseline, we developed the 10 data-driven interview questions as follows.

Primary Questions: Are there environmental factors present in organizations utilizing non-FAR-based acquisitions that are not present in organizations that do not utilize non-FAR-based acquisition strategies?

Secondary Questions: What are the most prevalent environmental factors identified in organizations that practice non-FAR-based acquisitions?

The questions asked to each interviewee are as follows:

1. What type of contracting office are you currently working in? (State all that apply)
 - a. Operational
 - b. Systems
 - c. Enterprise
 - d. Currently or previously involved with non-FAR acquisition
 - e. Other
2. The organization has expressed an interest in innovative acquisition approaches, like non-FAR-based acquisition methods.
 - a. Strongly Disagree-1
 - b. Disagree-2
 - c. Undecided-3
 - d. Agree-4
 - e. Strongly Agree-5
 - f. Unknown
3. The financial management office that supports the contracting office has the knowledge, skills, training, and experience in the current laws and regulations regarding non-FAR-based acquisition.
 - a. Strongly Disagree-1
 - b. Disagree-2
 - c. Undecided-3
 - d. Agree-4
 - e. Strongly Agree-5
 - f. Unknown
4. The installation legal office works regularly with the contracting office and other legal offices to acquire the knowledge it needs to make informed suggestions for the acquisition team.
 - a. Strongly Disagree-1
 - b. Disagree-2
 - c. Undecided-3
 - d. Agree-4
 - e. Strongly Agree-5
 - f. Unknown
5. The contracting organization's mission partners (user) have the knowledge, skills, training, and experience in the current regulations regarding non-traditional-, non-FAR-based acquisition requirements.
 - a. Strongly Disagree-1
 - b. Disagree-2
 - c. Undecided-3
 - d. Agree-4
 - e. Strongly Agree-5

- f. Unknown
6. The contracting officer's chain of command has issued guidance that empowers all contracting personnel to make key decisions at the lowest level possible.
 - a. Strongly Disagree-1
 - b. Disagree-2
 - c. Undecided-3
 - d. Agree-4
 - e. Strongly Agree-5
 - f. Unknown
 7. Other organizations on the installation have expressed interest in non-traditional and innovative contracting methods such as Other Transactional Authorities (OTAs), Technology Investment Agreements (TIAs), Partnership Intermediary Agreements (PIAs), etc.
 - a. Strongly Disagree-1
 - b. Disagree-2
 - c. Undecided-3
 - d. Agree-4
 - e. Strongly Agree-5
 - f. Unknown
 8. The contracting organization offers training in non-traditional contracting such as Other Transactional Authorities (OTAs), Technology Investment Agreements (TIAs), Partnership Intermediary Agreements (PIAs), etc.
 - a. Strongly Disagree-1
 - b. Disagree-2
 - c. Undecided-3
 - d. Agree-4
 - e. Strongly Agree-5
 - f. Unknown
 9. Local contracting, finance, legal, etc., leadership has directed personnel to work together to get solutions as efficiently as possible.
 - a. Strongly Disagree-1
 - b. Disagree-2
 - c. Undecided-3
 - d. Agree-4
 - e. Strongly Agree-5
 - f. Unknown
 10. Organizations on the installation directly support RAPIDx patch wearers, AFWERX spark tanks, and other innovation focused offices.
 - a. Strongly Disagree-1
 - b. Disagree-2
 - c. Undecided-3
 - d. Agree-4
 - e. Strongly Agree-5
 - f. Unknown

Question 1 is a control question to help understand which type of office is being interviewed. If the interviewee has non-FAR related acquisition experience their answers were placed separately from those that have never worked with non-FAR-based acquisitions. Question 2 was utilized to gauge the interest of the contracting organization itself. Certain types of contracting offices may be more or less likely to express an interest in non-FAR-based acquisitions based on their overall purpose. Question 3 was developed to understand an environmental factor that goes into non-FAR-based training. The financial management office is key to the success of contract execution and the contracting officer must work with them. This question is designed to measure the training that the financial readiness office has received for non-FAR-based contracts. Question 4 has an identical purpose to Question 3 but is based around the legal office. The legal team is a key member to the acquisition team and the question is designed to show if the specific legal office is participating in an ongoing pursuit of knowledge to provide better insight. Question 5 is similar to the third and fourth but aims to target the other mission partners on an installation. Because they are another essential component of the team, it is necessary to understand their knowledge on non-FAR-based contracts. Question 6 attempts to tackle another environmental factor; the leadership within the unit. In contracting, there are certain authorities that are delegable to lower levels. This question will help reveal how leadership chooses to delegate certain authorities based on the contracting office's mission. Question 7 is similar to the fifth question but is based around interest in non-FAR-based contracts instead of the training aspect. Question 8 targets the contracting office itself and its training program. It is designed to see if the contracting organization has a training plan in place for non-FAR-based contracts or if those contracting officers that are currently executing them are self-taught or trained from another source. The penultimate question deals with teamwork as a whole. Based on the complexity of the contract and the likelihood of increased interactions outside of the contracting office, the leadership may see the need for directives towards teamwork. The final question helps to answer the secondary questions to help gauge how willing an organization is to support innovative groups within the Air Force.

Each question was asked one at a time to each interviewee. If they had questions about the wording or phrasing of the questions, guidance was provided. The guidance consisted of explaining the purpose of the question and how it will help answer either the primary or secondary research question. Each interviewee was picked for their unique skills and experience within the contracting career field but because of the breadth of questions some did not have answers for each question. This allowed for the question to be disregarded for that individual interview instead of having to rely on skewed data.

C. LIKERT SCALE

The Likert Scale is a scale was used for all of the questions to avoid any personal bias and provide quantitative data that could be analyzed for this professional project. In order to collect the necessary data, each participant was asked a question and had to respond on a continuum with five options ranging from strongly disagree, disagree, undecided, agree, and strongly agree. To meet the Likert scale requirements the interviews had to have at least four questions and each question is used to help analyze larger questions (Bhandari, 2020). The Likert scale can be used for quality, likelihood, experience, or agreement. This project focused on the agreement portion of the Likert scale to determine the environmental factors that are present within an organization. The respondents were able to go through their records in order to select the most appropriate response. For example, the sixth question asks about the contracting offices leadership directives to empower their personnel to make decisions at the lowest level. The interviewees were able to go through their emails or the squadrons memorandums to either disagree or agree with the statement. This allowed for a quantitative analysis of the data through the Likert Scale.

D. SAMPLE SIZE

The sample size of this study was approximately 17 different interviews, which was reasonable for qualitative analysis. Each interview was intended to represent the entire contracting offices' personnel. The theory is that because the interview questions were factual and non-opinion based, each individual within an organization should answer the same for each question. So, if the sample size were increased to get multiple responses from the same office the data would be skewed towards that office. This allowed for a

wider variety of answers across the entire Air Force. Additionally, respondents ranged from either an operational contracting office, an enterprise sourcing office, a systems level office, an office that specializes in non-FAR-based contracting, or other. This allowed for a further breakdown of data analysis. Each question could be broken out by the individual office type and gave specific insights as to how each type of office handled each scenario.

E. RESEARCH ERROR MITIGATION

When conducting research and collecting samples, it is common that there are errors in relation to data. Blair and Blair (2020) identify three main errors when it comes to sampling which are: nonsampling error, sampling error (sample variance), and sample bias. Nonsampling error occurs from the personnel administering the sample. A common type of nonsampling error is when an interviewer does not convey the question properly while administering the survey (Blair & Blair, 2020). To mitigate this error, all interviews were conducted between only two individuals with direct knowledge of what each question is attempting to convey. Additionally, each respondent was given each interview question in written form. Finally, each question was cultivated and reviewed by five different individuals for clarity and understanding.

The next type of error is called sampling error, which is also known as sampling variance. Blair and Blair (2020) said, “Samples do not always reflect a population’s true characteristics because of random variation in sample composition.” An easy way to mitigate this type of error is with a sample of a large population. Fortunately, for this survey, the team was able capture a majority of the non-FAR acquisition workforce within the Air Force. Each respondent to the questionnaire represents their entire contracting organization. Each question is built around factual information without room for bias. Therefore, while the number of respondents is low, they represent a far larger population of Air Force contracting personnel.

The final type of error is sample bias. Bias is the lens which all people view the world. Two people from the same town in the same family can view things in entirely different ways. The definition when used for research sampling “refers to the possibility that members of a sample differ from the larger population in some systematic fashion”

(Blair & Blair, 2020). The questionnaire is not focused on the individual's opinions. Each question relies on facts within the organizational environment. Individuals questioned at the same location will respond with the same answers. This error is mitigated by the elimination of bias for each answer.

F. VARIABLES

1. Interviewee Organization

Answers will be broken down and analyzed based the interviewees answer to Question 1 on contracting experience. Data collected by the interviews will be analyzed at the overall Air Force level but will also be analyzed at the interviewees experience level. Understanding the organizational factors at different contracting offices is key to understanding how the organizations operate and if they differ from those which utilize non-FAR acquisitions .

2. Organization Question Responses

Questions 2–10 will be analyzed individually as well as at the organization level. Each question utilizes the Likert Scale to quantify how the unit performs on several organizational identifiers. Most of which relate to non-FAR acquisition. These identifiers will indicate whether there are differences in non-FAR organizations as well as between operational, enterprise sourcing, and systems. All interviewees are answering for their entire organization and based on factual data, not opinion. Therefore, if additional personnel were interviewed within the same organization they would respond with the same answers.

THIS PAGE INTENTIONALLY LEFT BLANK

IV. DATA ANALYSIS RESULTS

A. INTERVIEW QUESTIONS BREAKDOWN AND ANALYSIS

The interview methodology contained 10 questions total. Question backgrounds and descriptions can be found in the methodology section of this paper. First, the data will be analyzed as the Air Force as a whole. Next, an analysis of each question will be compared by experiential group based on how they answered the first question.

(1) Q1: What type of contracting office are you currently working in?

Question 1 breaks down the experiential breakdown of the specific interviewee. Each interviewee answered each question as a representative of their entire organization. For the 17 interviewees we focused on identifying as many non-FAR organizations as possible, while still having a good mix of FAR based contracting units as seen in Figure 3. We interviewed approximately 47% non-FAR Contracting Officers and 53% traditional Contracting.

