NPS-CM-19-021

ACQUISITION RESEARCH PROGRAM
SPONSORED REPORT SERIES

Acquisition Strategy in a Non-Competitive Environment: A Resource Dependency and Power-Dependent Relations Perspective

December 2018

Capt. Daniel Adame, USAF
Capt. Matthew R. Markling, USAF

Thesis Advisors: Latika Hartmann, Associate Professor
Bryan J. Hudgens, Lecturer

Graduate School of Business & Public Policy

Naval Postgraduate School

Approved for public release; distribution is unlimited.

Prepared for the Naval Postgraduate School, Monterey, CA 93943.

ACQUISITION RESEARCH PROGRAM
GRADUATE SCHOOL OF BUSINESS & PUBLIC POLICY
NAVAL POSTGRADUATE SCHOOL

The research presented in this report was supported by the Acquisition Research Program of the Graduate School of Business & Public Policy at the Naval Postgraduate School.

To request defense acquisition research, to become a research sponsor, or to print additional copies of reports, please contact any of the staff listed on the Acquisition Research Program website (www.acquisitionresearch.net).

Acquisition Research Program
Graduate School of Business & Public Policy
Naval Postgraduate School

ABSTRACT

In this project, we surveyed private industry supply chain managers and contracting professionals from the Air Force Space and Missile Systems Center. The purpose was to ascertain knowledge and application of resource dependency and power-dependent relations theories within their respective organizations. A better understanding of the theories would allow organizations to position themselves strategically to secure supply bases for future requirements and to leverage strengths and minimize organizational weaknesses during negotiations. Despite survey respondents not knowing the terminology utilized within the theories tested, most respondents were capable of selecting the proper courses of actions, given either a resource dependency or power-dependent relations scenario-based question. This implies the organizations surveyed provide members some amount of training on the theoretical principles and can apply that knowledge to practical situations. Despite a shared theoretical knowledge between the public and private sectors, private sector respondents stated that they were more likely to utilize these principles and are postured to have a greater negotiating position. Public sector organizations who neglect these principles place themselves in a disadvantageous position when negotiating with or relying upon contracted support, especially for systems acquisitions.

THIS PAGE INTENTIONALLY LEFT BLANK

ABOUT THE AUTHORS

Capt. Daniel Adame is a Contracting Officer in the United States Air Force. He is currently a student at the Naval Postgraduate School (NPS) within the Graduate School of Business and Public Policy. He is studying the use of enterprise sourcing and category management and its applicability to Air Force contract management. He is a prior-enlisted Airman and has served a total of 17 years in multiple career fields. He has been stationed at Hurlburt Field, FL, Holloman AFB, NM, Lackland AFB, TX, and Los Angeles AFB, CA. Capt. Adame is Program Manager Level I, Air Force Instructor Level III, Quality Assurance Program Coordinator, and Acquisition Professional Development Program Level II certified. He has held various contingency, operational, and systems contracting warrants to include an Unlimited Warrant for the United States Air Force. He has been the recipient of various accolades to include the Meritorious Service, Air Force Commendation, and Air Force Achievement medals.

Captain Matthew R. Markling is a student at the Naval Postgraduate School (NPS), Monterey California where he is enrolled in the Graduate School of Business and Public Policy. He is studying the use of enterprise sourcing and category management and its applicability to the contracting career field, Department of Defense, and the United States Air Force. Captain Markling was commissioned in May 2011 upon graduation from the United States Air Force Academy. He has served as a warranted contracting officer for both operational and system level procurement offices. Prior to his enrollment at NPS, he served as a Contracting Process Staff Officer for the Contracting Directorate at Headquarters Air Force Material Command (AFMC) Process Management Division, Wright-Patterson Air Force Base (AFB) Ohio.

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGMENTS

We would like to thank Professor Latika Hartmann and Professor Bryan Hudgens from the Graduate School of Business and Public Policy of the Naval Postgraduate School. Without their guidance and knowledge, this project would never have been successful. We also want to acknowledge the support of our families:

I want to express my gratitude to my wife, Megan, and daughter, Madalyn for the endless love and support you provided throughout this endeavor. Without your support, I would never be successful at NPS or in this military career. I love you both so much.

—Capt Markling

I want like to thank my wife, Vanessa, and children, Ari, Dani, and Cari. Your love and support have provided me with the ability to achieve many goals, and my life would not be what it is today without you. I love you all until forever.

—Capt Adame

THIS PAGE INTENTIONALLY LEFT BLANK

NPS-CM-19-021

ACQUISITION RESEARCH PROGRAM
SPONSORED REPORT SERIES

Acquisition Strategy in a Non-Competitive Environment: A Resource Dependency and Power-Dependent Relations Perspective

December 2018

Capt. Daniel Adame, USAF
Capt. Matthew R. Markling, USAF

Thesis Advisors: Latika Hartmann, Associate Professor
Bryan J. Hudgens, Lecturer

Graduate School of Business & Public Policy

Naval Postgraduate School

Disclaimer: The views represented in this report are those of the author and do not reflect the official policy position of the Navy, the Department of Defense, or the federal government.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF FIGURES

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF TABLES

LIST OF ACRONYMS AND ABBREVIATIONS

AFB	air force base
CAIP	Critical Assessment Identification Process
CJCS	Chairman of the Joint Chiefs of Staff
CGO	company grade officer
DAWIA	Defense Acquisition Workforce Improvement Act
DCAA	Defense Contract Audit Agency
DoD	Department of Defense
DoDI	Department of Defense Instruction
DoDAAC	Department of Defense Activity Address Code
FAR	Federal Acquisition Regulation
FASA	Federal Acquisition Streamlining Act
FPDS-NG	Federal Procurement Data System – Next Generation
FY	fiscal year
GS	general schedule
GAO	Government Accountability Office
JCIDS	Joint Capabilities Integration and Development System
JROC	Joint Requirements Oversight Council
LCSP	lifecycle sustainment plan
M&As	mergers and acquisitions
MDA	milestone decision authority
NDAA	National Defense Authorization Act
PDT	power dependent relations theory
PM	program manager
R&D	research and development
RDT	resource dependency theory
SAP	simplified acquisition procedures
USAF	United States Air Force
VA	Veterans Administration

THIS PAGE INTENTIONALLY LEFT BLANK

I. INTRODUCTION

> There are no secrets to success. It is the result of preparation, hard work, and learning from failure.
>
> —Former U.S. Secretary of State Colin Powell
> (Owen, 2002, p. 164)

The United States Air Force (USAF) is one of the most formidable fighting forces on the face of the earth, and its strength is tied to the success of private industry who supplies the supreme capability the Air Force depends on. Similarly, many private companies derive their revenue from Department of Defense (DoD) contracts. Although some products and services rendered for the DoD may be unique to the military, the acquisition relationship between buyer and seller is very similar to the relationship seen in private industry when two firms interact with each other. With this similarly in mind, we wanted to study the private sector and ascertain how some firms deal with acquisitions with limited or no competition as compared to the public sector. We hope to glean efficiencies the private sector utilizes and provide avenues for the public sector to emulate when dealing with limited or non-competitive acquisitions. If the government were to capitalize on the understanding and efficiencies established through private industry best practices, the government could maximize their buying power and expand on the effective ability of AF category management in relationship to the local, regional, and AF contracting organizations across the globe. To answer our question, we reached out to a variety of private industries and to a major acquisition center for the USAF to provide a comparative analysis of actions and strategies the public and private organizations utilize during limited or non-competitive acquisition. To understand the potential impact of capitalizing on efficiencies applied by the private industry, we first needed to understand the potential impact of our study, and for that, we needed to identify the general landscape of competition within government acquisitions.

Non-competitive acquisitions are increasing within the DoD. For example, a March 2017 Government Accountability Office (GAO) study showed that between 2011 and 2015, the percentage of competed contracts decreased from approximately 58% to 55%

(Woods, 2017). This stemmed from the classification of 45% of defense contracts being categorized as non-competitive. Secondly, the Air Force's limited competition has produced an increasingly negative trend, based on data collected from the Federal Procurement Data System-Next Generation (FPDS-NG), for Air Force obligations on non-competed actions. This trend highlights the need for increased training and understanding of the concepts and theories related to resource dependence (Pfeffer & Salancik, 1978) and power asymmetry (Emerson, 1962). It is vital that acquisition professionals not only understand these theories, but also develop dynamic business strategies by implementing the concepts to enable the government to capitalize on situations where there are minimal to no options for fulfilling warfighter needs.

In 2016, the DoD compiled a report highlighting the risks associated with single source suppliers as a response to a mandate from the Committee on Armed Services, House of Representatives (also known as the House Armed Services Committee) for the National Defense Authorization Act (NDAA) for fiscal year (FY) 2016 (H.R. 1735, 2015). The DoD acknowledged the risks related to a lack of supply chain diversification for specialized parts. The DoD also noted the difficulties associated with finding or establishing a supply base willing and capable of supporting low profit and volume production for many specialized parts (Merritt, 2017). The problem increases based on the materials and components necessary to support an aging infrastructure of weapon systems (H.R. 1735, 2015). In a September 2017 GAO study, it was determined that the DoD has a vast network of suppliers for components and materials, some provided by single source contractors (Merritt, 2017). The inability to supply any of the critical materials or components that support major systems could result in shutting down warfighter capability (Merritt, 2017).

The DoD recognizes the potential risk to its supply chain presented by their use of single sources of supply, therefore the DoD created policy designed to identify and manage this risk. DoD Instruction 4140.01 (Department of Defense [DoD], 2018) states that "potential disruptions in the DoD supply chain shall be identified, monitored, and assessed to mitigate the risk to the supply chain operations (DoD, 2018, pg2)." The instruction further states that "supply chain risk strategies shall be employed to address potential supply chain disruptions inside and outside of DoD supply chains" (DoD, 2018, pg10). This advocates for the application of market intelligence in fulfilling the DoD's National

Military Strategy. The Critical Asset Identification Process (CAIP), created by the DoD, was established to minimize and mitigate the risks. (Merritt, 2017). However, program officials were not aware of the DoD's 2016 report highlighting defense supply chain problems therefore they were not taking any steps to rectify the problem. According to guidance provided by the DoD, program managers (PMs) are responsible for risks associated with acquisition planning and execution. Part of that analysis includes that the DoD "identify and mitigate industrial capability risks, such as single points of failure, and support resilience or critical defense industrial base capabilities" (DoD, 2017). PMs are required to identify risks, including risks from limited competition. The implication is that the government is postured to capitalize on market intelligence, but we believe the problem is related to a lack of utilizing the concepts associated with the theories in question. As a result, program managers and contracting personnel lack a clearly defined requirement to proactively manage any of the issues related to their supply chains (Merritt, 2017).

Moreover, program offices relied on prime contractors to identify single sources of supply risks, and it was found in some instances that the program offices had little information to manage those risks because program offices lack mechanisms to obtain complete information from the contractors. Consequently, acquisition teams may not be aware of the risks early enough to take pre-emptive actions alleviate those risks. For example, there are situations where a known risk was not communicated to inform the government of an impending risks. The acquisition teams stated there was not a method in place to ensure the government was fully informed of all risks related to sub-tier contractors (Merritt, 2017)

The September 2017 GAO report concluded the DoD's reliance on high risk supply chains that support major acquisitions increase the potential for grave problems. According to the GAO, in order to identify potential problems within the supply chain, PMs must have a thorough understanding of the markets in which the programs are involved. The government relies on the contractors to provide the information necessary for its own analysis. Yet there is no system in place to ensure that information is accurate and complete. Based on the 2017 GAO findings, it is apparent that the DoD does not have a firm understanding of the impact a limited or single source of supply has on the supply chain. Moreover, the dependency the DoD has on these contractors continues to grow, and

the suppliers' power is magnified when the government relies on them to provide data on risks to the supply chain (Merritt, 2017). The DoD has placed itself in a significantly dependent situation where the power to influence is in the hands of the contractors for single source supplies.

Contracting professionals' ability to determine fair and reasonable prices on negotiated contracts for single and sole sources produces additional constraints on staffing and resources. In order for PMs to fulfill government requirements, they require the assistance of the contracting team members to achieve success. Contracting personnel are trained to provide business advice to the acquisition teams who fulfill war fighter capabilities. The Federal Acquisition Regulation (FAR; 2018), Part 15: Contracting by Negotiation, establishes the requirement for the DoD to determine prices as fair and reasonable. In short, the idea of fairness and reasonableness is based on the concept of what a prudent business person would pay for an item in a competitive market. Buyers within private industry must establish reasonableness for their contracts, and to maintain continuity, it would be practical for DoD officials to mimic those standards where it is possible. However, due to the amount of scrutiny federal regulation places on the government, not all these practices may be applicable.

The Federal Acquisition Streamlining Act (FASA) of 1994 made the submission of cost or pricing data the least preferred method of determining price reasonableness. FAR Part 15 lists seven techniques the government can use to determine fairness and reasonableness. For sole source acquisitions, the competitive market does not exist. Contracting officers must establish and document how they determined the price to be fair and reasonable. FAR Part 31, Contract Cost Principles and Procedures (FAR; 2018), provides guidance for determining cost reasonableness, and contracting officers must apply this guidance when making their determination. For acquisition professionals to be successful stewards of taxpayer dollars and simultaneously provide the best value for the warfighter, they must have a strong knowledge of strategy, resource dependence, and power asymmetry, and the ability to determine prices to be fair and reasonable.

U.S. Air Force contracting officers have procured numerous sole source requirements. These single source contractors for sustainment or replacement parts place

the government in precarious positions for future purchases and negotiations (Merritt, 2017). Over the course of sequestration, from 2013–2015, the defense industry market of first-tier prime vendors declined by 20%. Likewise, contract obligations fell 23% during the same time frame (Aerospace Industries Association, 2017). In these situations, Air Force contracting officers are obligated to engage in negotiations with limited options to alleviate the leverage the contractor has over the Air Force. It is imperative for the contracting officer to understand the options that are available and create a foundation for all acquisition professionals to be able to contend with the constraints they face. Likewise, it is just as essential to educate and train acquisition professionals on how to avoid such situations for future acquisitions. This should include unified training with PMs and engineers for requirements development. If the acquisition community shares an understanding of how to develop and plan for a requirement, high-risk situations can either be avoided or addressed as early as possible within the acquisition process. The scenarios that present a combination of products and/or systems that only a limited or single source can provide require attention.

This research focuses on the interaction between the public and private industry and their understanding of resource and power dependence, and their ability to utilize the concepts within their respective organizations. Before our extensive research, we assumed that the private industry implements the information better and more efficiently than the public sector. Likewise, we believed the government's method for ensuring theory utilization is captured within Joint Capabilities Integration and Development System (JCIDS) process. The aggregate date we obtained shows that the public and private industry do not know the terms of resource and power dependence. However, based on surveys and interviews conducted as part of our research, we learned that the private industries also utilize the concepts associated with resource and power dependence because they are directly incentivized to capture the benefits. We found that the public sector requires motivation to fully implement the theories discussed in order to avoid and/or alleviate constrained environments. This provides a way for the government to maximize its buying power and influence the economic markets in which they operate. The research shows an increase in the percentage of dollars spent on limited competition. This indicates the likelihood of a widespread problem possibly linked to the non-utilization of resource and

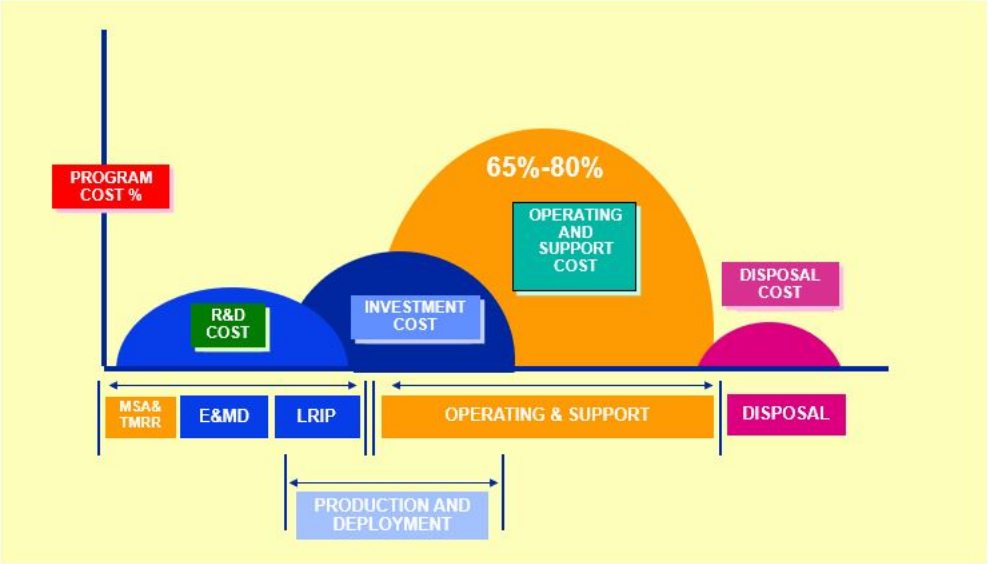
power dependence concepts. Our survey showed a qualitative analysis that appears to show the private sector is utilizing the theories' concepts better.