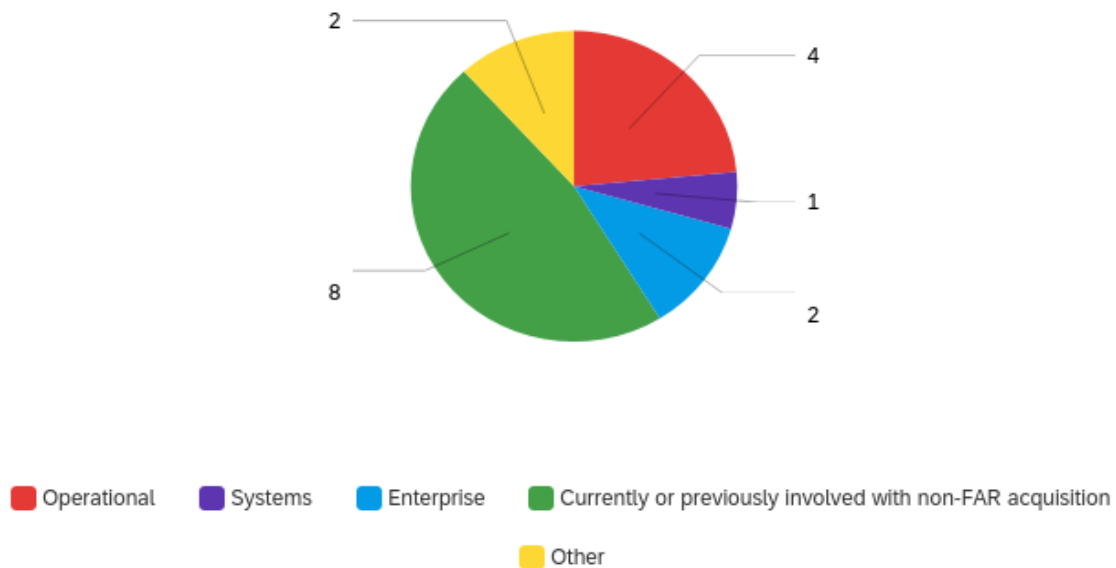


Figure 3. Questionnaire Experiential Breakdown

(2) Q2: The Organization has expressed an interest in innovative acquisition approaches, like non-FAR based acquisition methods?

As shown in Figure 4, question 2 had 12 of 17 respondents with “agree” or “strongly agree.” Only 4 of the 17 interviewees or 23.52% disagreed their organizations were not looking for innovative acquisition methods. This shows that the Air Force contracting offices are hungry for new innovative ways for acquisitions. This also supports the non-FAR hype identified in interviews.

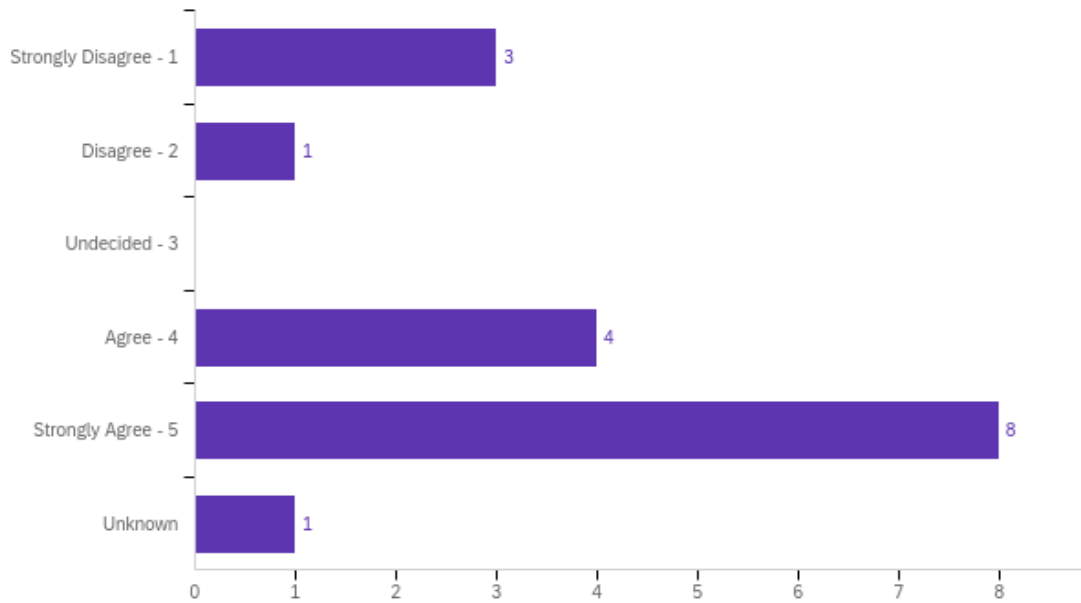


Figure 4. Question 2 Overall Breakdown

Most disagreement with organizational interest in non-FAR came from the operational community. This is likely due to the type of work performed in operational offices. There is an expectation for this to be a mainly positive response from all groups of acquisition due to the misunderstood use of non-FAR, but this question supports the fact that it is not sought after at the operational level as displayed in Figure 5. Six of the 11 “agrees” came from the non-FAR community itself making up the majority. It is surprising to see a “disagree” and “unknown” response given this is their area of work. Perhaps these

offices understand the complexity involved in non-FAR contracts and utilize them only when appropriate or necessary.

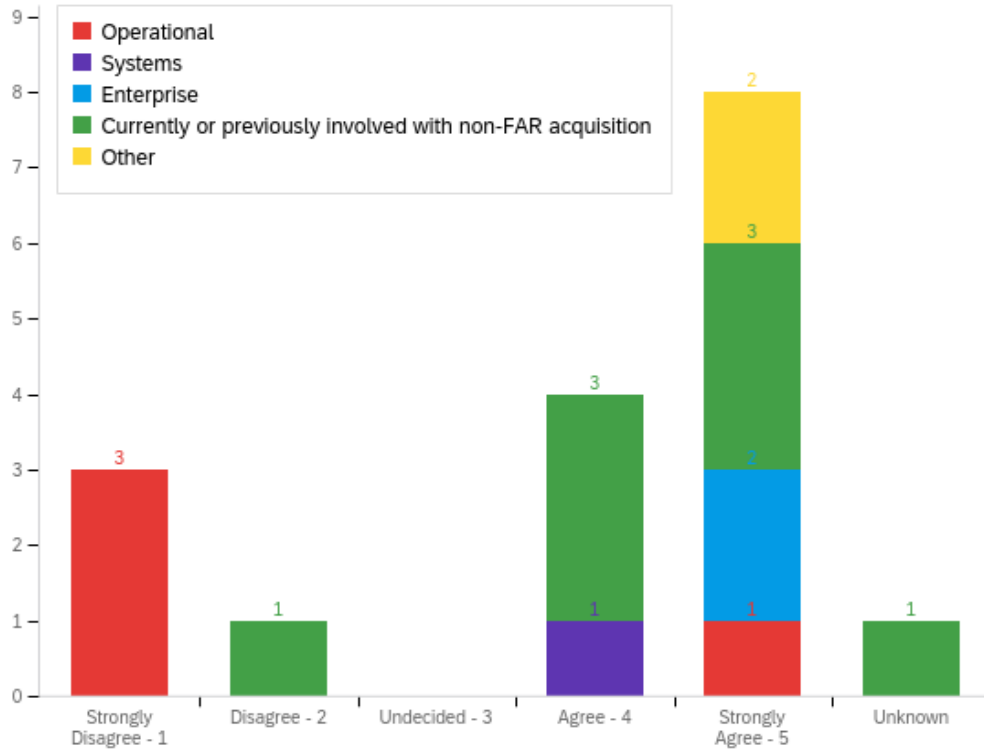


Figure 5. Question 2 Experiential Breakdown

- (3) Q3: The financial management office that supports the contracting office has the knowledge, skills, training and experience in the current laws and regulations regarding non-FAR based acquisition.

Responses to question 3 had the most variable response: 41.17% of respondents disagreed that their financial management (FM) office is experienced in regards to non-FAR acquisition laws and regulations (see Figure 6). Compared to the 41.18% of respondents which agreed. That is a nearly even split among Air Force acquisition organizations. If you remove the respondents who were undecided or didn't know, half of the respondents which that were not confidence that their FM office was familiar with non-FAR regulations. That means half of the Air Forces FM offices are ready to perform non-

FAR. With this niche type of acquisition, a 50/50 chance of having a prepared FM office is high.

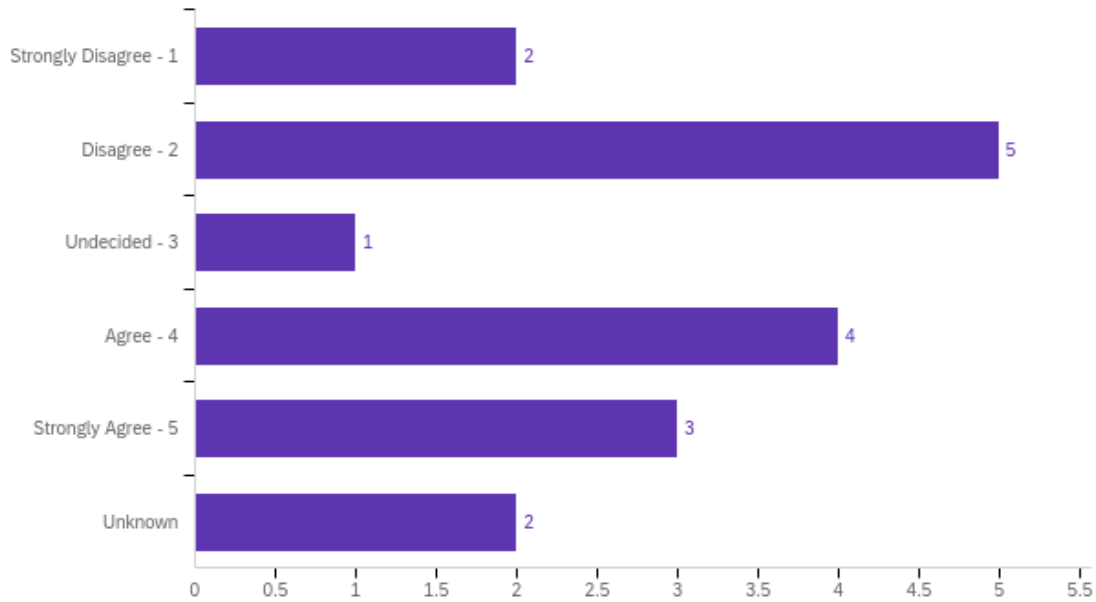


Figure 6. Question 3 Overall Breakdown

Not surprisingly six of the eight “agree” responses came from non-FAR offices as shown in Figure 7. Showing that non-FAR work coincides with non-FAR knowledge. Two of the eight non-FAR respondents disagreed that their FM office was knowledgeable of the necessary laws and regulations. Therefore, 25% of non-FAR offices interviewed were not confident in their FM office.

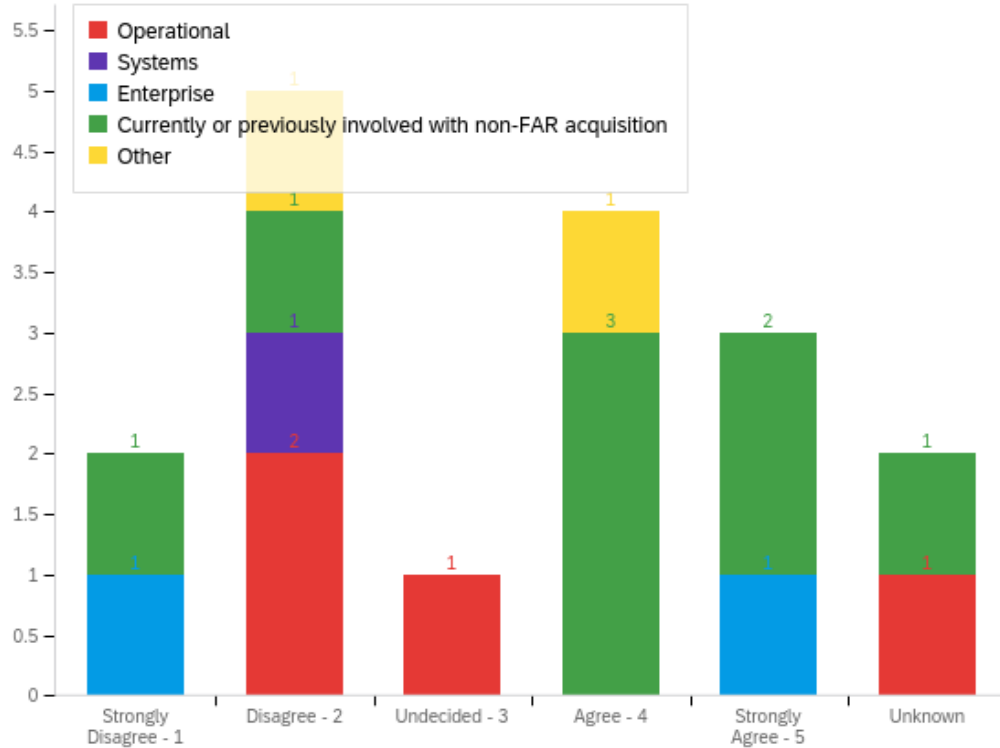


Figure 7. Question 3 Experiential Breakdown

- (4) Q4: The installation legal office works regularly with the contracting office and other legal offices to acquire the knowledge it needs to make informed suggestions for the acquisition team.

Similar to question 3, question 4 studies the acquisition offices confidence in their legal staff. In contrast to the finance office the responses were largely in the agree pool. 13 of the 17 or 76.47% of respondents “agreed” that that their legal team had the knowledge and means to support their contracting office (see Figure 8). Only two respondents “disagreed.” This shows for the Air Force as a whole most acquisition organizations trust their legal staff to bring them informed and expert opinions.

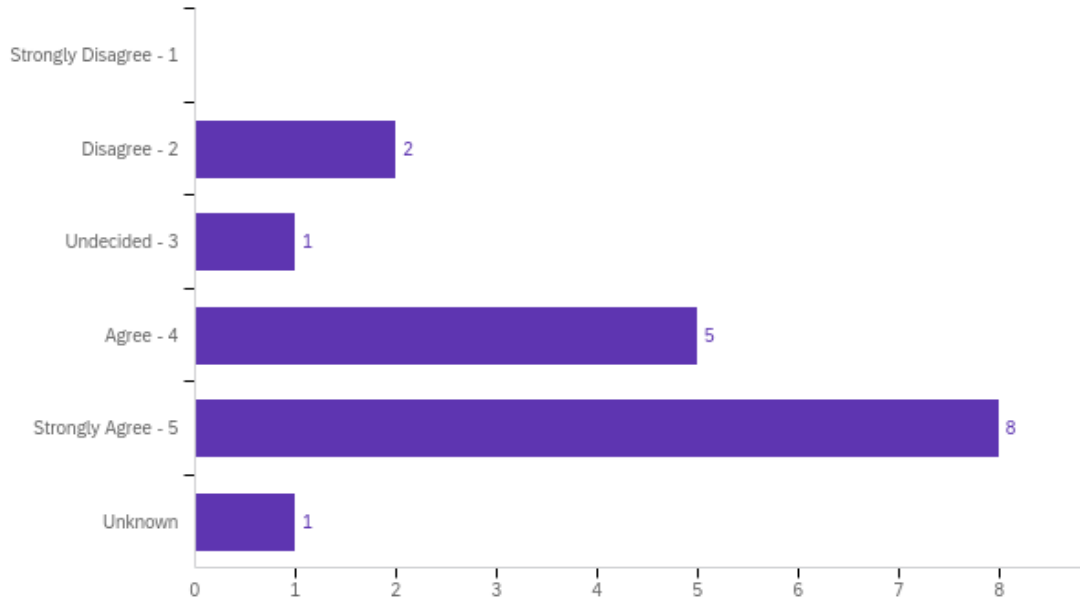


Figure 8. Question 4 Overall Breakdown

The respondents which replied “agree” came from all walks of acquisition life as seen in Figure 9. Both respondents which “disagreed” with this question also “disagreed” with question 3. Since each question is based on the organization and not on personal opinion 11.76% of organizations interviewed have both a difficult relationship with their legal and financial offices.

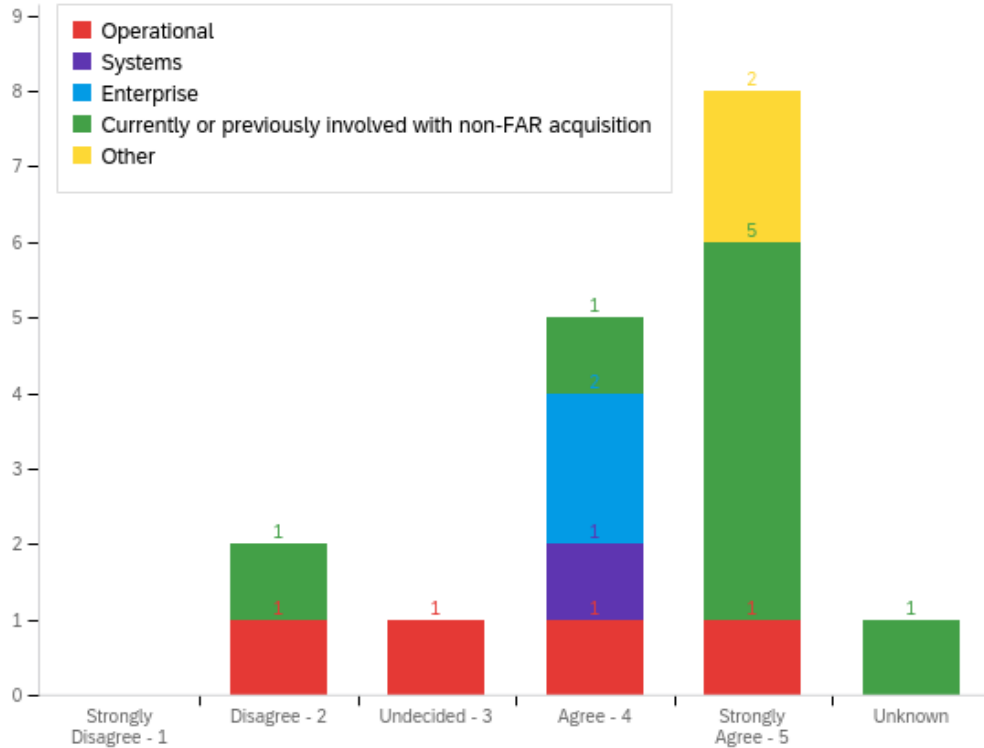


Figure 9. Question 4 Experiential Breakdown

- (5) Q5: The contracting organizations mission partners (user) have the knowledge, skills, training and experience in the current regulations regarding non-traditional, non-FAR based acquisition requirements.

Within the same vein of question 3 and 4 question 5 is looking to establish whether the acquisition office feels their mission partners are capable of working non-FAR-based acquisitions. This is also the first question without an unknown response. Similar to question 2, there is a close to even split between “agree” (47.06%) and “disagree” (41.18%) (see Figure 10). The expectation for this was to have a larger “disagree” pool of respondents, but the majority of respondents felt confident in their mission partners.

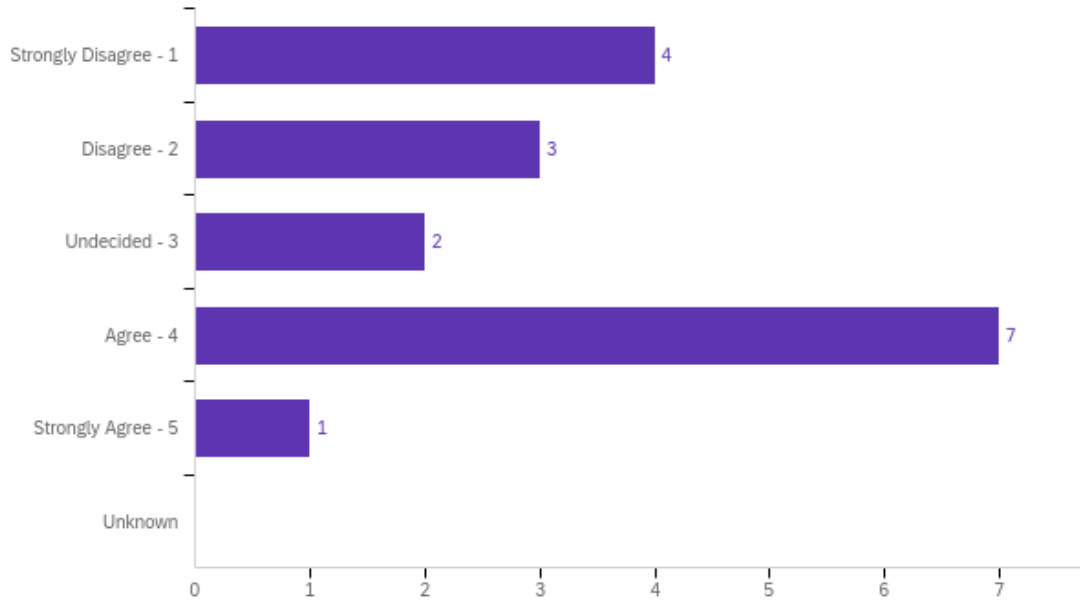


Figure 10. Question 5 Overall Breakdown

As shown in Figure 11, half of non-FAR contracting offices felt they had mission partners that were knowledgeable of non-FAR rules and regulations. There are still some non-FAR offices that do not feel their mission partners are familiar to the regulations. This could be because the contracting office retains most of that information and work with the mission partner to decide what contracts are best given the requirement, or it could indicate a reluctance to learn by the mission partner.