II. BACKGROUND

The purpose of our study is to establish a baseline understanding of how well contracting personnel in the Air Force understand the theories of power and resource dependence and how well the principles of these theories are implemented. Training for contracting personnel is heavily reliant upon the Defense Acquisition Workforce Improvement Act (DAWIA) of 1990. The act required the DoD to establish education and training programs for the civilian and military acquisition workforce (Defense Acquisition University [DAU], 2018). In addition, the "primary objective of defense acquisitions is to acquire quality products that satisfy user needs with measurable improvements to mission capability and operational support in a timely manner and at a fair and reasonable price" (OUSD[AT&L], 2007). This directive is applicable to all acquisition programs and is utilized by program managers across the Air Force enterprise. "In FY2017, the DoD obligated more dollars on federal contracts ($320 billion) than all other government agencies combined" (Schwartz, Sargent, & Mann, 2018, pg 2). Likewise, the percentage of dollars in relation to the number of non-competed actions is increasing (see Table 1). More importantly, "from FY2000 to FY2017, DoD contract obligations increased from $189 billion to $320 billion" (Schwartz, et al, 2018, pg 2). The amount of taxpayer dollars spent on government contracts indicates that individuals in the contracting career field should be proficient in their craft, and these individuals should be certified and qualified in the procurement of services, goods, and research and development (R&D). Based on the increasingly negative trend for non-competitive contracts, a firm understanding of power and resource dependence is vital to ensuring the government continues to receive the best value for the amount of taxpayer dollars that are spent.

Total life-cycle costs on major systems are broken into 5 phases: Material Solutions Analysis, Technology Maturation & Risk Reduction, Engineering & Manufacturing Development, Procurement & Deployment, and Operations & Support. Integrated into these categories are major approvals titled Milestones A, B, and C. Each of these milestones are essential for a program to progress and ultimately receive funding. Major programs range in value, but the dominant portion of dollars is used during the Operations & Support phase (see Figure 1; Mortlock, 2017).

Figure 1. Life-Cycle Costs on Major Systems
Source: Mortlock (2017).



Acquisition refers typically to "pre-operations and support," while operations and support are the "sustainment" portion of a requirement. The relevance is that acquisition professionals should consider, and address sustainment within a Life-Cycle Sustainment Plan (LCSP). This plan is used to properly apply sustainment capabilities of the established requirement appropriately at a strategic level. This document is approved by the Milestone Decision Authority (MDA), who is the designated official approving an acquisition to the next phase of development. The LCSP is the guidance document and structure that helps contracting officers formulate, implement, and execute the sustainment strategy. The LCSP should include the method(s) and means that are required to develop and integrate sustainment into a system's design. DoD Instruction 5000.02, *Operation of the Defense Acquisition System* (Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics [OUSD(AT&L)], 2017), provides PMs with guidance on what to include and who to coordinate with on the creation of this document. However, this guide does not discuss how the program will mitigate resource dependencies. This is a very specific detail that is essential to how the DoD can diversify the contractors it engages. In the next section, we highlight the importance of resource dependence and power asymmetry as it relates to the acquisition process.

A large portion of the Air Force's annual obligations is awarded on a non-competitive basis. This annual spend is in part based upon the nature of the government's acquisition framework and the limited commercial entities capable of providing major weapon systems to the Air Force. The nature of single or sole source acquisitions places contractual risks onto both the contractor and the government based upon the dependency of each party on the business of the other as well as the restriction of a resource base due to limited competition within the defense industry market.

THIS PAGE INTENTIONALLY LEFT BLANK

III. AIR FORCE SPEND DEMOGRAPHICS

To understand which AF offices have the greatest exposure to non-competitive contracts, we studied Air Force spend data from the Federal Procurement Data System-Next Generation (FPDS-NG) from FY2007 to FY2017. The dataset encapsulated all contractual actions and obligations for the Air Force over the 11 FYs. We performed data sanitization by limiting the dataset utilizing the FPDS-NG data dictionary and based upon extent competed and reasons not competed. We limited the extent competed data element exclusively to acquisitions that were not available for competition, not competed, and not competed under simplified acquisition procedures (SAP). These selections represent those areas in which contracting officers actively chose not to compete an acquisition. Utilizing the reason not competed data element, we further limited the data by selecting those reasons that exceeded the micro-purchase threshold to delineate the number and frequency of reasons utilized to limit competition. Table 1 illustrates all reasons utilized in the analysis.

Table 1. Reason Codes. Adapted from FPDS (2018).

Unique Source	FAR 6.302-1(b)(1)
Follow-On Contract	FAR 6.302-1(a)(2)(ii/iii)
Unsolicited Research Proposal	FAR 6.302-1(a)(2)(i)
Patent or Data Rights	FAR 6.302-1(b)(2)
Utilities	FAR 6.302-1(b)(3)
Standardization	FAR 6.302-1(b)(4)
Only One Source-Other	FAR 6.302-1 other
Urgency	FAR 6.302-2
Mobilization, Essential R&D	FAR 6.302-3
International Agreement	FAR 6.302-4
Authorized by Statute	FAR 6.302-5(a)(2)(i)
Authorized Resale	FAR 6.302-5(a)(2)(ii)
National Security	FAR 6.302-6
Public Interest	FAR 6.302-7
SAP Non-Competition	FAR 13
Brand Name Description	FAR 6.302-1(c)

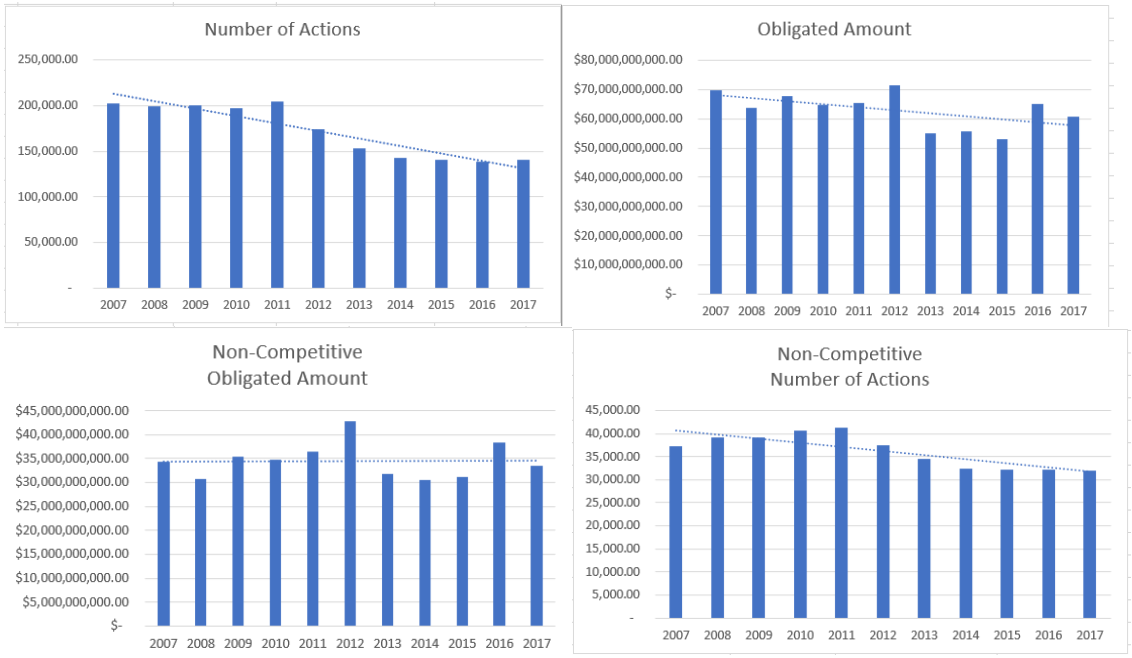
We utilized a pivot table to organize the sanitized dataset and analyze the information to discern trends across the Air Force spend. This analysis showed that over the time in question, while numbers varied each year, both obligated dollars and number of actions for total actions and non-competitive actions ultimately decreased. (See Table 2.)

Table 2. Contraction Obligations and Actions by Fiscal Year. Adapted from FPDS (2018).

Annual Spend Data	All Contracing Action		Non-Competitive Contracting Actions	
Fiscal Year	Obligated Amount	Number of Actions	Obligated Amount	Number of Actions
2007	$ 69,880,899,665.83	201,997.00	$ 34,275,978,077.25	37,194.00
2008	$ 63,649,200,036.66	199,093.00	$ 30,648,990,278.68	39,070.00
2009	$ 67,810,299,973.23	200,604.00	$ 35,346,234,188.11	39,135.00
2010	$ 64,902,142,550.04	197,523.00	$ 34,818,819,707.40	40,629.00
2011	$ 65,471,486,821.89	203,971.00	$ 36,551,805,079.81	41,239.00
2012	$ 71,492,011,477.67	174,183.00	$ 42,793,511,505.87	37,567.00
2013	$ 55,166,216,868.07	152,743.00	$ 31,906,228,523.82	34,457.00
2014	$ 55,808,164,560.81	142,917.00	$ 30,611,477,539.07	32,367.00
2015	$ 52,990,021,312.79	140,529.00	$ 31,178,511,514.87	32,135.00
2016	$ 65,072,273,193.28	138,803.00	$ 38,473,045,308.92	32,191.00
2017	$ 60,830,019,435.55	140,745.00	$ 33,481,504,404.62	32,051.00
Total	$ 693,072,735,895.82	1,893,108.00	$ 380,086,106,128.42	398,035.00

To illustrate the trends within the dataset, the data was translated into a bar graph, and utilizing the functionality of Excel, we added a trend line to show the linear decrease for actions and dollars spent over time (see Table 3).

Table 3. Total Contracting Actions and Obligated Dollars. Adapted from FPDS (2018).



Although the total amount of actions and dollars is decreasing, it is important to identify the composition of this spend and determine if over time the Air Force is utilizing more or less competitive actions and dollars. To accomplish this, we divided the amount of non-competitive actions by total actions and the non-competitive dollars by total dollars for each individual year and illustrated the percentages in Table 4.

Table 4. Percent Composition of Obligated Dollars and Contracting Actions. Adapted from FPDS (2018).

Fiscal Year	Non-Competitive/Total Percentage Dollars	Non-Competitive/Total Percentage Actions
2007	49.0%	18.4%
2008	48.2%	19.6%
2009	52.1%	19.5%
2010	53.6%	20.6%
2011	55.8%	20.2%
2012	59.9%	21.6%
2013	57.8%	22.6%
2014	54.9%	22.6%
2015	58.8%	22.9%
2016	59.1%	23.2%
2017	55.0%	22.8%

This table illustrates that over time, the non-competitive portion of both actions and dollars has grown. This is a negative trend for the Air Force spend, as it would be more advantageous to leverage the advantages of market competition when sourcing items. However, this trend places additional emphasis on the role of the acquisition team and its understanding of the power-dependent relationships and resource dependency trends created or expanded by the increased use of non-competitive contractual actions. The spend analysis also provided a breakout of the top 10 contracting organizations, designated in Table 5 by their military office symbols, non-competitive contractual obligation dollars, and contracting actions, respectively.

Table 5. Total Obligated Dollars and Contracting Actions by Contracting Office ID. Adapted from FPDS (2018).

	Contracting Office ID	Obligation Total By DoDAAC	Type of Office	Contracting Office ID	Actions Total By DoDAAC	Type of Office
1)	FA8620 (AFLCMC/WI)	$ 47,104,060,155.50	Systems	FA2823 (AFTC/PZIO)	7,320	Operational
2)	FA8625 (AFLCMC/WL)	$ 30,513,904,746.23	Systems	FA3047 (802 CONS)	6,810	Operational
3)	FA8611 (AFLCMC/WWUK)	$ 30,308,464,244.99	Systems	FA8601 (AFLCMC/PZI)	6,577	Operational
4)	FA8614 (AFLCMC/WLMK)	$ 18,723,171,841.67	Systems	FA8201 (Hill/PZIO)	4,341	Operational
5)	FA8634 (AFLCMC/WWQK)	$ 18,557,707,300.18	Systems	FA4600 (55 CONS)	3,420	Operational
6)	FA8811 (SMC/LR PKK)	$ 15,907,489,824.96	Systems	FA8101 (Tinker/PZIO)	3,341	Operational
7)	FA8526 (AFLCMC/WLMK)	$ 13,694,963,611.19	Systems	FA2517 (21 CONS)	2,525	Operational
8)	FA8615 (AFLCMC/WWM)	$ 13,511,779,213.70	Systems	FA8650 (AFRL/RQK)	1,946	Systems
9)	FA8808 (SMC/MC PKJ)	$ 10,887,101,462.60	Systems	FA5613 (700 CONS)	860	Operational
10)	FA8650 (AFRL/RQK)	$ 842,438,542.47	Systems	FA8903 (772 ESS)	717	Operational

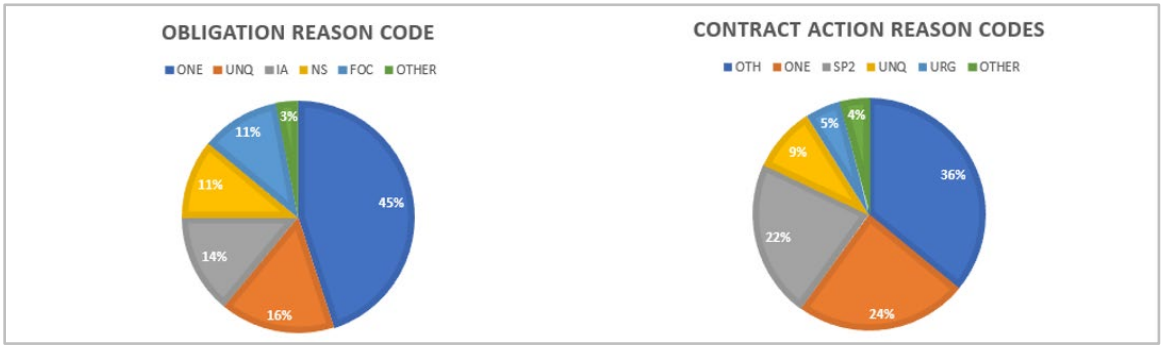
We analyzed this breakout to determine the types of offices responsible for most obligated dollars and actions and to determine whether there were similarities or differences between the sets of offices. The breakout showed that the 10 offices responsible for non-competitive contracts based upon obligated dollars are comprised of major weapons system contracting offices. This observation is understandable since the largest financial investments within the Air Force spend revolve around the life-cycle costs of the major weapon systems. A different composition of offices is present when looking at the top 10 offices responsible for non-competitive contracting actions. All but one office would be considered a more operational office, which derives its requirements at the base sustainment level rather than the life-cycle costs of major weapon systems. This observation is also understandable since operational offices tend to have a larger amount of contracting actions, but the value of those actions are typically substantially lower than those of weapons system sustainment or procurement offices.

Although the observations of the types of offices were not surprising, the percentage of total non-competitive actions and obligated dollars of the total Air Force spend was surprising. When looking at contracting actions, the top 10 offices only comprised approximately 2% of total Air Force actions and 10% of the Air Force's non-competitive actions. This would imply that the non-competitive actions are spread across much of the contracting community and that targeting individual offices for training on power-dependent relations or resource dependency would be very difficult due to the nature of this spend. When looking at obligated dollars, however, the top 10 offices

responsible for non-competitive obligations comprised 28% of the total Air Force obligations and 51% of the non-competitive obligated dollars. This implies that there is a relatively small concentration of offices that are responsible for a large portion of the total Air Force spend and over half of the non-competitive obligations for the Air Force. When looking at possible training opportunities, this concentration of offices should be leveraged to maximize training effectiveness and reduce training costs. For these reasons, we would suggest that any future training be focused on the top 10 offices comprising non-competitive obligations first, and then expanding training opportunities to offices comprising non-competitive actions only if training funds are in sufficient amount to justify the additional expense.

Additionally, we analyzed the reason codes that annotate the conditions that prevent or limit competition from happening. Figure 2 illustrates the reason codes for contracting obligations and contracting actions.

Figure 2. Percentage Composition of Reason Codes for Obligated Dollars and Actions



These reason codes are vital to understand because they indicate whether competition could be found within the market and they provide insight into the types of contractual relationship created. When looking at the reason codes for contracting actions, there are three primary reasons contracting officers limited competition: actions authorized by statute (OTH; FAR 6.302-2), actions where only one source is available (ONE; FAR 6.302-1 other), and non-competitive actions using simplified acquisition procedures (SP2; FAR 13).

When utilizing the OTH reason code (FAR 6.302-2), contracting officers are citing authority to limit competition based upon congressional direction through specific statutes. These laws are designed to stimulate certain sectors of the economy such as small businesses, veteran-owned businesses, and women-owned businesses. The limiting of the competition indicates that the justification is political in nature and does not preclude the market from providing a wide variety of firms and products to meet the government demand. When using the ONE reason code (FAR 6.302-1 other), contracting officers are indicating that there is only one company in the market capable of providing the product or service. This information is crucial when looking at the application of power-dependent relations and resource dependency since this reason code implies the supplier is monopolistic within the market. Finally, when using the SP2 reason code (FAR 13), contracting officers are again limiting competition based upon special acquisition procedures for what the government deems a simplified acquisition. This reason code is generic, and the authority within the FAR allows the contracting officer to limit competition based upon urgency of the need or if there is only one company uniquely capable of providing the good or service. Additionally, these authorities are limited to not exceeding $7 million for commercial items and not exceeding $250,000 for non-commercial items as prescribed by FAR 13.003. As when utilizing the ONE reason code (FAR 6.302-1 other), contracting officers must be aware of the relational ramification of entering a non-competitive action and understand the options available to handle a potentially imbalanced power relationship.

Similar to the reason codes for actions, the reason codes for obligated dollars are split between three primary reason codes. The first reason code is where only one source is available (ONE; FAR 6.302-1 other), the second reason code is where a single contractor is uniquely qualified to accomplish the requirement (UNQ; FAR 6.302(b)(1)), and the final reason code is in response to an international agreement (IA; FAR 6.302-4). Unlike the reason codes for contracting actions, reason code ONE (FAR 6.302-1 other) accounts for 45% of the total, with the next two highest accounting for only 40%, respectively. This is indicative of the type of market in which the top 10 contracting offices for obligations work. Remember that these offices' primary work is in the procurement and sustainment of major weapon systems for the Air Force. There is a limited number of defense

contractors capable of providing these services, so competition is often limited because either only one contractor within the market provides the good or service, or one provides a unique historical or technological advantage that would justify limiting competition (Aerospace Industries Association, 2017). In both cases, the justification to limit competition brings with it a power-dependent relationship in which the supplier has potential dominance over the purchaser while simultaneously limiting the supply base. In these situations, an acquisition team must understand the principles of resource dependency and power-dependent relations in order to mitigate and plan for the potentially negative ramifications of entering into these types of contracts. The third and final reason code provides justification based upon international agreement. These contracts would generally fall into a category of foreign military sales in which the Air Force contracting office acts as a conduit for foreign entities to interact and purchase major weapon systems from U.S. defense contractors. In these situations, contracting officers and the acquisition team are expected to negotiate with the contractors in good faith on behalf of an international partner. This type of contracting has the potential to provide diplomatic boosts for international affairs and can prove to strengthen and foster international partnerships for military and economic efforts. For these reasons, it is again imperative that the acquisition team understands the ramification of limiting competition and is adequately trained on the strategic options available to it to work for a parity of power within the contractual relationship and mitigate negative effects of resource dependency. The spend data highlights a problem within the USAF. We believe the problem is the AF's unfamiliarity with resource dependency theory (RDT) and power dependent relations theory (PDT). More importantly, the USAF's inability to maximize usage of the concepts related to RDT and PDT place the government in difficult negotiation positions not only for immediate contract actions, but also for the future requirements and contracts that those actions affect.

IV. RESOURCE DEPENDENCE THEORY

In this chapter, we review RDT and its application to DoD contracting. RDT has evolved since its inception in 1978 with the publication of *The External Control of Organizations: A Resource Dependence Perspective* by Jeffrey Pfeffer and Gerald R. Salancik. RDT focuses on the dependencies and interdependencies of organizations and how those interactions influence the decisions made to move the organization forward. It describes how an organization's environment limits its ability to control, respond, and grow (Malatesta, 2014). RDT focuses on an organization as an open system that relies on its environment for survival (Pfeffer & Salancik, 1978). Transactions occur with an organization's environment to secure resources. The ability or inability to control those resources is what creates uncertainty. An organization's vulnerability is the extent to which the organization has become dependent on resources and the number of coalitions that must be created to sustain longevity. The significance of the resources dictates the criticality of resource exchange. "An organization that creates only one product or service is dependent upon the needs of its customers, and inversely, an organization that requires only one input will be more dependent on that one source than an organization that is diversified and can be fulfilled by multiple sources" (Pfeffer & Salancik, 1978). Three aspects create the dependence an organization has on different resources: the importance, scarcity, and the competition for the resources among the other organizations who use and control those resources (Pfeffer & Salancik, 2003). The only way to mitigate or control dependency is to reduce the amount of dependency on others while increasing other's dependency on their organization (Ulrich & Barney, 1984).

There are three main concepts that influence RDT. They are the social context, organizational strategy to increase independence based on their environment, and power (Davis, 2010, p. 23). These are essential to understanding how an organization will react internally and externally. The social context is a matter of perspective. Every organization is different and must therefore be analyzed as such. Ultimately, the organization must pursue its goals in the manner determined by its leadership as best for the organization to achieve sustainable success. The strategy carried forward is predicated on the internal establishment and how the leadership plans to operate within its environment. Power is based on Emerson's

1962 account of the dependence of one entity upon another. This connection is the basis for power and dependence, and the entity that possesses what another organization needs will maintain a favored position of power (Emerson, 1962). Hence, "power and resource dependence are inversely related" (Malatesta & Smith, 2014, p. 2).

A. SOCIAL CONTEXT

An organization can be analyzed by its actions internally and externally (Pfeffer & Salancik, 1978). Social context is the first premise. Organizations are selfishly motivated to achieve their own goals (Pfeffer & Salancik, 1978). Networks and coalitions are crucial aspects to the social context. The business transactions that occur where the organization has not control of the outcome establish the dependency on the other organization (Pfeffer, 2013). Problems occur within unstable environments, especially when the amount of control one has over another is imbalanced. The effects of the environment both for and against an organization prescribe how an organization will react. Internally, interpretations and decisions made for the organization establish how that organization will interact in a given environment. The social context is critical because of the varying criteria for evaluating an organization's position (Pfeffer & Salancik, 1978).

Organizational actions and results are framed by the arrangements the organization is rooted in. This is related to the interdependence or coalitions among organizations with different interests and/or demands. Therefore, one entity does not control all the circumstances to move in any given direction within their area of operation. Therefore, coalitions are established to achieve organizational success. The organization needs to ensure a specific outcome is desired. Lastly, the organization needs to establish themselves as competition or if collaboration is necessary for survival.

The last piece for social context involves understanding the environment in which an organization operates. The environment includes all individuals and organizations for the necessary resources. The survival of organizations is based on the interdependence within their environment. (Pfeffer, 2013).

B. ENVIRONMENT

The strategy implemented by organizations to enhance their autonomy is based on the independent and dependent relationships encountered. Strategies are formulated to manage external dependencies. Those strategies are controlled by the demands and power of external groups beyond the organization's control. An organization can either adapt or avoid the constraints implemented by the environment. The environment is manifested via concentration, munificence, and interconnectedness (Pfeffer & Salancik, 1978). Concentration refers to how authority and power are dispersed. Munificence involves how rare critical resources are, and interconnectedness refers to how organizations are linked within their environment (Malatesta & Smith, 2014). Organizations use five options when interconnecting to mitigate environmental dependencies: mergers and acquisitions (M&As), joint ventures, changes to boards of directors, political influence for regulation changes, and executive succession (Pfeffer & Salancik, 1978). A firm understanding of the environment will provide an organization the understanding they require about the amount of power they have over others, as well as the amount of power held over them.

C. POWER

Power is the ability of one to influence the decision of another in ways that produce favorable outcomes for the influencer. "The power of actor A over actor B is the amount of resistance on the part of B that can be potentially overcome by A" (Emerson, 1962). Power is a major factor in an organization's application of RDT when it is applied internally and externally (Pfeffer & Salancik, 1978). This principle suggests the balance of power will favor the organization that possesses what other organizations want or need (Malatesta & Smith, 2014). The internal and external impacts have various effects on organizational decisions. Internal organizational power will mirror the external conditions faced (Pfeffer, 2013). Coalitions among the internal and external forces are created to control the amount of influence held over them (Ulrich & Barney, 1984).

Organizational leaders need to understand how organizations interact and for what reasons as well as the power dynamics involved in order to maintain a successful strategy. Emerging technology and the value of resources is a dynamic environment that requires constant monitoring, and the control over an organization or resource is never absolute

because there are always changes and coalitions for the control of resources (Pfeffer & Salancik, 1978). This means in order for organizations to be successful, market intelligence must understand and be applied within the environment in order to apply the appropriate strategy to capitalize or mitigate the distribution of power (Pfeffer & Salancik, 1978). Entities that can forecast the most critical external resource dependencies will have relatively more power because of their capacity to mitigate external threats and constraints (Pfeffer, 2013).

In this example, the Air Force can be viewed as the corporation, and the external environment includes the contractors who interact, operate, support, and fulfill government needs and requirements. The lynchpin idea is that resources are the keys to success for an organization. The ability to control or plan for the resource control in the future is crucial to the strategy that is created. Organic versus outsourced means are decisions that are established by an organization's leadership. The outsourced determinations lead to a position that places dependency on the outsourced product or service. Those resources are controlled by other organizations, and the amount of dependence placed on those resources will dictate how and what an organization can do. The environment an organization operates in will be able to explain the decisions and strategies implemented. Because the DoD is not a profit maximizing entity, program managers operate under the constraints of providing the best value for warfighter capability. Contracting officers operate under the constraints of fulfilling customer needs/requirements while adhering to public policy, specifically being good stewards of taxpayer dollars. Agency theory suggests that these conflicting objectives lead to behavior that is contrary to PMs and contracting officer goals (Eisenhardt, 1989). As a result, direct monitoring, rule setting, and other control devices are used to encourage efficient operations within the DoD (Congressional Budget Office [CBO], 2017). Competition is a critical variable that can assist to counter economic models related to monopoly, oligopoly, and imperfect and perfect competition (Pfeffer & Salancik, 1978). How and where contractors fall within these economic models will establish a power relationship. In the next section, we detail power-dependent relationships and the ways they relate to the acquisition process.

V. POWER-DEPENDENT RELATIONS

The theoretical foundation of power-dependent relations comes from the work of Emerson (1962) on the power aspects of social relationships. His writings, although based within social interactions, have been widely tested and applied to a large and diverse population of academic fields. His foundational theory began with the concept of actor dependency. According to Emerson (1962), "The dependence of actor A upon actor B is (1) directly proportional to A's motivational investment in the goals mediated by B, and (2) inversely proportional to the availability of those goals to A outside of the A-B relation" (p. 32). The *goals* presented in the previous definition are anything that actor A would desire from the relationship with actor B and are predicated upon the availability of the same goals being satisfied by an outside actor. Emerson goes on to substantiate that the power within the relationship is based upon the dependency of the actors on each other in achieving their individual goals within the relationship, and the amount of power held by the dominant actor is based upon the resistance of the submissive party (Emerson, 1962). This power balance or imbalance then provides potential leverage for individual actors to use within the relationship. Emerson explains several avenues that a power-inferior actor may take to either balance the parity of power or reduce the negative effects of a power imbalance within the relationship. The first avenue is cost reduction measures, which involve the altering of values on the part of the inferior actor to reduce the discomfort in meeting the assertions of the dominant actor within the relationship (Emerson, 1962). The actions taken by the submissive actor when engaging in cost reduction do not actually alter the balance of power within the relationship, but they make the relationship more tolerable for the submissive actor. This concept is separate from the concept of balancing operations, which strive to fundamentally alter the balance of power between the actors within the relationship.

Emerson illustrates four separate balancing operations that actors can engage in to alter the power differential within the relationship. These operations are withdrawal, extension of power network, coalition formation, and the emergence of status (Emerson, 1962). The first balancing operation, withdrawal, entails the removal of the goals or desires of one-party member within the relationship, typically due to frustrations based on the

exertions of a dominant party on an inferior party within the relationship (Emerson, 1962). This balancing operation is typically an actor's last resort if all the other balancing operations are ineffective, because the withdrawal of a desire on behalf of that party actor is difficult and is not necessarily a desirable alternative.

The second balancing operation is the extension of the power network. Power-dependent relations are not exclusive to the interactions of individual actors but may be comprised of the interactions of a series of interconnected actors amongst several power-dependent relations. Emerson (1962) defines this interaction as the "power network" (p. 31), and the second balancing operation leverages the size of the power network to dilute or shift the power imbalance of a dominant force within an individual power relation between one or more actors (Emerson, 1962). Remember that the power within a relationship is defined by the dependency of the actors upon one another, so it may therefore be surmised that if an actor expands its access to the goals it desires within the relationship by expanding the power network, that actor would diminish the power of superior actors and increase its own power within the relationship.

The third balancing operation, coalition formation, leverages the collective power of inferior power actors when striving to achieve desired goals within a relationship. This concept differs from expanding a power network in the fact that coalition formation entails inferior actors within a power relationship pooling their resources to increase the resistance toward the relationship's dominant actors, thereby reducing dominant actors' power over the inferior actors (Emerson, 1962).

The final balancing operation is the emergence of status, which relies upon the intrinsic value placed upon individual or group actors within either a power-dependent relationship or power network. This balancing operation recognizes that within power-dependent relations, there is either an implicit or an explicit hierarchy of actors or colluding actors based upon the dependency of each party on the others. Therefore, this method allows a dominant power to grant preferential status to an inferior actor to increase the inferior actor's motivation and desire to reach its individual goals within the relationship; it also shifts the balance of power toward parity while simultaneously increasing the inferior actor's commitment to the relationship (Emerson, 1962). These balancing

operations provide flexibility for both dominant and submissive power actors to affect the power within an individual relationship or affect a power matrix. The concept of dependency and balancing operations have proved to be widely applicable to several different disciplines, and the most appropriate for this study are in the areas of supply management and contracting.