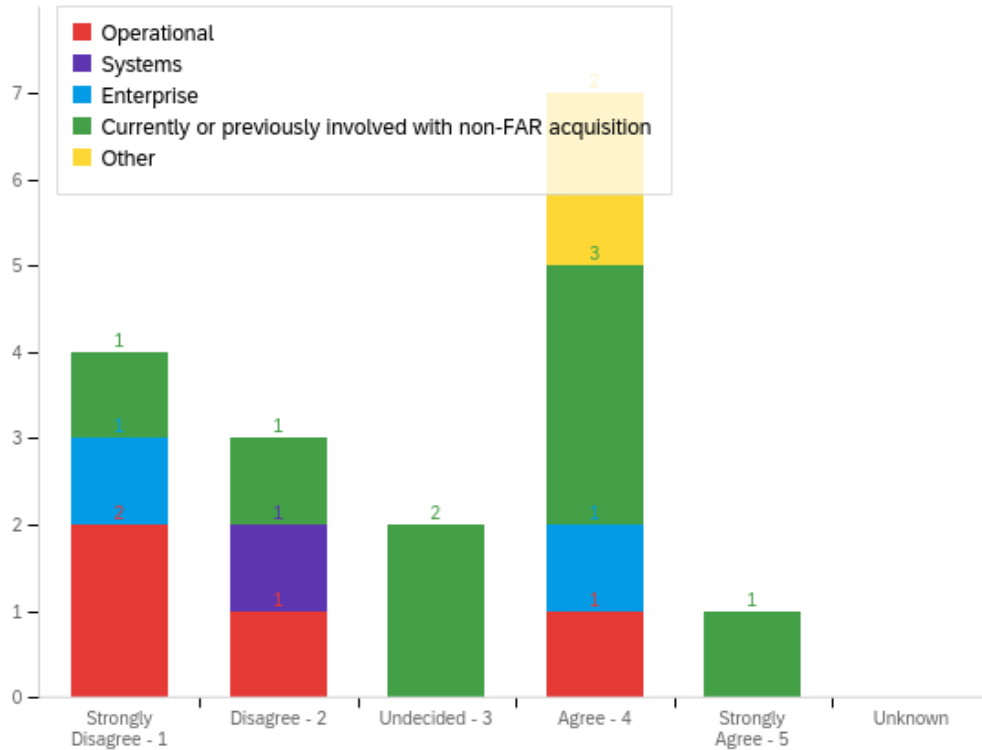


Figure 11. Question 5 Experiential Breakdown

- (6) Q6: The Contracting Officer’s Chain of Command has issued guidance that empowers all contracting personnel to make key decisions at the lowest level possible.

Question 6 had one of the most positive responses in the survey as detailed in Figure 12. This question is looking to understand the cultural climate created by the leadership. Over 64% of survey respondents have leadership that are pushing decision down to the lowest level. In contracting there are certain thresholds which require decisions made at higher levels and for good reason. This survey shows us that decision making is being pushed down the maximum extent practicable. In our opinion, this is likely due to the large emphasis by senior Air Force contracting leaders to push decision making to the lowest levels possible. Only 11.76 or 2 out of 17 respondents have a high decision threshold.

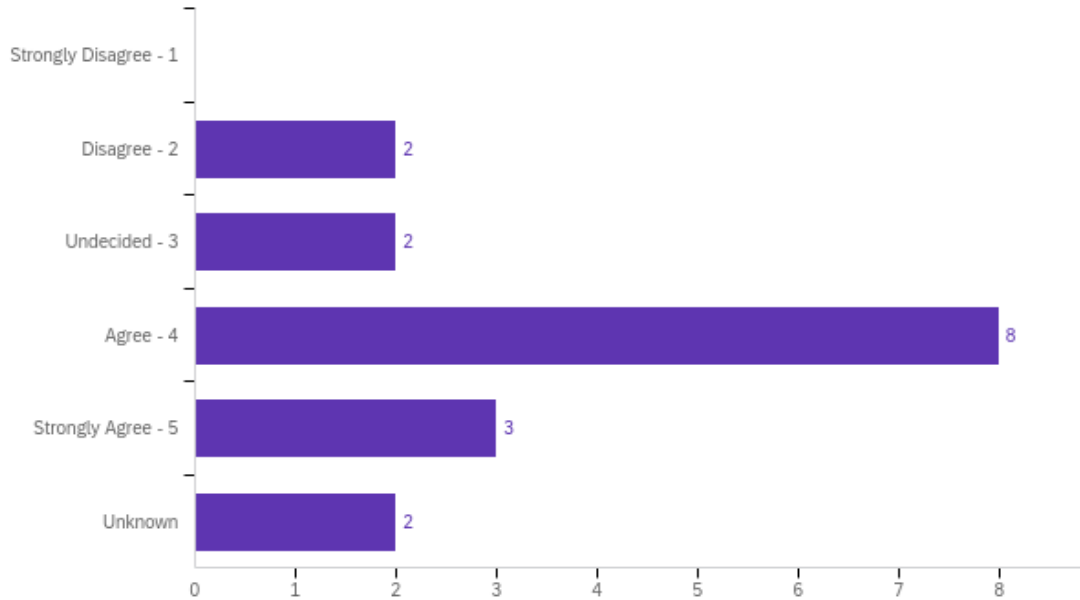


Figure 12. Question 6 Overall Breakdown

Not a single non-FAR office disagreed that their leadership push decision down to the lowest level possible (see Figure 13). These complex contract types require acquisition personnel who are skilled and knowledgeable. This likely creates a trust from leadership that personnel will make the right decision. The only two “disagrees” received by this question came from operational and enterprise organizations. Operational units have many new 1102, 64P, and 6C personnel. Enterprise squadrons don’t normally have brand new personnel, but still mainly holds personnel within their first 5 years of contracting. Newer personnel tend to drive the need to maintain higher levels for decision authorities.

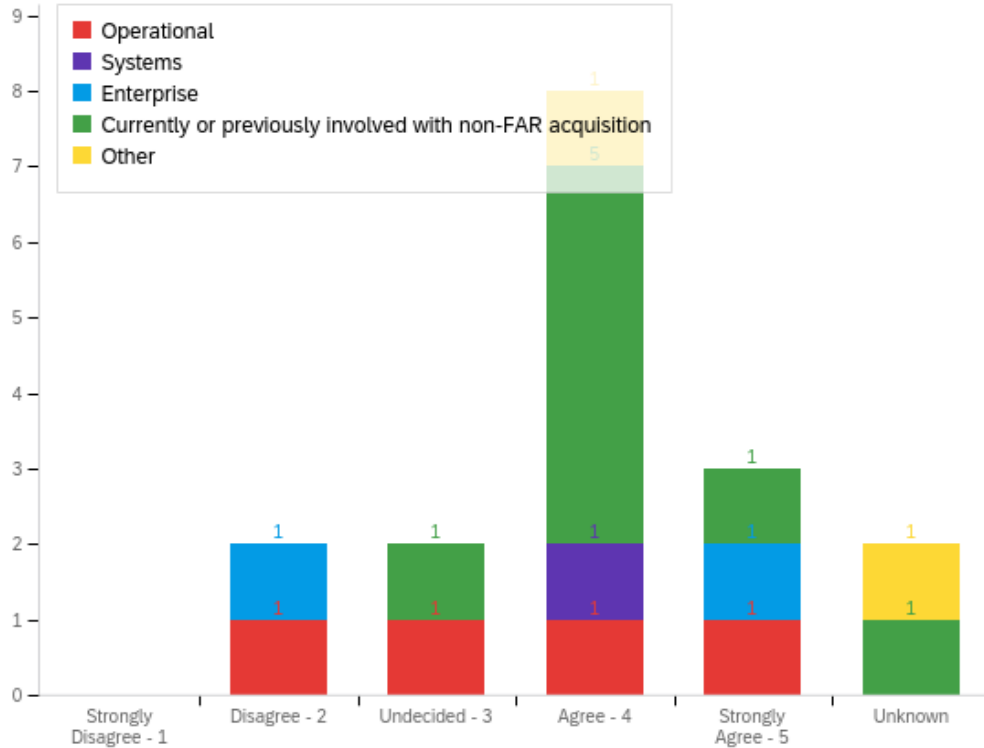


Figure 13. Question 6 Experiential Breakdown

- (7) Q7: Other organizations on the installation have expressed interest in non-traditional and innovative contracting methods such as Other Transactional Authorities (OTAs), Technology Investment Agreements (TIAs), Partnership Intermediary Agreements (PIAs), etc.

Similar to question 2 this question is looking to identify interest in non-FAR acquisitions. Unlike question 2 this question focuses on outside organization throughout the installation, not just the contracting office. As demonstrated in Figure 14 this question was mainly positive with 11 of our 17 respondents “agreeing” that other organizations are seeking this out. The interesting result is the large cluster of strongly disagree and strongly agrees. This demonstrates how organizations are either completely oblivious to non-FAR options or they are eagerly seeking them out.

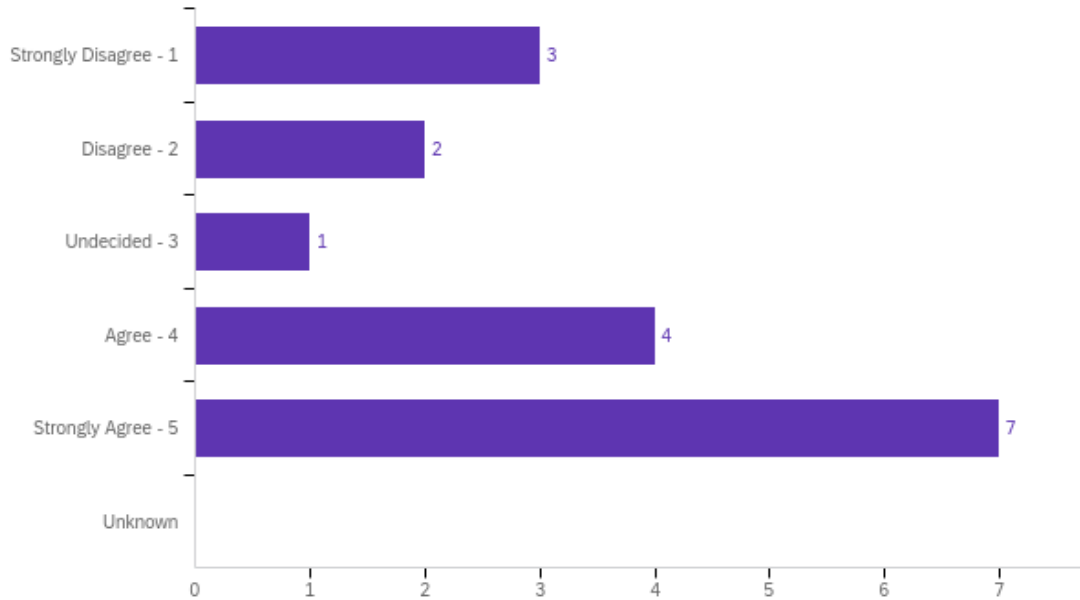


Figure 14. Question 7 Overall Breakdown

As displayed in Figure 15, a majority of the “agrees” received came from non-FAR acquisition offices. While 75% of non-FAR respondents “agreed” the more curious number is the one respondent that “disagreed.” This figure is due to the expansion and understanding of non-FAR throughout the acquisition workforce. This respondent comes from the SOCOM community and brought the utilization of non-FAR to his community.

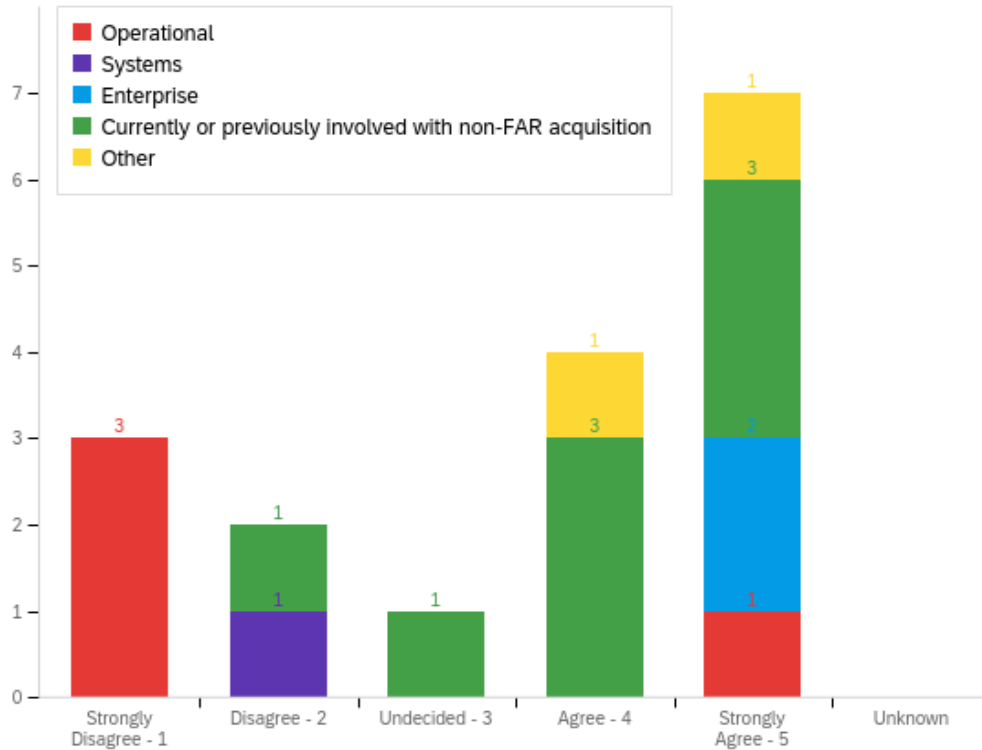


Figure 15. Question 7 Experiential Breakdown

- (8) Q8: The contracting organization offers training in non-traditional contracting such as Other Transactional Authorities (OTAs), Technology Investment Agreements (TIAs), Partnership Intermediary Agreements (PIAs), etc.

Question 8 is a straight forward question regarding the availability of training on non-FAR. Over half of respondents “disagreed” that their organization offered any kind of training (see Figure 16). Only 23.53% of respondents “agreed” that they had training available to them. This indicates an overall minimal amount of training within the Air Force. While people are hearing about OTAs and other non-FARs through the grapevine they are not receiving training.

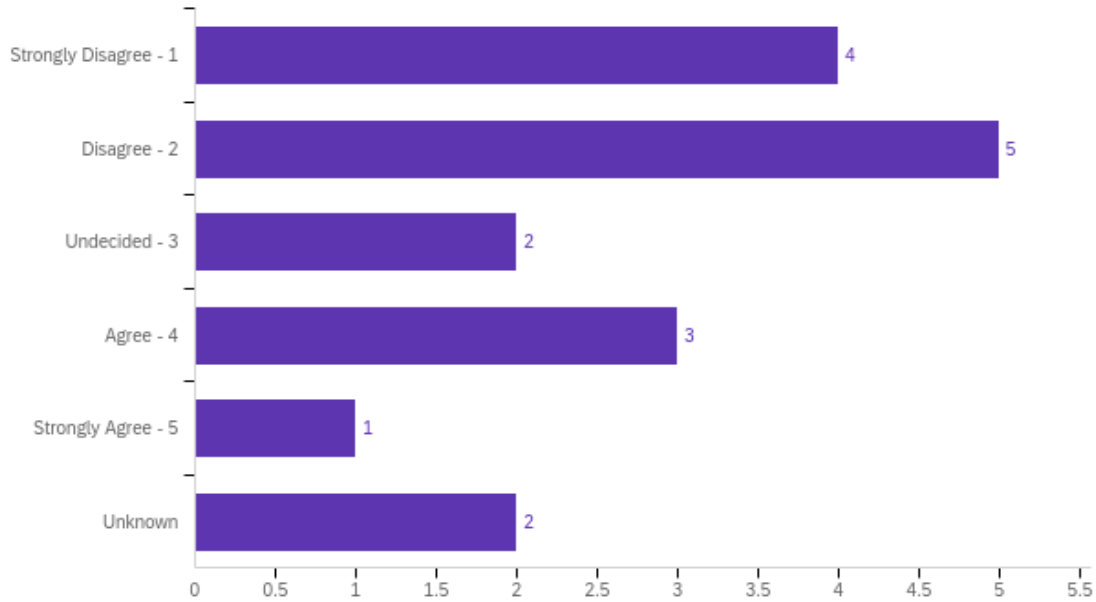


Figure 16. Question 8 Overall Breakdown

Given the fact that we had 8 non-FAR respondents it would be fair to assume most if not all the “agrees” received would have come from the non-FAR respondents. Shown in Figure 17, only 3 of the non-FAR respondents “agreed” that they received training on non-FAR. Half of the non-FAR respondents flat out disagreed that they had formal training. This demonstrates how non-FAR acquisition is still very much a “learn by doing” or “on-the-job-training (OJT)” environment. While there are talks of training being developed there currently is no formal training available Air Force wide. DAU has CLC 066 an OT specific training, but not any other non-FAR based acquisition methods. Another curiosity is the strongly agree from an enterprise squadron. This indicates that non-FAR acquisition is being taught even at non-FAR offices.

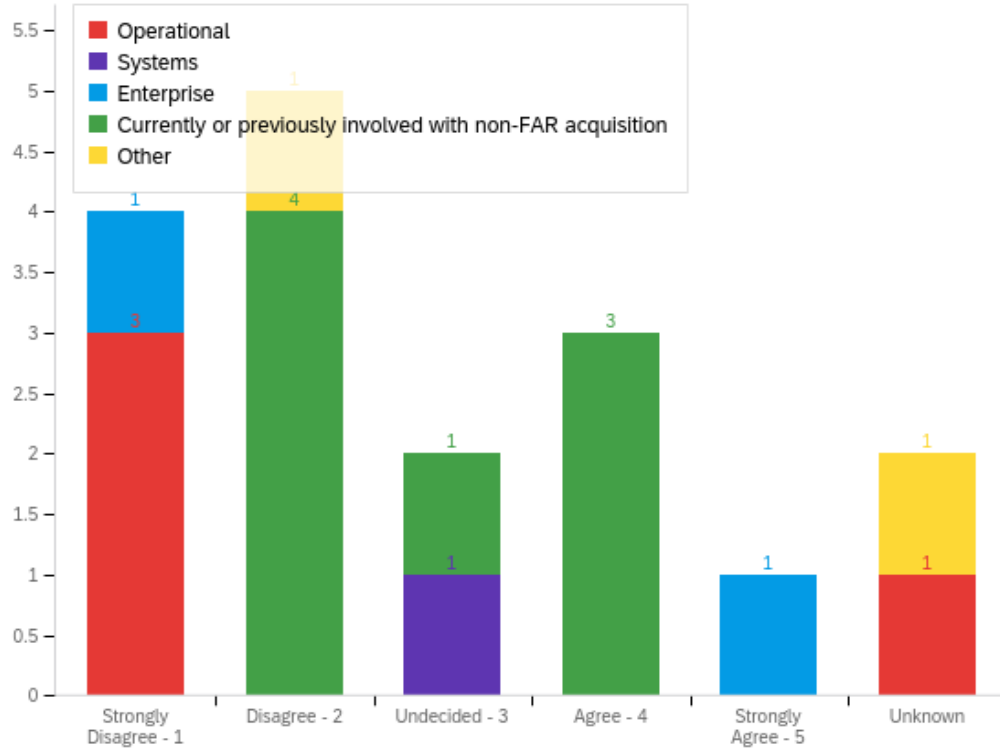


Figure 17. Question 8 Experiential Breakdown

- (9) Q9: Local Contracting, Finance, Legal, etc., leadership has directed personnel to work together to get solutions as efficiently as possible.

Question 9 had the largest number of “agrees” out of the questionnaire, as seen in Figure 18. Fourteen of the 17 respondents “agreed” their leadership directed contracting, legal, finance and other mission partners to work together. That makes 82.36% of organizations interviewed are directed to efficiently find solutions with their counterparts. This denotes a culture of teamwork within the acquisition community of the Air Force.

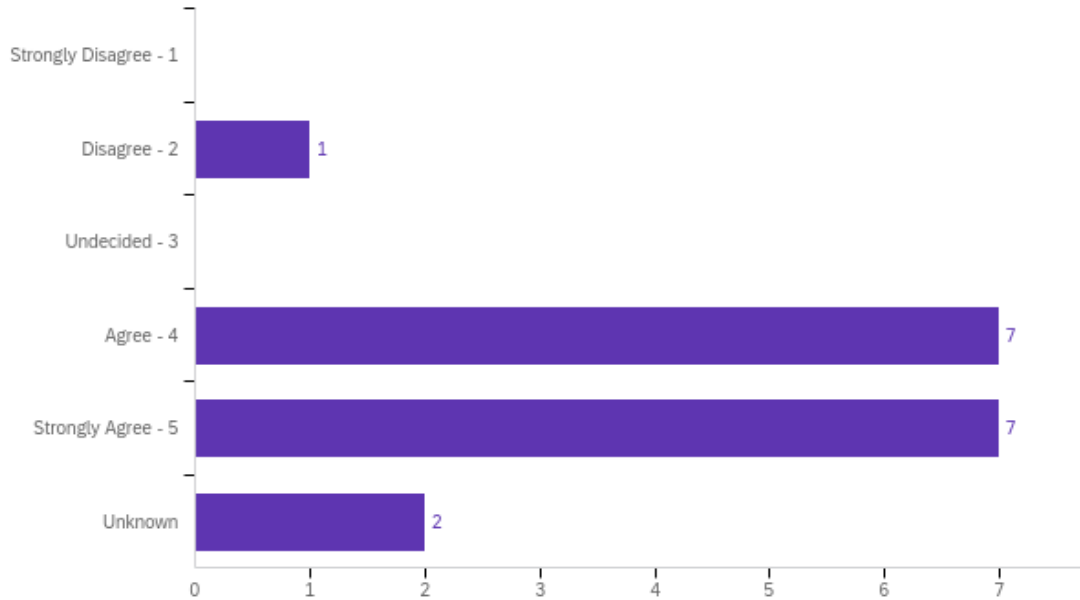


Figure 18. Question 9 Overall Breakdown

The assumption for this question was that non-FAR offices would have a higher integration rate between mission partners. From this questionnaire, however, we see team work importance from not only the non-FAR community, but from all acquisition offices (see Figure 19). The only disagree received came from our AFWERX respondent. While AFWERX is thought of as a lean innovative organization the office still had issues with working with the finance and legal offices.