Caniëls and Gelderman (2005) adapted Emerson's theories of power dependency and combined them with theoretical models of supply management. The first theoretical adaptation is in the use of purchasing strategies utilizing the Kraljic (1983) matrix. The Kraljic matrix is a well-regarded theoretical framework of supply management for classifying critical supply items within a supply chain and then categorizing them into quadrants based upon their profit impact and supply risk (Kraljic, 1983). Caniëls and Gelderman (2005) utilize Kraljic's model as a framework to infuse the concept of power dependency into supply management. The linkage comes in the form of the type of relationships an organization should foster to secure an item into a particular quadrant of the Kraljic model, or to shift an item from one quadrant of the model to another. Firms within a market have at least some dependency on the trading partners or suppliers with whom they interact, and this dependency takes several forms if the perspective is taken from the purchaser or the supplier (Caniëls & Gelderman, 2005). These perspectives then dictate how a firm interacts with other entities and shapes the strategies and goals the firm has within both the total market as well as its individual industry.

Caniëls and Gelderman (2005) structure their approach on the four quadrants of the Kraljic model and develop relational strategies to establish a relationship to hold the item within a specific quadrant or provide the possibility of moving the item to a different quadrant within the Kraljic matrix. The first quadrant of Kraljic's matrix is strategic items. These items represent significant importance to the firm due to their high impact on both supply risk and profit (Caniëls & Gelderman, 2005). Because of the importance of these items, supply mangers always look to ensure secured access to these items and reduce or remove the possibility of loss of access at almost all cost.

Caniëls & Gelderman (2005) describe three actions purchasing agents can take to effectuate the desired change of either keeping an item within the strategic quadrant or

moving it to a different quadrant. The first action is to maintain a strategic partnership. This action maximizes the mutual trust and the inherent commitment of aligning goals within separate firms to ensure mutual growth and prosperity for both firms. These actions result in a balancing force against the supply risk portion of this quadrant, and because of the mutual buy-in for both supplier and purchaser, there is a parity of power within the relationship. The second action is acceptance of a locked-in partnership. Like the strategic partnership, this strategy can lock in an item to the strategic quadrant; however, unlike the mutual trust established within a strategic partnership, this locked-in partnership is one in which the supplier has near monopolistic power within the relationship and can leverage negative or unfavorable conditions onto the purchaser should the purchaser not comply with the terms of the relationship. This strategy leaves the purchaser beholden to the supplier, and although it allows the purchasing agent to meet its strategic goals, these goals are dependent on the cooperation of the supplier. The final action within the strategic quadrant is to terminate a partnership. Through termination, the purchaser frees itself from the dependency of the supplier and thus removes the power of that supplier within the relationship. This strategy can allow a supply to move from the strategic quadrant to another quadrant if multiple suppliers are identified and thus reduces the supply risk from high to low. As the strategic items are the most important items to the firm, mastery of these strategies is paramount for suppliers and purchasers alike, and the relational implications of each strategy must be considered when developing long-term goals for the firm.

The second quadrant in Kraljic's (1983) matrix is bottlenecked items. The bottleneck item is categorized as an item that has a high supply risk but a low to moderate profit risk for a firm. The nature of these items gives suppliers dominant power over purchasers and leaves few options for purchasers to exact influence on the market, Caniëls and Gelderman (2005) propose two separate strategies to address items within the bottleneck quadrant, and they may result in a shift of an item from one quadrant to another if implemented. The first strategy occurs when purchasers accept dependency on suppliers and make a conceded effort to reduce the negative consequence (Caniëls & Gelderman, 2005). Because the supplier has the dominance within the relationship, the purchaser does not have outright power to influence the actions of the supplier but can take steps to

mitigate the negative effects of the relationship. Since the supplier controls the flow of resources to the purchaser, the purchaser can develop surge or contingency planning to mitigate the supply risk. This could take the form of holding safety stock or excess inventory to ensure order completion should the supplier reduce resource availability (Caniëls & Gelderman, 2005). The other strategy available for purchasers is to find alternative sources through reduction of dependency and risk of the supplier. This strategy motivates the purchaser to maximize competing suppliers to ensure increased availability of the bottlenecked resource (Caniëls & Gelderman, 2005). This can be accomplished by generalizing specifications or altering mandatory ordering amounts to ensure more suppliers are capable and interested in the purchaser's business. This strategy does not outright remove the power of the suppliers within the quadrant but does allow the power to be shifted across multiple firms rather than in the hands of one or a few. This is like the concept of expanding the power matrix as described by Emerson (1962). By expanding the supplier base, the purchasing agent could move the bottlenecked item from one of high supply risk to one of a lower supply risk if enough firms can provide the resource.

The third quadrant in Kraljic's (1983) matrix is leveraged items. Leveraged items have relatively low supply risk but high profit impact. This quadrant represents the first area where the purchaser has the potential for a dominant power within a supplier and buyer relationship. This is because the purchaser has many possible sources of supplies and an equally large number of incentives to generate competition among these suppliers. This can allow the purchaser to take a more aggressive stance within the market and direct price concessions or unfavorable conditions onto the supplier. Under these circumstances, the purchaser has two strategies to either keep an item within the leveraged quadrant or shift the item to an adjacent category (Caniëls & Gelderman, 2005). The first strategy is to exploit the buying power of the purchaser. Since suppliers and the products, they provide are interchangeable with one another, the purchaser has little incentive to create a long-term partnership with suppliers (Caniëls & Gelderman, 2005). Instead, the purchaser can provide an incentive program for superior or preferred suppliers who may earn preferential selection within the market. This strategy allows for lower prices and higher quality for the purchaser and the option to aggressively expand the supplier market should preferential suppliers fail or raise prices. The second strategy is for the purchaser to develop a strategic

partnership with suppliers. This strategy is like Emerson's (1962) idea of granting status within a relationship. The purchaser may choose to abandon its dominant position to take advantage of a unique or valuable opportunity a supplier may provide. This strategy would balance power within the relationship and may provide opportunities for both the supplier and purchaser to achieve their own strategic goals and align their resources more efficiently to achieve those goals.

The final quadrant in Kraljic's (1983) matrix is the non-critical items. These items represent supplies that are neither profit impactful nor a supply risk. Despite the lack of overall impact on profit and the abundance of suppliers within the market, non-critical items may still require a large degree of time and effort to manage to keep them in this quadrant. For these reasons, purchasers have two strategies for which to tackle non-critical items (Caniëls & Gelderman, 2005). The first strategy is the pooling of purchasing requirements. As stated previously, the nature of a non-critical item does not preclude the purchasing firm's level of need, and should this need not be met, there is a threat that the item moves to a quadrant that contains a larger profit impact or supply risk. For this reason, the purchasing agent can reduce logistical and administrative strain by standardizing the purchaser's processes and bundling requirements together. This concept utilizes the idea of economies of scale to ensure the continued supply of items to the purchasing firm. The second strategy is to maximize efficiency using individual ordering. This strategy would be considered when pooling resources or bundling of requirements is not practicable. Under these circumstances, the purchasing agent can still reduce administrative strain by reducing the complexity of the purchasing process and creating a more efficient purchasing system. This is like how companies utilize corporate expenditure cards for common supplies while decentralizing the ordering process to ensure continued availability through the lowest level of the corporation. Although the previous strategies articulate the possible directions a firm may take within a given market, Caniëls and Gelderman (2005) were clear to indicate that there is still a question about the conditions necessary to drive a particular choice within each quadrant. This concept is critical in understanding that there is not a clear superiority of strategies within the model and that a firm must carefully understand the potential benefits and ramifications of taking a particular course of action.

VI. METHODOLOGY

The previous sections summarized the theories of power-dependent relationships and resource dependency with respect to contracting, acquisitions, and business management. This summary was not intended to be an exhaustive analysis of the available literature on these theories, but rather provide a sound theoretical foundation for the theories themselves and identify which contemporary theoretical applications are applicable to the authors' problem statement and topic. Our goal is to assess whether AF contracting officers understand theories of resource and power dependence. To that end, we conducted surveys of the Space and Missile Systems Center contracting personnel located at Los Angeles Air Force Base (AFB) and interviewed supply chain managers of three for-profit companies ranging from retail, computer technology, and defense contractors.

SMC handles acquisition programs related to space. It is one of the top 10 DoD Activity Address Codes (DODAAC)s we noted during our review of FPDS data. We asked these personnel questions framed around the definitions related to the theories and their understanding of DoDI 5000.02, *Operation of the Defense Acquisition System* (OUSD[AT&L], 2017). DoDI 5000.02 is used to provide the established policy for the management of all acquisition programs (OUSD[AT&L], 2017). Contracting professionals' understanding of power and resource dependency theories and DoDI 5000.02 demonstrated their understanding of the application of an acquisition strategy as required by DoDI 5000.02 and the importance of the balance of power between those with and without resources, especially in situations in which the government begins a requirement on a non-competitive basis.

Since 1994, FASA encourage the use of commercial practices in fulfilling government requirements. It is equally important to begin to understand the knowledge and application of power dependency theory and resource dependency theory within the commercial sector. To accomplish this, we administered the same survey to multiple commercial companies. This allows us to compare and contrast the responses across the public and private sectors. The commercial companies were contacted through personal

points of contact. These companies represent a wider variety of markets, products, and corporate structures. Although we cannot conduct any statistical analysis of the commercial survey results, it offers qualitative evidence on how supply chain managers in companies understand and apply the principles of power dependency and resource dependency theories.

Before describing our survey, a few caveats are in order. First, we recognize that SMC is not a complete representation of the entire contracting community. However, we used this group because the command provided us the necessary permissions to survey their people. We hope commands in the future will be more willing to allow surveys of their personnel. We also recognize that the surveys were provided to the government without any prior coordination or discussion regarding what and/or how contracts are planned for and awarded. Our understanding of AF contracting processes in general, require all contracting offices to follow AF templates and perform business advisory functions to major systems acquisition teams, specifically in acquisition strategy and contract negotiation. The implication is that AF members are able to capture the appropriate market intelligence by adhering to the established templates. Private sector contractors were asked about their actions or steps taken by their organizations in sourcing requirements, especially in constrained competitive environments in order to compare actions taken to fulfill market intelligence for their requirements.

Our survey tests each participant's understanding of important theories and a practical application of that understanding. We accomplished this by first providing scenario-based questions that showed the practical application of the theories of power and resource dependency. We excluded any definitions in the scenario. Indeed, we placed the scenario questions first to remove any bias or leading responses from future survey questions that introduce the conceptual understanding of power and resource dependency. Immediately after the scenario questions, we asked respondents questions on theories of resource dependency and power-dependent relations. These are intended to reveal their familiarity with these theories. Each perception section contained questions about the frequency of use of each theory as illustrated by common workplace examples. An example of which was "How essential are physical resources to understanding resource dependence?", or "How often do you utilize the expansion of the power network balancing

operation within power-dependent relations?" We also added a government specific section dealing with understanding of key programmatic documentation and policy such as the DoDI 5000.02 (OUSD[AT&L], 2017) to make a comparison between the strategic planning framework within the DoD and the understanding of resource and power dependency. In addition, some survey respondents did not completely answer all questions. Assumptions were established base on their recorded answers and those respondents were assumed to not understand the remaining questions that were left blank. Finally, our survey asked for basic demographic information such as years of experience, job title, and rank/grade. Please see Appendix I for the complete survey.

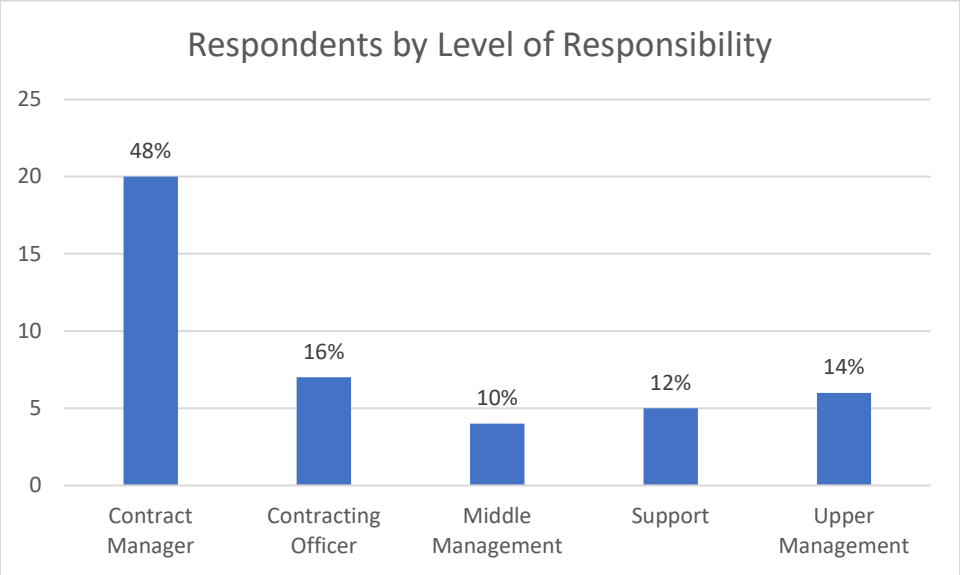
Our prior belief was that the AF survey would perhaps reveal that contracting officers are more unfamiliar with power and resource dependence theories compared to supply chain managers in the private sector. This anticipation stemmed from our belief that the private sector, having a profit motivation, has a greater need to understand and implement the concepts of power and resource dependency since any efficiency from understanding the theories, or misunderstanding and inefficiency, would hit the company's bottom-line profit. Additionally, we also anticipated that government contracting professionals will have an average to high understanding of DoDI 5000.02 (OUSD[AT&L], 2017), and that the private sector would have a lower understanding of these documents. We anticipated that this would imply that individuals within the public sector who have a higher understanding of the strategic planning frameworks would have a greater chance of understanding the theories of resource and power dependence since the strategic document advocates acquisition teams emphasize acquisition planning and market intelligence as key parameters to a successful program.

THIS PAGE INTENTIONALLY LEFT BLANK

VII. SURVEY RESULTS

We begin by reviewing the summary responses of the AF contracting personnel. In our surveys, we collected responses from contracting civilian and military personnel at SMC located in Los Angeles AFB, CA, between 18 September 2018–19 October 2018. We also sent our survey to private sector contractors in the fields of retail, computer technology, and defense contracts. All respondents were provided the survey via hyperlink or in person, and we created the survey on the Lime Survey platform. The interviews facilitated an expanded narrative based on our survey with contractor respondents. To make a comparative analysis, our survey also included questions aimed at ascertaining military and civilian understanding of the JCIDS process. We sent the survey to 219 military and civilian contracting personnel. Thirty-eight responded indicating a 17% response rate. Not all of the thirty-eight respondents provided answers to all survey questions, however, we assumed a non-responsive answered meant these particular respondents did not know the material. We understand these results could possibly be skewed and should be taken into consideration when reviewing the results. Additionally, we understand that the number and titles related to the number of surveys submitted are not a conclusive result that can provide definitive analysis. The demographics of the survey data are shown in Table 6.

Table 6. Survey Respondents by Acquisition Role. Adapted from Lime Survey (2018).



Our survey provided respondents the opportunity to select their role as a contract manager, contracting officer, or provide their own role by selecting "other." Based on all respondents' levels of responsibilities selected, we separated their roles into three categories, middle management, support, or upper management. Respondents whom answered middle management were contracting personnel such as lead supply chain managers. Those individuals placed in the support role were members such as auditors from the Defense Contract Audit Agency (DCAA) and policy reviewers. Finally, leaders such as a deputy director of contracting and chiefs of contracting operations were categorized as upper management positions within DoD contracting. Based upon the response data, only 16% of respondents fell into the category of contracting officers, while 48% of respondents identified themselves as contract managers. Based on our personal experience, contract managers represent the practitioners of government contracting and when compared to the other categories, generally are comprised of traditionally junior personnel. Table 7 shows the years of experience of respondents.