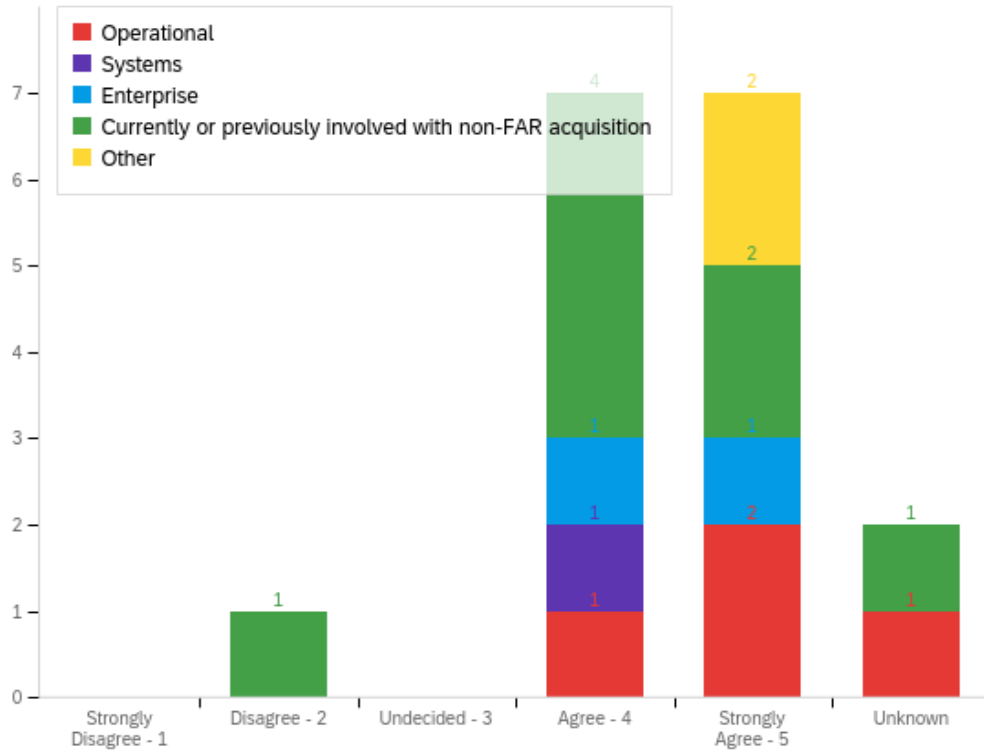


Figure 19. Question 9 Experiential Breakdown

- (10) Q10: Organizations on the installation directly support RAPIDx patch wearers, AFWERX spark tanks, and other innovation focused offices.

Figure 20 shows just over half of respondents said they “agreed” that their office supported innovative organizations. This is encouraging to see as innovation is a key pillar in the future of the Air Force. This question had the largest number of undecided responses with 17.65% of respondents unsure whether their organization supports organizations like RAPIDx and AFWERX. Given our respondents had to answer as an organization with evidence-based responses these responses likely had contradicting evidence of both support and opposition.

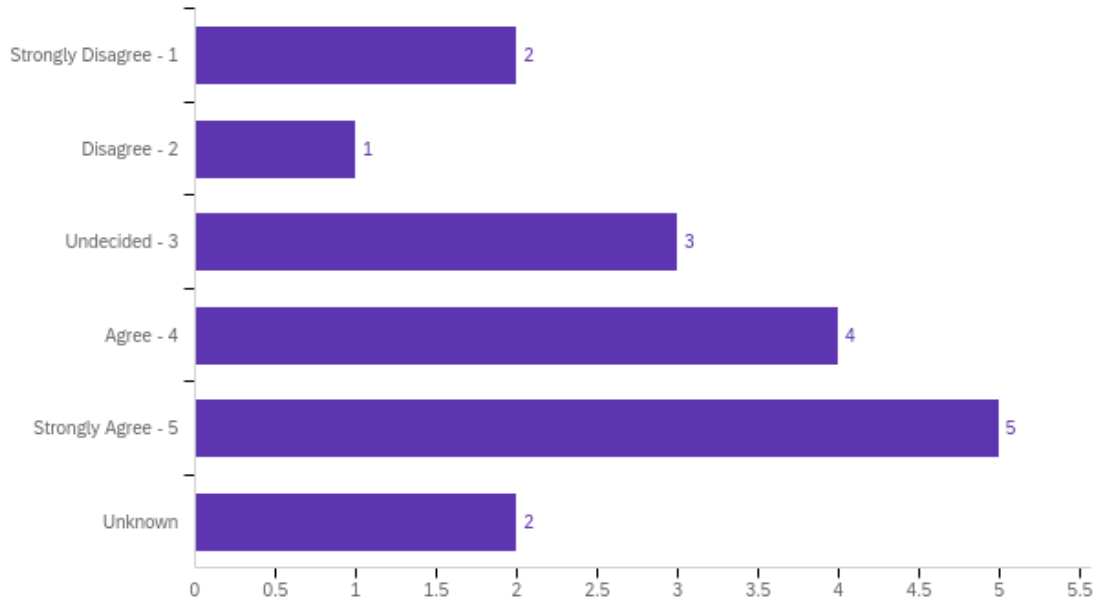


Figure 20. Question 10 Overall Breakdown

The answers varied across the different office types, as seen in Figure 21. Non-FAR offices slightly favored agree with half of respondents landing in the agree column. Non-FAR also made up the entirety of the “undecided” category. Curious to see innovative offices completing non-FAR acquisitions landing in the middle when it comes to innovative programs. Half of the operational respondents “strongly disagreed” that their organization support innovative offices. This may speak to the experience of the leadership at the operational level or it may be due to constrained resources at the operational level. It may also be due to less perceived reward from being part of such a program.

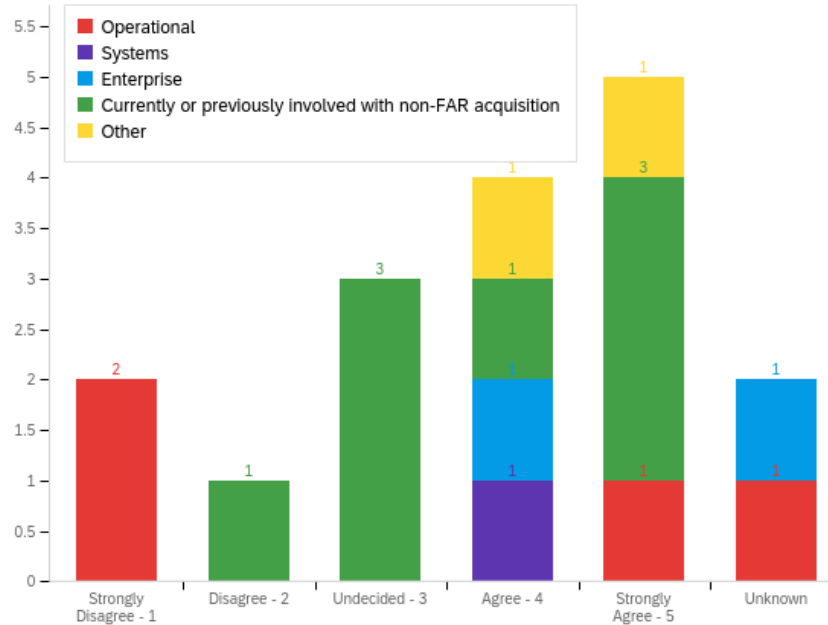


Figure 21. Question 10 Experiential Breakdown

2. Trend Analysis

Questions 3,4 and 5 look to address the effectiveness of the acquisition supporting offices. Each seeks to understand how that supporting office may perform in relation to non-FAR acquisition. We asked these questions to all respondents to understand if acquisition offices not currently completing non-FAR acquisition could be capable or how they would differ in these aspects from non-FAR acquisitions. What we found was most acquisition offices interviewed are confident in their legal staff's ability to complete work and their ability to reach out to peers to get answers. When it comes to the finance and mission partners however, there is a close to 50% "agree" and "disagree" split. While the majority of non-FAR offices landed on the "agree" side of the spectrum, there were still some non-FAR offices that "disagreed." This shows that while most of our non-FAR offices also have confidence in their acquisition support team when it comes non-FAR acquisition there are still some offices that are being supported by offices that are not familiar with the laws and regulations.

To analyze interest in respondents we utilized questions 2 and 7. Question 2 focused on the contracting office while question seven focused on if outside organizations are

seeking out non-FAR acquisition. Air Force contracting wide both of these questions received positive responses with 70.58% “agrees” for question 2 and 64.71% “agrees” from question 7. The Airforce as a whole is hungry for innovative solutions and are overtaken by a non-FAR contracting fever. “Strongly disagrees” for both questions were made up entirely of three operational respondents. This is not surprising as the amount of uses for non-FAR acquisition at operational locations is very low. There was an expectation given the misunderstanding of what non-FAR is capable of that this fever would have caught at all levels of acquisition. Only one of the four operational respondents selected “agree.” This indicates that at least 75% of respondents may either be ignorant to non-FAR contracting or know there is nothing for operational contracting.

In regards to each offices leadership we looked into whether decision was being pushed to the lowest level for question 6 and if leadership directed personnel to work with their acquisition counterparts with question 9. Both have a majority of “agrees” with question 9 having an incredible 14 out of 17 respondents. This tells us that leadership trusts their personnel to get the job done. To be “contracting ninjas” and work together with our acquisition counterparts to find solutions. Our acquisition leaders are setting our people up for success by pushing integrated teamwork and promoting personnel reliance in daily tasks and decision making.

Finally, we verified whether or not non-FAR is being trained throughout our offices in question 8 and whether or not offices were interested innovative offices in question 10. Both showed somewhat irregular responses compared to our other questions. Question 8 had our most negative response with over 50% “disagree” responses and while we saw a majority for “agree” for innovative office support it also held the largest number of undecided responses in the survey at three with all three coming from the non-FAR community. It is clear from question 8 that non-FAR contracting is not being taught widely throughout contracting offices, or in non-FAR offices. Only three non-FAR respondents “agreed” that they were retrieving training. While the majority trended with Air Force contracting as a whole with a majority in “disagree.” Lastly, this research shows a majority of respondents have offices which support innovative offices which shows a positive trend in Air Force acquisition.

V. CONCLUSION

A. SUMMARY

When exploring the non-FAR landscape, there were many types of literature about Other Transactions (OTs), but very little research on other areas of non-FAR contracts. With a growing near peer threat, there is a clear need for more flexible acquisition and a perceived hunger for contracting speed within the acquisition community. These pressures helped in order to develop the research questions below:

Primary Question: Are there environmental factors present in organizations utilizing non-FAR-based acquisitions that are not present in organizations that do not utilize non-FAR-based acquisition strategies?

Secondary Question: What are the most prevalent environmental factors identified in organizations that practice non-FAR-based acquisitions?

In order to answer the primary question of, “are their factors present in non-FAR organizations that are not present in other locations” the team first had to establish the factors they wanted to further understand. Identifying these factors comes from the secondary research question. In other words, the secondary research question needed to be answered before the primary question could be further researched. With help from colleagues and mentors, the team began the initial unofficial round of interviews. The goal for these interviews was to gain a better understanding of the office environment and more specifically the non-FAR contracting environment. The culmination of these interviews led to some minor conclusions. One of these minor discoveries is that success in the non-FAR environment appeared to be predicated on mainly the acquisition team’s ability to operate in this unfamiliar environment. Having a knowledgeable and flexible finance, legal, and contracting office is essential for contract success. It is for this reason that 6 of the 10 questions focused on the acquisition team. Additional environmental factors that were included are leadership, training, and innovative culture. The interview questions are listed below and were developed based on the initial research showing the importance of the entire acquisition team.

1. What type of contracting office are you currently working in? (State all that apply)
2. The organization has expressed an interest in innovative acquisition approaches, like non-FAR-based acquisition methods.
3. The financial management office that supports the contracting office has the knowledge, skills, training, and experience in the current laws and regulations regarding non-FAR-based acquisition.
4. The installation legal office works regularly with the contracting office and other legal offices to acquire the knowledge it needs to make informed suggestions for the acquisition team.
5. The contracting organization's mission partners (user) have the knowledge, skills, training, and experience in the current regulations regarding non-traditional-, non-FAR-based acquisition requirements.
6. The contracting officer's chain of command has issued guidance that empowers all contracting personnel to make key decisions at the lowest level possible.
7. Other organizations on the installation have expressed interest in non-traditional and innovative contracting methods such as Other Transactional Authorities (OTAs), Technology Investment Agreements (TIAs), Partnership Intermediary Agreements (PIAs), etc.
8. The contracting organization offers training in non-traditional contracting such as Other Transactional Authorities (OTAs), Technology Investment Agreements (TIAs), Partnership Intermediary Agreements (PIAs), etc.
9. Local contracting, finance, legal, etc., leadership has directed personnel to work together to get solutions as efficiently as possible.
10. Organizations on the installation directly support RAPIDx patch wearers, AFWERX spark tanks, and other innovation focused offices.

These initial interviews laid the groundwork for the establishment of the sample questions and data set. Overall, 17 interviews were held with personnel throughout the Air Force Acquisition career fields. An effort was made to conduct as many interviews as possible during the data collection window. Even with end of fiscal year and a limited number of Air Force organizations, a significant 17 organizations were interviewed. Each interview represents not the individual, but the organization as a whole. The majority of the interviewee's came from non-FAR based organizations and operational organizations. Non-FAR based organizations accounted for roughly 47% of interviewees and operational organizations at almost 25% of respondents.

Questions 2 and 7 focused on the interest in non-FAR based acquisitions by the acquisition office as well as outside organizations. This environmental factor was very present in non-FAR organizations, and appeared the least out of operational organizations. The single systems interviewee had a contracting office seeking out non-FAR, but not outside organizations. The limited number of systems contacting interviewees makes this an organization specific observation rather than an acquisition organization observation. All systems and "other" organizations also trended with the non-FAR based organizations having this factor present in their office. The only organizations that did not trend with the non-FAR based organizations were the operational organizations.

Questions 3 through 5 focused on the knowledge and ability of the finance, legal, and mission partners. The majority of non-FAR based acquisition organizations had finance, legal, and mission partners who were knowledgeable on non-FAR laws and regulations. While the majority have these environmental factors 1–2 or about 20% of non-FAR based acquisition organizations did not have these factors. Operational, systems, enterprise, and "other" organizations had a majority of offices with the environmental factor of an effective legal office. In contrast to the legal environmental factor, the operational and systems organizations did not have a majority of organizations with a non-FAR knowledgeable financial office. Both enterprise and "other" organizations were split when it came to the financial office environmental factor. Lastly, the mission partner factor of non-FAR knowledge of laws and regulations had a majority of operational and the systems missing this factor. Enterprise was

also split on whether or not this factor was present. The “other” respondents both have non-FAR knowledgeable requirement owners.

Questions 6 and 9 focused on the contracting organizations leadership as well as the acquisition team leadership as a whole. Question 6 seeks to determine whether the contracting organization has an environment where contracting officers (COs) are empowered to make decisions at the lowest possible. Question 9 seeks to identify if the legal, finance, and mission partner leadership have directed personnel to work together as a team. These two questions had the most positive responses in the interviews. Operational, systems, non-FAR, and “other” organizations all had a majority of organizations with both empowered COs and strong acquisition teams. Enterprise was once again split when it came to an environment of empowered COs, but had a majority of organizations with a legal, finance, and requirement owners working together. For these environmental factors, only one enterprise base did not hold the same factors of the non-FAR organizations.

Next, question 8 focused on training for the contracting office. Question 8 asked if non-FAR training was available within the squadron or unit. Non-FAR based training was a factor expected to be present across Air Force acquisitions, but surprisingly a majority of non-FAR based acquisitions were not receiving training. Operational and “other” organizations were also missing training in non-FAR based acquisitions. Enterprise organizations were once again split with half having training and half going without any instruction. The systems interviewee was not sure and since they were answering on behalf of their organization, but they were an “undecided” when it came to the environmental factor of training.

Lastly, the team wanted to see if a culture of innovation was a factor found in non-FAR offices as well as through out acquisition. Question 10 asks if their organization supports RAPIDx, AFWERX and other innovative programs. Similar to questions 2 and 7, all organizations had a majority of offices having an innovative supportive environment with the exception of operational missing this factor. Three non-FAR organizations were undecided whether or not their organization supported innovative programs. Fifty percent of non-FAR organizations support innovative programs while 37.5% were undecided on the subject. Therefore, it can be said that a majority of non-FAR units support innovative programs, but the large amount of indecision could be an indicator of something that was overlooked in the

wording of the question or the specific interviewees lack of knowledge on the outreach within the organization.

In summation, when it comes to environmental factors relating to non-FAR organizations, the operational organization is missing the majority of these factors. The majority of operational offices are missing all factors except a strong legal office, CO empowering leadership, and teamwork-oriented acquisition teams. Enterprise respondents found themselves split on most of the factors. The systems organization held 6 of the 10 environmental factors. Other respondents found themselves split on financial knowledge, but had all other environmental factors except for training. The non-FAR organizations had a majority of organizations with 9 of the 10 factors identified by this questionnaire. Training is the only environmental factor non-FAR based organizations are missing based on this research.

B. RECOMMENDATIONS

Based on the research conducted and the findings from the environmental interviews the following recommendations were created and should be implemented to ensure that the Air Force as well as the United States can continue to outpace its strategic competition:

First, there needs to be more education on non-FAR based contracts and their intended uses. It is clear that many users and acquisition professionals are interested in non-FAR based contracts, but their knowledge generally ends at the awareness level. The lack of training has created an environment of self-educated non-FAR personnel as there is no formal source at this time. This education would be focused on understanding what each non-FAR acquisition's intended purpose is. Like any tool in a contracting officer's tool belt, it is critical to know when non-FAR contracting may be appropriate. Education should be modular based on the COs current assignment. Different COs will require different levels of education.

Second, the Air Force needs to develop a training program for non-FAR based acquisitions. This training will not be for every single contracting professional, but there needs to be the option of specialized training for those doing non-FAR based acquisitions. One solution would be to develop a Defense Acquisition University course in which non-FAR focused offices or offices doing non-FAR for the first time can go to for training. This training

needs to be widely available and easy to access so that offices interested in performing a non-FAR based contracting can be trained and execute in a reasonable time. Question 5 of our research asked if mission partners were interested in non-FAR which we received 1 agree from an operational squadron. Training should be available to the personnel of this operational squadron if they discover the need for non-FAR contracting. Additionally, this training should be focused for contracting officers, but it is imperative that the entire acquisition team is trained properly. There should also be training for finance personnel, requirement owners, and the legal personnel. Our research found that around 50% of acquisition offices believe their FM and mission partners have the knowledge to do non-FAR contracting. Furthermore only 40% of non-FAR offices are currently receiving training on non-FAR contracting practices.

The next recommendation is for leadership to continue to emphasize teamwork between the stakeholders of a non-FAR based acquisition. The data shown from question 9 denotes an overwhelming majority of leaders pushing a narrative of collaboration and teamwork. Complex contracts and agreements need every person involved to be working towards the same goal. It is much more challenging if the financial office, the legal office, and the contracting office are all working against each other. In our interviews the most noted need by all non-FAR acquisition members was the importance of an experience and collaborative team. As these types of acquisitions become more popular to combat the US' strategic competition speed of acquisition, it is going to be essential that leaders continue to promote this atmosphere of cooperation. Having a team that is working together may be one of the most important environmental factors in a non-FAR based acquisition office because the team may be uneducated and untrained. If the acquisition team is willing to work together in a cohesive unit, however, they can still accomplish the mission. A strong team can push through any obstacles provided they work together and help each other get the knowledge they need to succeed.

The final suggestion is to increase the number of locations and personnel working on non-FAR based acquisitions. Non-FAR acquisitions have been identified as one way to increase acquisition agility by bringing new technologies into the DOD fold. Non-FAR does not accomplish this by always being faster than other types of contracting, but rather it is able to tap into non-traditional contractors by breaking down regulation. Countries like China do

not have to worry about intellectual property rights and can get around many laws and regulations that the United States has to follow. As the threat of strategic competitors like China continue to grow the U.S. needs to respond by allocating more resources to non-FAR based acquisitions. The U.S. cannot expect to succeed and gain a competitive advantage if they are not willing to have more personnel and offices working on these specialized acquisitions. If they refuse to expand and non-FAR acquisitions continue to explode in obligation rates, the current workforce capable of non-FAR based acquisitions will quickly become overwhelmed. The training from recommendation two would make this possible without the need for more dedicated offices. Agreements officers could be trained across the country and could execute an OT, PIA, TIA, etc., from anywhere in the country. If the Air Force dedicates more personnel to this increasing workload, it will only further the acquisition effectiveness to accomplish the NDS key issues with acquisitions.