Table 7. Survey Respondents by Years of Experience.
Adapted from Lime Survey (2018).

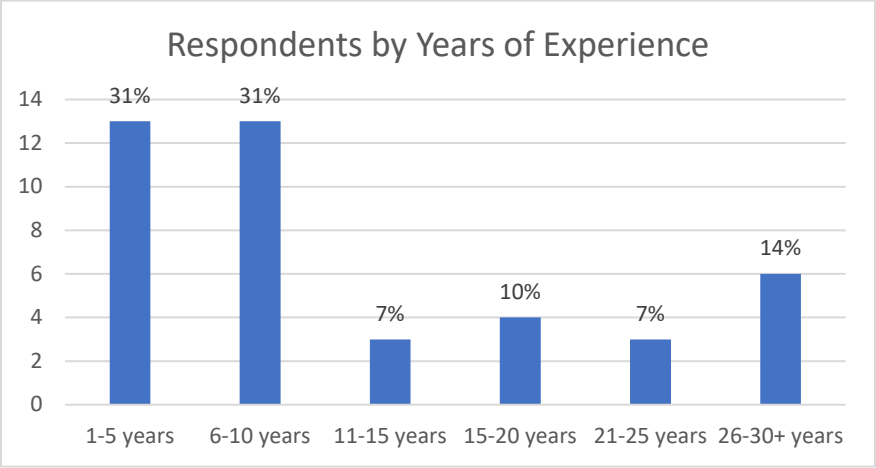


Table 7 shows that 62% of respondents fall at or below 10 years of experience. These results confirm that most respondents are more junior in their careers. We then looked at specific ranks and grades for government personnel or equivalent leadership for private sector respondents as illustrated by Table 8.

Table 8. Survey Respondents by Rank or Grade.
Adapted from Lime Survey (2018).

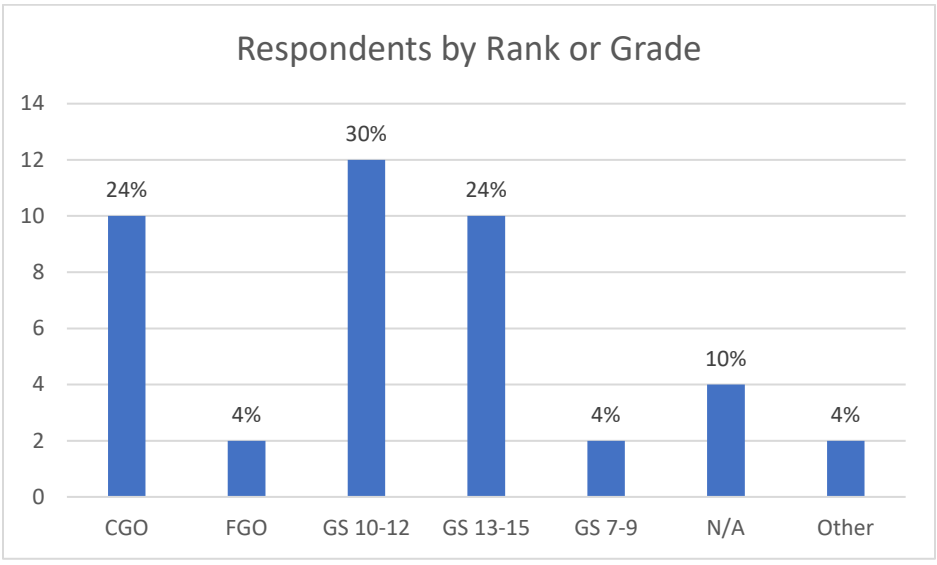
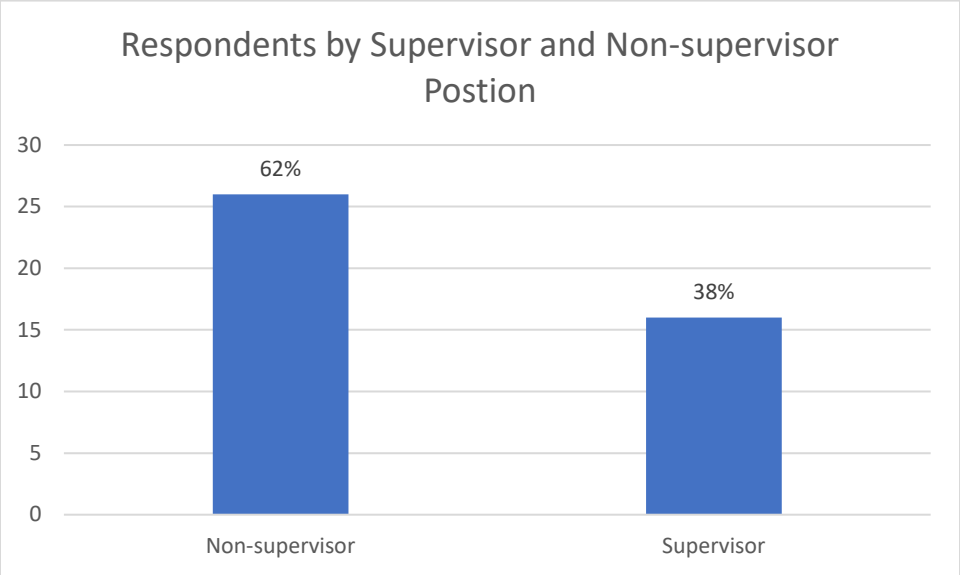


Table 8 shows that 24% of respondents indicated a paygrade of Company Grade Officers (CGO) or General Schedule (GS) with the grade of 10-12. These paygrades are junior officers and their federal employee equivalents within the DoD. Finally, we asked respondents if they were in a supervisory or non-supervisory position, and Table 9 illustrates respondents' answers to this question.

Table 9. Survey Respondents by Supervisory.
Adapted from Lime Survey (2018).



This data indicates that 62% of respondents are positioned in a non-supervisory position within their organization. With the baseline questions established, we looked to test the respondents' practical understanding of power-dependent relations and resources dependency by presenting acquisition scenario-based questions.

To measure the respondents understanding of the tenants of power-dependent relations, we developed a scenario-based acquisition question to illustrate a common power-dependent relation situation. We asked respondents to select their best answer out of 4 possible power balancing operations. Table 10 shows the distribution of responses.

Table 10. Power-dependent Relation Scenario Question Answers. Adapted from Lime Survey (2018).

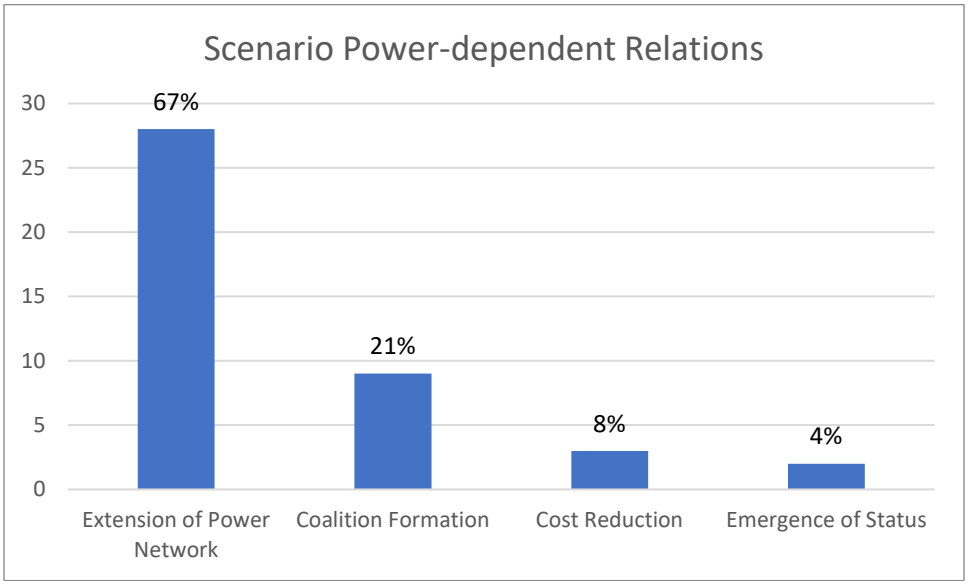
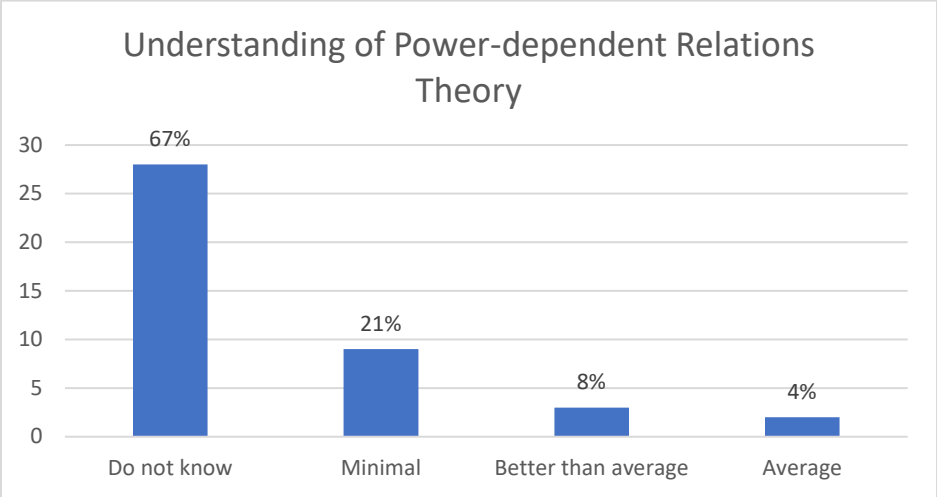


Table 10 shows that 67% of respondents correctly answered the scenario-based question by selecting the extension of power network balancing operation. Despite the inexperience of the survey population and a lack of explicit training on power-dependent relations, survey respondents were able to analyze the situation and realize which balancing operation made sense in the scenario. These results indicate that there is some level of implicit training on power-dependent relations that the survey respondents received, possibly through on-the-job training, or contracting personnel have an explicitly greater understanding of power-dependent relations.

We asked a follow-on question whether respondents explicitly understood the theory of power-dependent relations. Table 11 shows these results.

Table 11. Respondents Self-described Understanding of Power-dependent Relations. Adapted from Lime Survey (2018).



The results of this question clearly show that most respondents, 67%, were not aware of the theory of power-dependent relations. This indicates that survey respondents were not receiving explicit training on power-dependent relations or the balancing operation within the theory. Additionally, it is surmised that respondents gained their insight of balancing operations within the theory of power-dependent relations from on-the-job training.

A. UNDERSTANDING OF PDT

Along with theoretical knowledge, we wanted to understand if respondents utilized balancing operations within their work. We asked respondents 15 separate questions about their utilization of power-dependent relations principles. Since each principle has a separate utilization that is typically situationally dependent, we aggregated respondent's answers into one of three utilization categories. These categories were high, moderate, and no utilization. We categorized respondents with high utilization if they answered 8 or more questions with an answer of "better than average" or "high", a moderate utilization if they answered 8 or more questions with and answer of "average" or "minimal" and finally no utilization if they answered 8 or more questions with "do not know". We recognize that individuals who answered that they did not know the concepts may still utilize the concepts in their work, but for the sake of our study, we interpreted their lack of understanding of

the concept equaling a lack of utilization within their work. We were then able to make a comparison between utilization and respondents perceived understanding of power-dependent relations, as illustrated in Table 12.

Table 12. Respondent Utilization and Theoretical Understanding. Adapted from Lime Survey (2018).

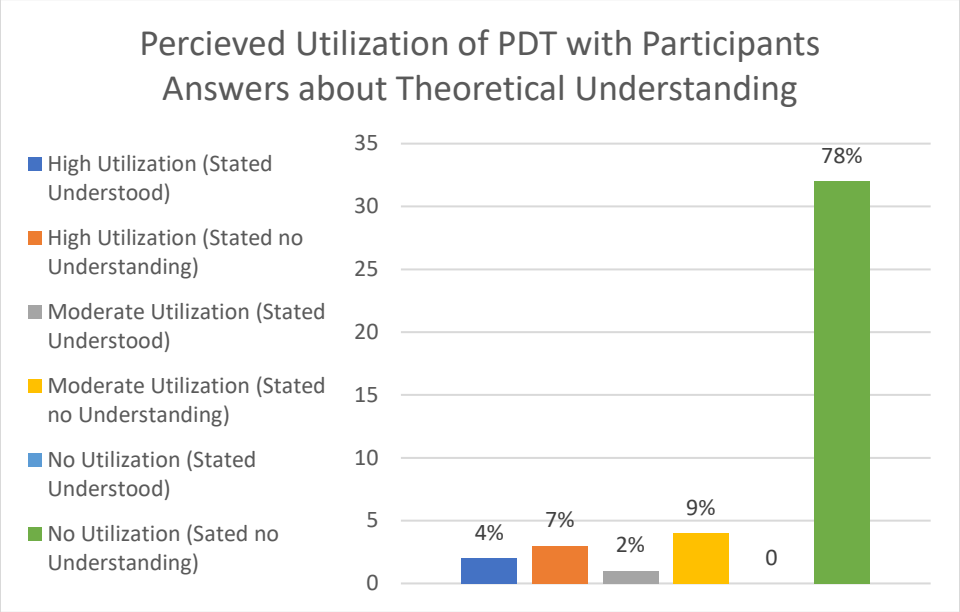
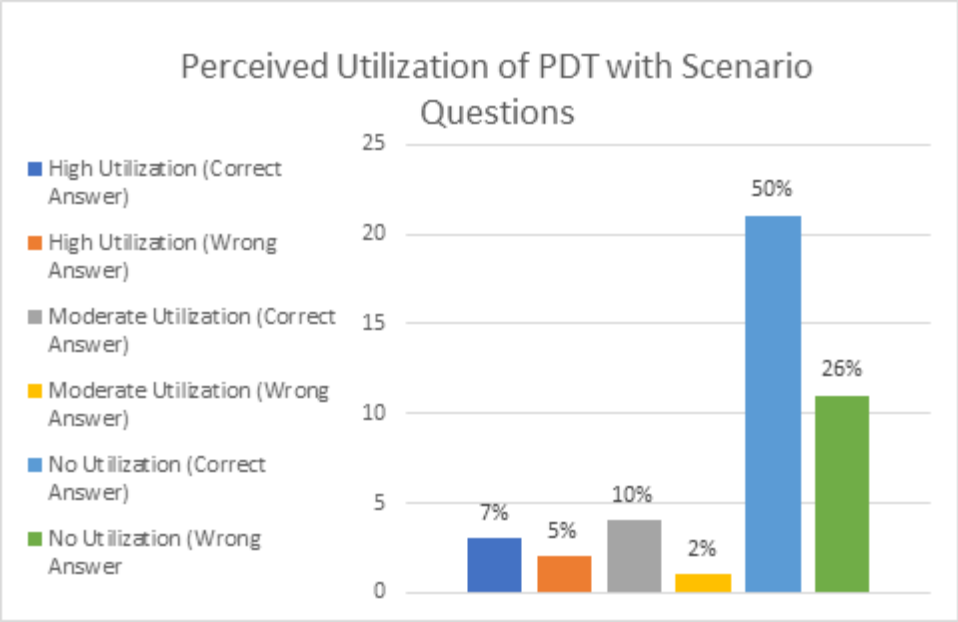


Table 12 shows that 78% of respondents have no utilization and stated that they have no understanding of the concepts of power-dependent relations. We also wanted to compare respondents' utilization of concepts and whether they can answer the scenario-based question correctly. The results of this comparison are illustrated in Table 13.