C. AREAS OF FUTURE RESEARCH

The non-FAR based acquisition world is relatively under researched due to its novelty and perceived youth. One suggestion for a future study would be to see if OTs or other non-FAR based acquisitions actually do save the government time and money. This could be done by competing the same requirement using traditional FAR based contracting and non-FAR based contracting to study the cost, schedule and performance metrics. This would have to be a large study, but it could play a key part in determining the appropriate acquisition strategy of many R&D contracts in the future.

Another area of future study is to expand on this research to determine exactly what type of training is necessary for the successful integration of non-FAR based contracts into new contracting offices. This training could range in delivery method, timing within the personnel's career, and a multitude of other factors. It is important to begin offering non-FAR based training, but if the training is not given in an effective and retainable matter than the training loses its value.

Finally, another area of future research would be to work directly with the members of the OT consortiums. Our research found very little information on the consortiums. Contractors pay to gain entrance into the consortium. A pay to play type of agreement. Non-

FAR seeks to interest from smaller non-traditional contractors. Consortia could dissuade the very contractors non-FAR is meant for. It would be interesting to talk to the contractors in these consortia to understand what kind of work they have coming in and what the consortium environment is like.

D. CONCLUSION

DOD strength today wanes compared to the DOD's strength just 24 years ago. Initiatives like China 2025 and China 2040 further threaten the lead of the United States. Near peer countries like China are purchasing IP in the tens of billions of dollars, all the while stealing hundreds of billions of dollars in IP, "Chinese IP theft has cost the United States US\$225 billion to US\$600 billion a year" (Huang & Smith, 2019). One way to combat the threat of strategic competitors is to tap into non-traditional contractors. In order for China to tap into their commercial market they created rapid response teams that work very similar to DIU. One thing the U.S. has that China does not have is the Silicon Valley located in California. The United States has a technological ecosystem that is absolutely booming with zero influence from the Government. DIU seeks to tap into the self-sustaining tech force to gain access to incredible non-traditional contractors. Steinberg (2020) said, "Technological innovation is no longer led by military funding, and today's private technology companies have largely outpaced the capabilities of the traditional defense industrial base." Non-FAR appeals to non-traditional vendors because it reduces regulation and relaxes IP laws and cost accounting standards. While this alters the laws and regulations it does not necessarily mean a faster acquisition given the more complicated negotiation process.

Non-FAR based contracts are being utilized more frequently and will continue to grow in usage as the United States' strategic competition persists to grow in strength. This research aimed to answer the primary and secondary research questions of, "Are there environmental factors present in organizations utilizing non-FAR-based acquisitions that are not present in organizations that do not utilize non-FAR-based acquisition strategies?" and "What are the most prevalent environmental factors identified in organizations that practice non-FAR-based acquisitions?" With these questions in mind, several interviews were

conducted with non-FAR acquisition professionals to come up with 10 focused questions to help identify those environmental factors.

The 10 questions were utilized to collect data by interviewing acquisition personnel from operational, enterprise, systems and non-FAR offices and organizations. The main conclusion taken from the data involves training for non-FAR based contracts. There were zero operational bases polled that said training was available to them. Our research found less than half of the offices that are doing non-FAR based contracting have training offered. In addition, when it comes to non-FAR laws and regulations, less than half of acquisition offices trust their Finance and Requirement Owner counterparts. That lack of training is a major concern for the future of Air Force non-FAR based contracts. Additionally, there needs to be a way to educate personnel around the contracting career field on the different forms of non-FAR based contracts beyond OTs. Education and training go hand in hand but serve different purposes in helping accomplish the mission. While developing the environmental factor questions it was said time and time again the importance of teamwork within the acquisition team for non-Far based acquisition. The 9th interview question sought to discover if teamwork is emphasized throughout the acquisition community. Question 9 was met with an overwhelming positive response confirming that teamwork is emphasized not only in non-FAR offices, but also throughout the Air Force Acquisition workforce. Finally, this research identified the desire for non-FAR based contracts throughout the Airforce. With the exception of operational squadrons there was a majority of “agree” responses both within contracting organizations and outside organizations

Non-FAR based contracts are becoming increasingly popular and the need for contracting speed and agility is constantly being stressed by top leadership. It is imperative that future agreements officers (AO) understand the environmental factors that will positively affect a non-FAR based contract or agreement. If AOs are given proper training and knowledgeable acquisition team that can work together the NDS emphasis on agility and tackling the overflowing backlog of acquisitions will come to fruition.

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF REFERENCES

- Air Force Technology Transfer and Transition. (2021, September 21). *T3 Mechanisms*.
<https://aaf.dau.edu/aaf/contracting-cone/>
- Athreye, S. (2020). China's intellectual property regime. *Journal of International Business Policy*, 3(1), 58–59. <https://link.springer.com/article/10.1057/s42214-020-00048-8>
- Bhandari, P. (2020, October 12). *Designing and analyzing Likert scales*. Scribbr.
<https://www.scribbr.com/methodology/likert-scale>
- Blair, E., & Blair, J. (2020). *Sampling, probabilistic and statistical*. SAGE Research Methods. <http://dx.doi.org/9781529747911>
- Bressler, A. (2018). Bridging the gap: Improving DOD-backed innovation programs to enhance the adoption of innovative technology throughout the armed services. In *Proceedings of the Fifteenth Annual Acquisition Research Symposium Wednesday Sessions*, 15, 387–403. <https://dair.nps.edu/bitstream/123456789/1568/1/SYM-AM-18-056.pdf>
- Bruyère, E. (2021). Rapid innovation with Chinese characteristics: National defense science and technology innovation rapid response teams and the military-civil fusion innovation ecosystem (Report No. SYM-AM-21-042). Acquisition Research Symposium. <https://dair.nps.edu/handle/123456789/4349>
- Carillo, J. S., & Gromb, D. (2006). Cultural inertia and uniformity in organizations. *The Journal of Law, Economics, and Organization*, 23(3), 743–771. <https://academic-oup-com.libproxy.nps.edu/jleo/article/23/3/743/892900>
- Defense Acquisition University. (2021, September 21). *Contracting Cone*.
<https://aaf.dau.edu/aaf/contracting-cone/>
- Department of Defense. (2018). *Summary of the 2018 national defense strategy*.
<https://DOD.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>
- DiNapoli, T. J. (2019). *DOD's use of other transactions for prototype projects has increased* (GAO-20-84). Government Accountability Office.
<https://www.gao.gov/products/gao-20-84>
- Dunn, R. L. (2017, May 5). Other transactions contracts: Poorly understood, little used. *National Defense Magazine*. <https://www.nationaldefensemagazine.org/articles/2017/5/15/other-transactions-contracts-poorly-understood-little-used>

- Gagnon, K., & Van Remmen, P. (2018). *Hacking the defense innovation ecosystem-enterprise: A comparative analysis* [Master's thesis, Naval Postgraduate School]. <https://apps.dtic.mil/sti/pdfs/AD1069574.pdf>
- Huang, Y., & Smith, J. (2019, October 26). China's record on intellectual property rights is getting better and better. *Foreign Policy*. <https://carnegieendowment.org/2019/10/16/china-s-record-on-intellectual-property-rights-is-getting-better-and-better-pub-80098>
- Mayer, L. A., Arena, M.V., Camm, F., Wong, J. P., Lesnick, G., Soliman, S., Fernandez, E., Carter, P., & Lee, G. T. (2019). *Prototyping using other transactions*. Rand Corporation. https://www.rand.org/pubs/research_reports/RR4417.html
- McBride, C. (2019). Wesley: Russia offers “pacing threat” for army modernization effort. *Inside the Army*, 28(44), 4–5.
- McCormick, R. (2021). *Trends in Department of Defense other transaction authority usage: A preliminary look* (Report No. SYM-AM-21-041). Acquisition Research Symposium. <https://dair.nps.edu/handle/123456789/4348>
- Miller, J. (2019). OTAs aren't the only answer to satisfy DOD's need for procurement speed. *Federal News Network*. 1–4. <https://federalnewsnetwork.com/acquisition-policy/2019/03/otas-arent-the-only-answer-to-satisfy-dods-need-for-procurement-speed/>
- MITRE. (2021, September 27). *Other Transaction Authority (OTA)*. <https://aida.mitre.org/ota/>
- Office of the Under Secretary of Defense for Acquisition and Sustainment. (2018, November). *Other Transactions Guide*. [https://www.dau.edu/guidebooks/Shared%20Documents/Other%20Transactions%20\(OT\)%20Guide.pdf](https://www.dau.edu/guidebooks/Shared%20Documents/Other%20Transactions%20(OT)%20Guide.pdf)
- Office of the Under Secretary of Defense. (2020). *Military and security developments involving the People's Republic of China*. <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>
- Papageorgiadis, N., & McDonald, F. (2019) Defining and measuring the institutional context of national intellectual property systems in a post-TRIPS world. *Journal of International Management* 25(1), 3–18ProQuest
- Peña, V., Mandelbaum, J., Babou, T., & Cavanaugh, C. (2021). *Opportunities to advance Department of Defense technology transfer with partnership intermediary agreements*. Under Secretary of Defense for Research and Engineering. https://www.aft3.af.mil/Portals/74/Pages/Publications/Opportunities-to-Advance-DOD-T2-Partnership-Intermediary-Agreements-Report_IDA_DistroA.pdf?ver=jt6btUXvGqHM6HKiB5nhUA%3d%3d

- Procurement For Experimental Purposes, 10 U.S.C. § 2373 (2021).
- Research Projects: Transactions Other Than Contracts and Grants, 10 U.S.C. § 2371 (2021).
- Steinberg, D. (2020). Leveraging the department of defense's other transaction authority to foster a twenty-first century acquisition ecosystem. *Public Contract Law Journal; Chicago*, 49(3), 537–565. ProQuest
- Technology Investment Agreement, 32 C.F.R § 37 (2011).
- U.S. Department of Defense. (2020, August 27). *DIU making transformative impact five years in*. <https://www.defense.gov/Explore/News/Article/Article/2327021/diu-making-transformative-impact-five-years-in/>
- Use of Partnership Intermediaries, 15 U.S.C. § 3715 (2012)
- United States Naval Research Laboratory. (2021, September 21). *Cooperative research and development agreement (CRADA)*. <https://www.nrl.navy.mil/Doing-Business/Technology-Transfer/Cooperative-Research-and-Development-Agreement-CRADA/>
- Weinig, W. J. (2019). Other transaction authority: Saint or sinner for defense acquisition? *Defense Acquisition Research Journal: A Publication of the Defense Acquisition University*, 26(2), 106–127. ProQuest

THIS PAGE INTENTIONALLY LEFT BLANK

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
Ft. Belvoir, Virginia
2. Dudley Knox Library
Naval Postgraduate School
Monterey, California