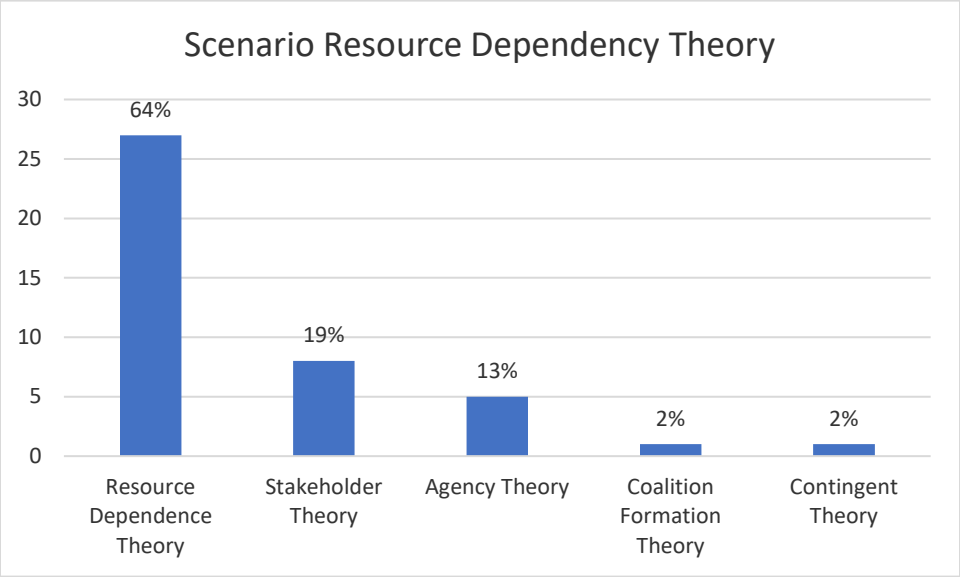
Table 13. Respondent Utilization and Scenario Question. Adapted from Lime Survey (2018).



The results show that 50% of all respondents involved in the study were able to correctly answer the scenario-based question but stated they do not utilize the balancing operations within power-dependent relations. Furthermore, of the 76% of respondents that had no utilization power-dependent skills, 65% of those respondents were able to correctly answer the scenario-based question.

Like power-dependent relations, we wanted to test the understanding and application of resource dependency theory. We structured our questions in a similar fashion to those for PDT. We first asked respondents a scenario-based question to test their practical understanding of resource dependency. Results of this question are illustrated in Table 14.

Table 14. Scenario Resource Dependency Theory. Adapted from Lime Survey (2018).

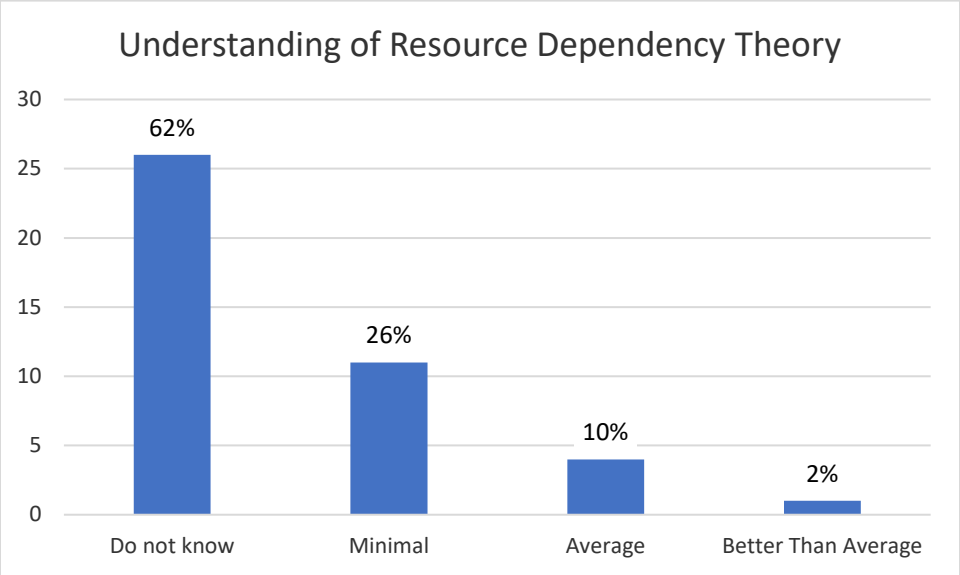


The results showed that 64% of respondents correctly answered the scenario-based question. We then wanted to understand if respondents felt they understood RDT and we asked them to self-assess their own understanding. The respondents' answers are illustrated in Table 15.

B. UNDERSTANDING OF RDT

This analysis of the survey data examined the respondents' perceived understanding of RDT. The results are as follows.

Table 15. Understanding of Resource Dependency Theory. Adapted from Lime Survey (2018).



The results show that 62% of respondents stated that they did not understand RDT. We wanted to also measure respondents' understanding of the conceptual principles of RDT and asked five questions designed to measure this understanding. We categorized respondents' answers into high, moderate, and no understanding. Respondents received a rating of high understanding if they answered three or more questions with either a "high" or "better than average" response, a category of moderate understanding if they answered 3 or more questions with an "average" or "minimal" response, and finally a category of no understanding if they answered 3 or more questions with "no understanding." Table 15 indicates that 62% respondents do not believe they have any understanding of the use of resource dependency.

We then wanted to compare individuals' perceived understanding of resource dependency on how they performed when asked a scenario-based resource dependency question. That comparison is illustrated in Table 16.

Table 16. Perceived Understanding of RDT with Scenario Questions. Adapted from Lime Survey (2018).

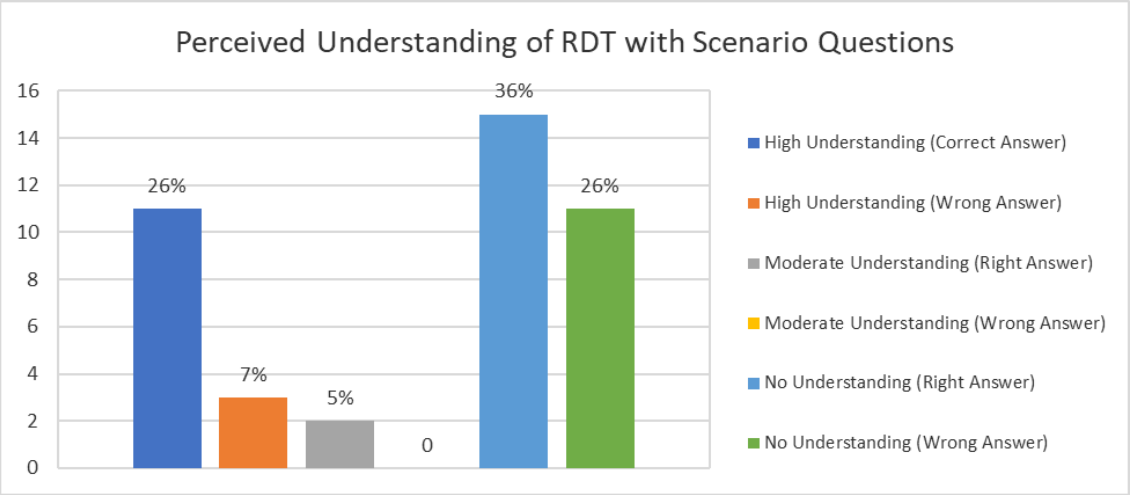
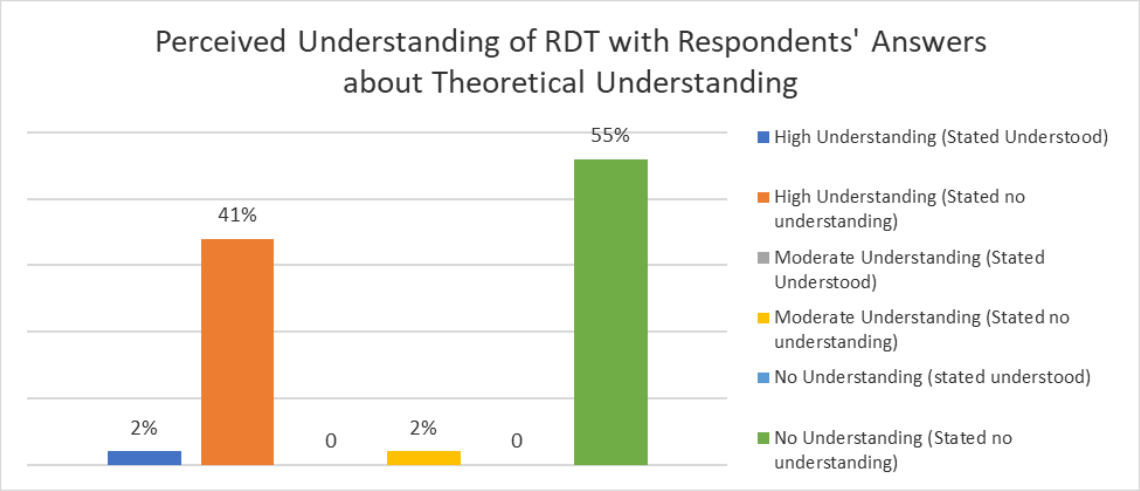


Table 16 shows that of the 62% off respondents stating they had no understanding of resource dependency, 58% of those individuals were able to correctly answer the scenario-based question. Additionally, the results indicated that of the respondents who perceived to have a high understanding of resource dependency, 78% were able to correctly answer the scenario-based question. We then wanted to compare respondents' actual understanding of resource dependency with whether they believed they understood the concepts. Table 17 illustrates this comparison.

C. RDT PERCEIVED UNDERSTANDING COMPARED TO THEORETICAL UNDERSTANDING

This section compares respondents perceived understanding of RDT as compared to the respondents' answers for the scenario-based question. The results are as follows.

Table 17. Perceived Understanding of RDT with Respondents Answers about Theoretical Understanding. Adapted from Lime Survey (2018).



This table indicates that 41% of all respondents had a perceived high understanding of the concepts associated with RDT. However, 55% of respondents stated they did not have a perceived understanding of RDT. The final area we wanted to question respondents on was their understanding of the JCIDS process.

D. JCIDS

We asked respondents seven questions to measure their general understanding of the JCIDS process and provide a comparison point between understanding of JCIDS and understanding of PDT and RDT. We categorized respondents into three separate categorized based upon their answers to the seven questions. Respondents who answered 4 or more questions with a "high" or "better than average" answer were categorized as having a high understanding, those that answered four questions with an "average" or "minimal" understanding were categorized as having a moderate understanding, and finally those answering 4 or more questions with "no understanding" were categorized as having no understanding. Table 18 provides the categorization of respondents.

Table 18. Respondent Understanding of JCIDS
Adapted from Lime Survey (2018).

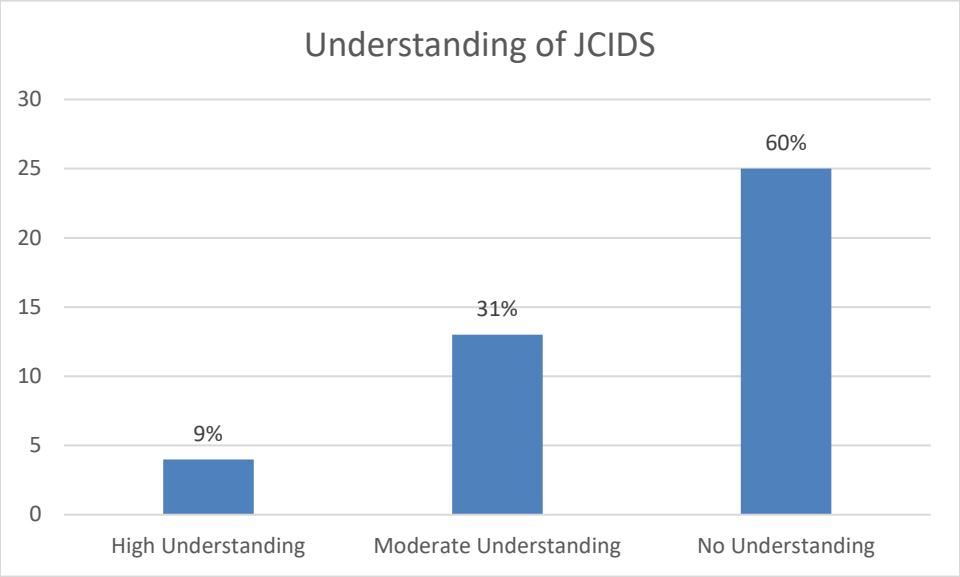


Table 18 illustrates that 60% of respondents had no understanding of the JCIDS process. We then wanted to compare respondents' understanding of JCIDS with whether they could correctly answer the scenario-based questions regarding RDT and PDT. To accomplish this, we first compared respondents' understanding of JCIDS and their answers to the scenario-based question for RDT. Table 19 illustrates this comparison.

Table 19. Perceived Understanding of the JCIDS Process and Scenario Questions for RDT. Adapted from Lime Survey (2018).

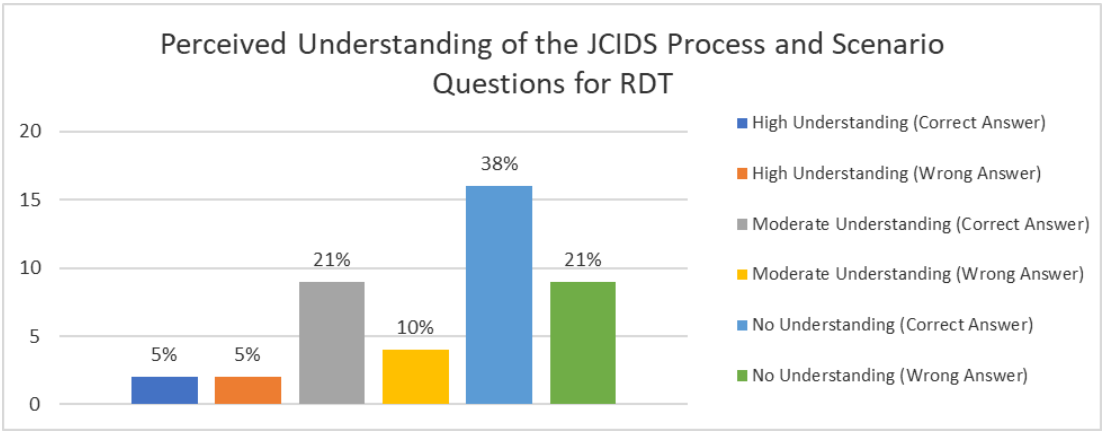


Table 19 indicates that most individuals had no understanding of JCIDS but were able to correctly answer the RDT scenario-based questions. We then compared JCIDS understanding with the PDT scenario-base questions. Table 20 illustrates this comparison.

Table 20. Perceived Understanding of the JCIDS Process and Scenario Questions for PDT. Adapted from Lime Survey (2018).

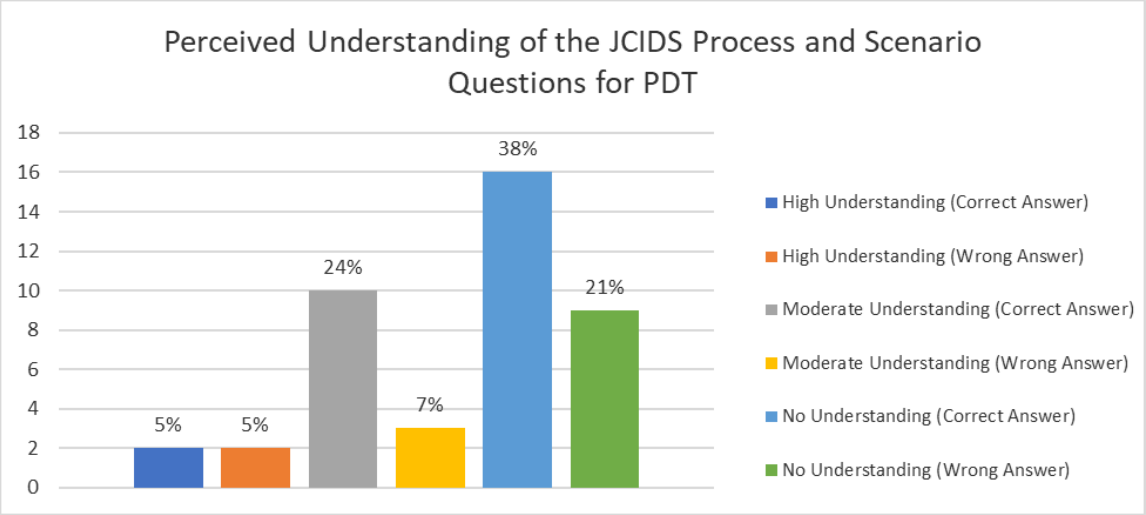


Table 20 indicates that most individuals had no understanding of JCIDS but were able to correctly answer the PDT scenario-based questions. We then needed to look at a comparison between understanding of the JCIDS process and respondent understanding of RDT and PDT. To accomplish this comparison, we first looked respondents' understanding of JCIDS compared to the respondents' self-assessed knowledge of RDT. Table 21 illustrates this comparison.

Table 21. Perceived Understanding of JCIDS Process with Respondents Answers about Understanding of RDT. Adapted from Lime Survey (2018).

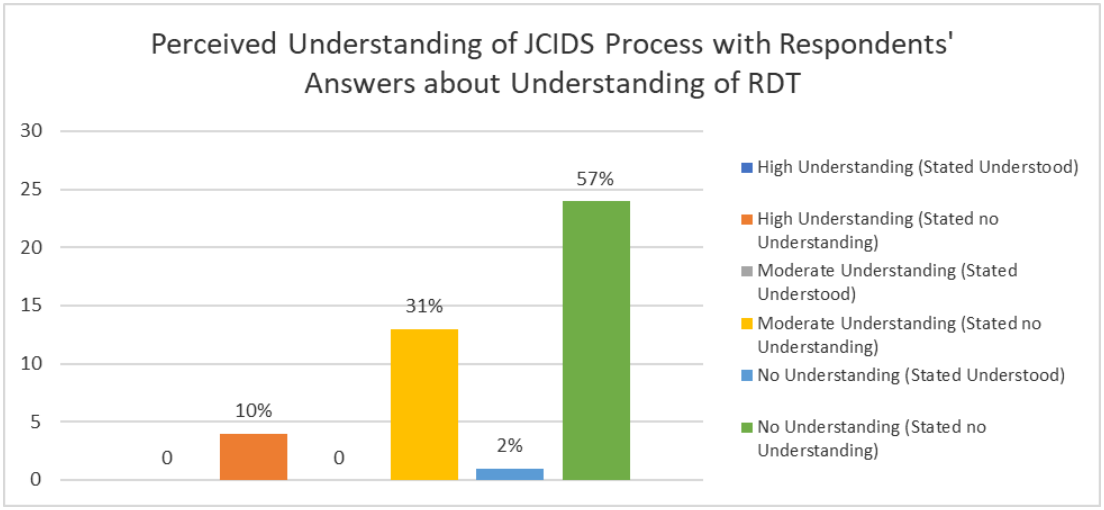


Table 21 indicates that most respondents did not have a high understanding of JCIDS and did not believe they had a high understanding of RDT. We then completed the same comparison between respondents' understanding of JCIDS and their self-assessed understanding of PDT. Table 22 illustrates this comparison.

Table 22. Perceived Understanding of JCIDS Process with Respondents Answers about Understanding of PDT. Adapted from Lime Survey (2018).

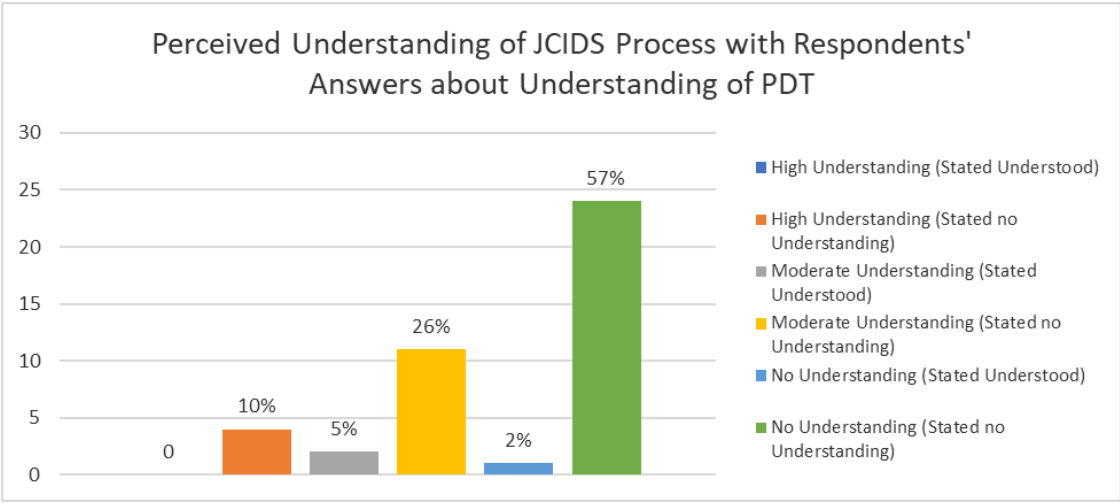


Table 22 indicates that most respondents had no understanding of JCIDS and stated that they believed they did not have any understanding of PDT. Finally, we conducted interviews with supply chain managers from private sector companies via phone and in person. The surveyed companies competed in a variety of commercial markets including apparel retail, computer technology, and defense contractors. We asked all companies to complete the survey, and afterward, we asked each company's representatives what methods/practices are in place and/or mandatory for requirements development, especially in situations where there is limited or no competition. These representatives emphasized the importance of relationships and they highlighted the importance of creating a true strategic partnership to assure the proper supply base. The representatives placed special consideration and importance on managing the demands of the market place with capacity to determine how strong of a relationship is required to make any partnership a success. This management strategy included the active development and maintenance of new suppliers to mitigate supply risk to the production companies. These programs not only diversify the supply base of the organization we surveyed, but would grow the supply base from a relationship that was built on mutual success of the participants. Each company highlighted the importance of making the right decision in order to maximize profit in order to please shareholders and consumers. Make or buy discussions are required for each requirement, and one company went so far as to state the company policy is to review the make or buy decisions annually, especially on internally produced items. A key point in the success of the make or buy decisions was based on the company's belief that they should focus on their specialty and outsource anything that does not directly contribute to that specialty. With the understanding of our survey interviews, it is important to outline our assumptions we had before sending out the survey and conducting subsequent interviews.

Drawing from our own personal experience and prior understanding of the theories of PDT and RDT, we held several beliefs going into our study. The first belief was that the public sector would not have a good understanding of the theories of PDT and RDT. This belief generated from our personal experience within government contracting. In our combined 20 years of contracting experience, we have never once been introduced to either resource dependency or power dependency theories despite them being prevalent in the

field for years. This assumption was confirmed based upon our survey data in which most respondents stated they did not understand PDT or RDT; however, it is noted that most respondents despite their lack of explicit knowledge were still capable of selecting the correct balancing operation or select resource dependency when asked the scenario-based questions. Our second belief was that the private sector would have a superior understanding of PDT and RDT than the public sector. This belief stemmed from our belief that the profit motivation within the private sector firms provide a greater incentive to understand and utilize the principles within PDT and RDT in order to drive down costs and secure greater profits. This assumption was largely disproved since our survey data indicates that the private sector does not explicitly understand the theories of PDT and RDT any more or less than the public sector, but they are more likely to implement the implicit principles of PDT and RDT than their public sector counterparts. Our final assumption was that the JCIDS process and its wide understanding within the public sector would be the foundational basis for any PDT and RDT understanding within the DoD. Our survey results that even within the public sector, individuals do not have a firm understanding of the JCIDS process and therefore this could not be the source of any knowledge or application of the principles of PDT and RDT. With our assumptions clearly answered, we can provide our conclusion and recommended courses of action for further study.

THIS PAGE INTENTIONALLY LEFT BLANK

VIII. CONCLUSION AND RECOMMENDATIONS

A. ANALYSIS

Analyzing the impact of a lack of understanding of the JCIDS process on public sector acquisition begins with the Joint Requirements Oversight Council (JROC). The JROC is a statutory council to the Chairman of the Joint Chiefs of Staff (CJCS) and is responsible for assessing, identifying, approving, and prioritizing military requirements in order to meet the national defense strategy (10 U.S.C § 181, 2018). The Joint Capabilities Integration and Development System (JCIDS) is the process utilized by the JROC to fulfill the responsibilities of the CJCS. JCIDS is the foundational process which documents and validates requirements across the DoD (CJCSI, 2015, p. 1-2). Acquisition systems are requirements established to fulfill the JROC objectives. DoDD 5000.01, The Defense Acquisition System, is specific to the DoD and applies to all acquisition programs for warfighter capability. The directive is the guide for managing all acquisition programs (DoDD, 2007, p.1). DODI 5000.02, Operation of the Defense Acquisition System, provides the procedures for implementing DoDD 5000.01, The Defense Acquisition System (DoDI, 2017, p.1). Program managers are required to ensure the business approach captured within the acquisition strategy is designed to manage the risks related to acquiring the product. This includes capturing market intelligence as well as applying knowledge and techniques found through market intelligence. As a result, the business approach identified within the acquisition strategy should be based on a market analysis that incorporates industry capabilities and deficiencies (DoDI, 2017, p.81). Over the course of a product's life cycle, changes should be anticipated to include integration of technological advances, requirement definition alteration, and changes in level of funding. As a result, acquisition programs have to adapt accordingly (DoDI, 2017, p. 5). JCIDS emphasizes close collaboration with the acquisition community during refinement of capability requirements for ongoing acquisition programs (CJCSI, 2015, p.6). The business strategy incorporated at the beginning of the acquisition requires review and periodic updates. Contracting professionals are in a pivotal position to influence and implement robust and effective business strategies capable of maximizing taxpayer dollars and providing supreme warfighter capability (Air Force Acquisition, 2018). Life-cycle sustainment is required to

be an integral part of the acquisition process for all requirements from inception (DoDI, 2017, p.75). This requirement is vital to the success of not only the program, but ensuring the government is postured for success from the beginning of the requirement. The success established at the onset of a requirement has the potential to save not only costs but capabilities and a balance of strategic power throughout the life of the requirement, most importantly during the sustainment phase since this is historically the dominant portion all program costs for all major systems requirements. Contracting organizations are found on every AF installation, and handle all types of contracting. This breadth of knowledge has the potential to maximize all areas of procurement from operational to R&D.

The JCIDS process is established to provide acquisition personnel a unifying and cross-functional system that lays the framework for a practical understanding of the principles of resource dependency and power-dependent relations. The lack of understanding of this document on the part of the government is troubling and may put the government at a strategic disadvantage when negotiating with their contractor counterparts. Understanding of this process would indicate if contracting personnel are able to plan for and apply resource-dependence and power-dependence theories. DoDI 5000.02, Operation of the Defense Acquisition System, requires the business approach detailed in the acquisition strategy, to be created to manage the risks based on thorough understanding of market capabilities and limitations (DoDI, 2017, p.53). Even if the government personnel followed proper planning documentation positioning themselves in a strategically advantageous negotiation position, there is still a disconnect between the public and private sector on the application of the theoretical principles of PDT and RDT.

Our research indicated that there is a common level of understanding between the public and private sectors on the theoretical knowledge of PDT and RDT; however, the willingness to apply this understanding is different between the public and private sector. Most public sector employees did not apply the theoretical principles in their work while most private sector contractors do. We believe the willingness and motivation to utilize these principles stems from the private sector's profit motivation. The private sector realizes any advantage gained which reduces costs, potentially increases their profitability and this motivation is taken very seriously. This means that acquisition professionals in the private sector have a greater motivation to seek out and apply new theoretical principles

than their public sector counterparts. This motivation not only occurs in the company, but to the individual employees as well since corporate and program success or failure could have lasting job security for these employees. This same motivation is not present in the public sector because the motivation for employees and the impact to the bottom-line are not as concrete as the private sector. Unlike the profit motivation within the private sector, the government realizes expanded capabilities and requirements while accomplishing certain political objectives as their motivation. This type of motivation is not only difficult to track, but even more difficult to assess potential impact of implementing innovative practices. This provides a disadvantage for public employees to change from what is a proven model and to take risks. If the public sector wants to be on an even negotiating platform with the private sector, it needs to learn not only to actively seek out new and innovative ways of dealing with contractual relationships and negotiations but also to take an active role in culturally implementing these changes to meet their objectives.

B. RECOMMENDATIONS

The remaining section articulates the recommended courses of action the USAF should take in response to our research. Each section utilizes findings and best practices of the private sector that the USAF should emulate and then provide an area of future study for other researchers to take. The first section is the private sectors use and understanding of market intelligence.

1. Market Intelligence Training

A critical component of expanding the supply base of these companies is the use of market intelligence. Supply chain managers maintained up to date knowledge on the markets related to their specialties by applying to their applicable trade magazines and/or internet updates on the markets themselves. Additionally, these managers actively engaged with suppliers' financial documents to assure that the supplier can perform the work and that the producer was not overloading the supply base. This means paying attention to local and global markets. To maximize buying power, all organizations rely on multi-year contracts when practicable to capitalize on their buying power and capitalize on their strategic relationships. Each company had its own form of successful partnerships in place

to handle all situations, but these relationships were particularly important in situations where requirements had limited or no competition. Other instances included combining teams of second and third tier subcontractors in order to capitalize on negotiation strategies with limited or no competition, with the explicit goal of driving down costs by working together and acting as a unified purchasing organization rather than a fractured buying organization.

The USAF needs to take an active role in understanding the markets they operate in and more importantly the impact they play in those markets. To accomplish this, the acquisition core of the USAF needs to develop a market intelligence mechanism within it. The private sector has separated the supply-chain function from the purchasing function, but all members in the acquisition team need to have an intimate understanding of their suppliers and the impact their organization has on those suppliers and the market. Therefore, the USAF needs to take a holistic approach when developing requirements, preparing for negotiation, and conducting acquisition planning. This means not including only contracting personnel, but all acquisition personnel. This concept should be introduced in the basic course for acquisition personnel and then specific applications and knowledge reinforced by on-the-job training and supplementary training. A subsequent study could expand upon our research and study the most effective way of teaching and implementing the market intelligence function within the USAF or DoD.

2. Incentives

The private sector companies provide several different incentives to their employees and to the suppliers they work with to drive the behavior they desire. Employee incentives come in the form of both monetary and non-monetary incentives. Monetary incentives take to form of bonuses or stock options and potential for increases in salary through future internal promotion. Most companies we talked to made it clear to their employees that if you want to be successful and if you want to move up within the company, you need to have superior performance, to be willing to move geographically to meet company needs, and to be willing to branch out from your current functional area to create a more well-versed and well-rounded individual. Non-monetary incentives came in the form of educational benefits and work-life balance considerations such as teleworking.

These incentives provided motivation for employees to stay within the company rather than necessarily promoting additional output. Companies also stressed the importance of incentivizing supplier behavior to meet customer needs. All contractors we spoke with stated that the relationship between the supplier and their company is the key component to properly incentivizing behavior. This relational dialogue typically starts at the executive level between companies and then is emulated in the working relationship at lower levels within the organization. This top-down approach appears effective because it sets expectations for internal personnel while making firm commitments between companies that drive behavior. This relationship provides mutual trust between the parties and develops over time, allowing for suppliers and the companies to share information and align goals to assure mutual success and profitability.

The USAF needs to reform their personnel and contractor incentives to properly motivate the intended behavior in their acquisition personnel and supply base. This would start by tying key performance parameters to both military and civilian personnel. The private sectors leverage performance incentives in their employees because they provide avenues for monetary and non-monetary incentives to tailor what best fits the individual employee and to maximize performance. The public sector incentives job security rather than individual performance and this incentive does not motivate employees past the minimum necessary to achieve satisfactory performance. Likewise, the USAF entrusts market competition to drive performance and often neglects the time and active participation necessary to cultivate relationships within the market. This strategy can be effective for commodity type items where products and companies are plentiful, and a strategic relationship is not needed, but for strategic items with a limited market, the proper relationship between supplier and government is paramount. Future research can illuminate the best mechanism to facilitate these relationships and what types of relationships best fit various market conditions.

3. Theory Training

Reoccurring and continuous training is a theme in both the public and private sectors. The companies we talked with have a variety of training designed either to expose personnel to new ideas and strategies or to reinforce learned behaviors. No company we

talked to have explicit training on PDT or RDT, however most have some form of negotiation training for contracting personnel and strategic sourcing for supply chain managers, which enforce the relational aspect of acquisitions and provide the practical applications of these theories. The training ranges from in-person seminars and retreats to recurring computer based annual training. The need for diversity of training types and topics compliments stems from the target audience for each training. The companies we talked to have specific courses targeted for junior, middle, and upper management and the skills developed in these training sessions are applicable to their level of work. This type of diversity is not uncommon to the DoD and public sector, but what is different is the general integration of training between functional areas. Most companies we talked to had a combination of their contracting, program management, and supply-chain managers training together. This allowed for each functional to express their needs and requirements during different acquisition phases and for them learn how their work directly affected the other functional areas. The other important aspect of this style of training is the ability to facilitate cross-functional progression within the company. All surveyed companies had engineers or program management individuals transition into the supply chain and procurement side of the company. The purpose was to capitalize on the subject matter expert knowledge and understanding of typical problems and more importantly, their inherent knowledge of how problems are tackled from a functional perspective. The fact that these companies had unity of training across these functional areas allowed for easier transition between them and led to what the companies believed to be a more well-rounded workforce.

This USAF emulates some but not all the training styles within the companies we surveyed. The USAF and the DoD provides a diversity of training to its acquisition core typically through DAU, however in our experience the USAF and DoD are lacking in the joint training between the acquisition functionals which show how each functional area impacts the other functional areas and how they are to properly work together to achieve their mission. We recommend that the USAF and DoD develop a joint training course through conjunction with DAU or through a separate course. This is a key shortfall in the current training provided to acquisition personnel within the DoD, and future research can

lead to recommendations on what type of training and what levels are most effective to provide cross-functional training for DoD acquisitions.

4. Unified Requirements Development

In a competitive environment, private industries must ensure their acquisitions strategies provide long-term sustainability and profitability for the company. The companies we surveyed teach this concept to their employees from their introduction into the company and ensure this theme is reinforced throughout the employees' career. This also extends to how they approach acquisition planning. The companies we surveyed make every effort to look at any acquisition with a life-cycle framework. This means that they consider not only the sourcing of materials and producibility of a product, but they also consider how they can leverage their existing technology to mitigate cost and ensure a cost-effective product. To accomplish this, contractors price their bids utilizing production cost, sustainment costs, and profitability. This is paramount when understanding the total life-cycle costs associated with a product and is a major factor in whether a company will choose to even bid on a product. Companies in the private sector need to have a firm grasp on what the market demands of their products and the impact that has on their supply base; therefore, the contractors play close attention to market changes and new technology and practices that give them a competitive edge over their competitors.

The government acquisition cycle provides a system life-cycle approach; however, the organizational execution of those systems is largely separated into production and sustainment frameworks. This means that one acquisition team executes the production of the system and then hands over the acquisition to a separate team who executes the sustainment of that system through its life cycle. This is an important distinction between the public and private sectors; the contracts we surveyed viewed these phases as a joint effort within acquisition. The government model allows for little input from the sustainment team during production contract and when the production team hands the acquisition to the sustainment team, the sustainment team is reliant on the deals and acquisition framework setup by the production team. This directly influences how contractors view and bid on government procurements. This style of acquisition execution incentivizes contractors to underbid production contracts and make up any potential losses

from production on the sustainment effort. This can be accomplished if the government lacks necessary intellectual property rights to divert sustainment efforts away from the production contractor should performance be unsatisfactory. The private sector has moved away from the government framework and negotiates acquisitions based on a total life-cycle framework and relies on organization relationships to build trust in those negotiations. We recommend that the USAF and the DoD move toward the private sector's framework and join the production and sustainment functions when negotiating acquisitions. Future researchers can build on our study and provide and implementation plan to joint these two functions.

5. Executive Intervention

Finally, the leadership within the private sector companies we surveyed plays a pinnacle roll in the acquisition success of those firms. As stated before, the executives within the firms we talked to, actively interchange with their supply base to form lasting relational bonds of trust that they then leverage to assure a steady supply of materials for the company. Additionally, the companies recognize that these relationships allow for cost reductions between the supplier and producer firms through the unification of a strategic vision for future acquisitions. In this way, executives can guarantee future work to suppliers if they meet specific standards and based on that level of work, they receive volume discounts on purchased items. This strategic sourcing is implemented in all companies we surveyed regardless of the market they competed in. Cost reduction efforts also came in the form of redefining or reorganizing both the production and supplier company structures. These reduced redundancies, streamlined communications, and reduced operating costs while not sacrificing profitability margins. This allowed executives to make firm agreements with suppliers and flow those agreements down to the execution teams within their respective companies and programs to institutionalize the savings.

It is unclear to us at what level the military executives within the USAF and DoD interchange with our contractual counterparts to share strategic direction with them. In our experience, this information is shared at the execution or program level through official notifications such as industry days or requests for information. The USAF and DoD can gain cost savings and improve the quality of systems if it plays a more active role in

providing information to the private industry. Federal regulations maintain that the government cannot provide preferential treatment to a particular company, however there are few defense contractors who can provide the most complex defense weapon systems the USAF and DoD utilizes, and more information shared to the defense market can build trust between the contractor executives and executives within the DoD. Additionally, this strategic information can provide much needed clarity to the Congressional oversight of the government acquisition process and ensure the proper stewardship of taxpayer dollars is adhered to while providing a superior product to the warfighter. We recommend the USAF and DoD develop strategic communications guidelines and events to share future military needs with the defense industry. Additional research into the execution of this function and building on our findings could provide a framework for USAF and DoD to utilize when communicating with industry.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX ACQUISITION STRATEGY CONSIDERATIONS SURVEY

Acquisition Strategy Considerations Survey

This survey is meant to ascertain general knowledge and considerations from Air Force Contracting personnel about considerations taken during acquisition strategy.

Hello,
A team consisting of Capt's Daniel Adame and Matthew Markling, are conducting research on acquisition strategy. We are pleased that you are taking the time to answer our questions. Please understand your honest and candid answers will be taken seriously and any comments you leave will not be shared outside of the research team. If you elect to complete the survey you will be asked a series of questions related to the acquisition process. Your participation is completely voluntary, and in order to complete the survey, you must answer all questions. If you have any questions or concerns related to the survey, feel free to contact:

Dr. Latika Hartmann, NPS Principal Investigator, 310-804-1916, lhartman@nps.edu or Dr. Larry Shattuck, NPS IRB Chair, 831-656-2473, lgshattu@nps.edu

There are 42 questions in this survey

Online Survey Consent

Introduction. You are invited to participate in a research study entitled Acquisition Strategy in a Non-Competitive Environment: A Resource Dependency and Power Dependent Relation Perspective. The purpose of the research is to determine how members of the Air Force community think about Acquisition Strategy. We have no way of tracking individual responses to a particular person because we are not asking for PII information such as name or EIN. Our goal is to aggregate the information and produce summary analysis.

Procedures. Thank you for considering participating in our survey. We are NPS students who are researching the acquisition community's knowledge of the concepts of power dependency and resource dependence. This survey will be conducted online via Lime Survey and you can expect to complete the survey in 10 minutes. The research team intends to receive surveys from between 100 and 250 participants. You will not be compensated for your participation in the researchers′ survey.

Location. The survey will take place online via Lime Survey

Voluntary Nature of the Study. Your participation in this study is strictly voluntary. If you choose to participate you can change your mind at any time and withdraw from the study. You will not be penalized in any way or lose any benefits to which you would otherwise be entitled if you choose not to participate in this study or to withdraw.

Potential Risks and Discomforts. The potential risks of participating in this study are: Breach of confidentiality

Anticipated Benefits. Anticipated benefits from this study are expanded understanding of acquisition team knowledge. This information can be used for acquisition strategy to create stronger negotiating positions. You will not directly benefit from participating.

Confidentiality & Privacy Act. Any information that is obtained during this study will be kept confidential to the full extent permitted by law. All efforts, within reason, will be made to keep your personal information in your research record confidential but total confidentiality cannot be guaranteed. All records will be stored via the online access point and a secured network located at Naval Postgraduate School.

Points of Contact. If you have any questions or comments about the research, or you experience an injury or have questions about any discomforts that you experience while taking part in this study please contact the Principal Investigator, *Dr. Latika Hartmann,* 310-804-1916, lhartman@nps.edu. Questions about your rights as a research subject or any other concerns may be addressed to the Navy Postgraduate School IRB Chair, Dr. Larry Shattuck, 831-656-2473, lgshattu@nps.edu.

[]Statement of Consent. I have read the information provided above. I have been given the opportunity to ask questions and all the questions have been answered to my satisfaction. I have been provided a copy of this form for my records and I agree to participate in this study. I understand that by agreeing to participate in this research and signing this form, I do not waive any of my legal rights. *
Please choose **only one** of the following:
Yes
No

General Information

Please select the most appropriate answer for the following questions

[]What role do you have within your contracting office? *
Please choose **only one** of the following:
CO
Buyer/Administrator
Other

[]How many years of procurement experience do you have? *
Please choose **only one** of the following:
< 1 Year
1-5 years
6-10 years
11-15 years
15-20 years
21-25 years
26-30+ years

[]Are you in a supervisory or non-supervisory position? *
Please choose **only one** of the following:
Supervisor
Non-supervisor

[]What is your gender? *
Please choose **only one** of the following:
Male
Female
Other

[]What is your job title? *
Please write your answer here:

[]What is your rank or grade? *
Please choose **only one** of the following:
CGO
FGO
GS 7-9
GS 10-12
GS 13-15
Other

Acquisition Strategy Scenario Questions

[]A production company suffers from a bottle-necked resource due to a limited number of suppliers for a specialty item within the market. The producer decides to widen the specifications of this item to increase the number of possible suppliers they can work with. This action is an example of which power dependency concept? *

Please choose **only one** of the following:
Withdrawal
Extension of Power Network
Emergence of Status
Coalition Formation
Cost Reduction

[]A contractor decides to buy-out their competitors in order to gain control over a widget within the market. This contractor understood the environment they operated in. This is an example of: *

Please choose **only one** of the following:
Agency Theory
Resource Dependence Theory
Contingent Theory
Stakeholder Theory
Coalition Formation Theory

General theory questions

[]How would you rate your understanding of resource dependency theory? *

Please choose **only one** of the following:
High Level
Better than average
Average
Minimal
Do not know

[]How essential are physical resources to understanding resource dependence? *

Please choose **only one** of the following:
High Level
Better than average
Average
Minimal
Do not know

[]Organizations require a/an _____ of technical knowledge in order to mitigate resource dependence. *

Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]The value of an organizations reputation is essential to understanding resource dependence. *

Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]The reliance of other organizations in their environment are essential to understanding resource dependence. *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]Organizations require a/an _____ autonomy and discretion in order to control their environment. *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]How would you rate your understanding of power dependent relations theory? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]How would rate your understanding of the Kraljic matrix? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]How often do you utilize cost reduction methods within power dependent relations? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]How familiar are you with the balancing operations within power dependent relations theory? *
Please choose **only one** of the following:
High level

Better than average
Average
Minimal
Do not know

[]How often do you utilize the withdrawal balancing operation within power dependent relations? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]How often do you utilize the expansion of the power network balancing operation within power dependent relations? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]How often do you utilize the coalition formation balancing operation within power dependent relations? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]How often do you utilize the emergence of status balancing operation within power dependent relations? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]To secure a strategic item, how often do you use terminating a partnership to accomplish the task? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]To secure a strategic item often do you acceptance of a locked-in partnership to accomplish the task? *
Please choose **only one** of the following:
High level
Better than average

Average
Minimal
Do not know

[]To secure a strategic item, how often do you maintain a strategic partnership to accomplish the task? *

Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]To secure a leveraged item, how often do you exploit power to accomplish the task? *

Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]To secure a leveraged item, how often do you develop a strategic partnership to accomplish the task? *

Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]To secure a bottlenecked item, how often do you reduce dependence, to accomplish the task? *

Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]To secure a bottlenecked item, how often do you accept dependence to accomplish the ask? *

Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]To secure a non-critical item, how often do you pool requirements to accomplish the task? *

Please choose **only one** of the following:
High level
Better than average
Average

Minimal
Do not know

[]To secure a non-critical item, how often do you enact individual ordering efficiency to accomplish the task? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]Do you apply resource dependency theory to your work? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]How much do you apply power dependent relations theory to your work? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

Defense Acquisitions Questions

[]How familiar are you with DoD Directive 5000.01? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]How familiar are you with DoD Instruction 5000.02? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]How familiar are you with the five phases of total life cycle management? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]How familiar are you with Milestone's A, B, and C *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]How much input have you provided on any given Life Cycle Sustainment Plan? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]How much input would you say you have on the Acquisition Strategy? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

[]How much input do you have on a Justification and Approval document? *
Please choose **only one** of the following:
High level
Better than average
Average
Minimal
Do not know

Comments

[]Please add any additional comments/information relevant to the purpose of this study.
Please write your answer here:
Thank you once again for taking the time to complete this survey. We understand you have a busy schedule and the information you have provided is invaluable to our research.
09-29-2018 – 00:00

Submit your survey.
Thank you for completing this survey.

LIST OF REFERENCES

10 U.S.C § 181, Joint Requirements Oversight Council. (2018). Retrieved fromhttp://uscode.house.gov/view.xhtml?req=(title:10%20section:181%20edition:prelim)%20OR%20(granuleid:USC-prelim-title10-section181)&f=treesort&edition=prelim&num=0&jumpTo=true

Aerospace Industries Association. (2017). Measuring the impact of sequestration and the defense drawdown on the industrial base, 2011–2015. Retrieved from https://www.aia-aerospace.org/wp-content/uploads/2017/12/CSIS-Study-Fall-2017-Executive-Summary.pdf

Air Force Acquisition. (2018). Air Force Acquisition - Contracting. Retrieved from https://ww3.safaq.hq.af.mil/Contracting/

Caniëls, M., & Gelderman, C. (2005). Purchasing strategies in the Kraljic matrix—A power and dependence perspective. *Journal of Purchasing & Supply Management 11*(2-3), 141–155. https://doi.org/10.1016/j.pursup.2005.10.004

Chairman Joint Chiefs of Staff. (2015). Charter of the Joint Requirements Oversight Council (JROC) (CJCSI 5123.01G). Washington, DC: Author. Retrieved from: http://www.jcs.mil/Portals/36/Documents/Library/Instructions/5123_01.pdf?ver=2016-02-05-175042-203

Chairman Joint Chiefs of Staff. (2015). Joint Capabilities Integration and Development System (JCIDS) (CJCSI 3170.01I). Washington, DC: Author. Retrieved from: http://www.jcs.mil/Portals/36/Documents/Library/Instructions/3170_01a.pdf?ver=2016-02-05-175022-720

Congressional Budget Office. (2017). Trends in the Department of Defense's support costs. Washington, DC: Government Printing Office. Retrieved from https://www.cbo.gov/system/files?file=115th-congress-2017-2018/reports/53168-dodsupportcosts.pdf

Davis, G. (2010). Resource dependence theory: Past and future. In F. Dobbin & C. B. Schoonhoven (Eds.), Stanford's organization theory renaissance, 1970–2000 (pp. 21–42). Bingley, West Yorkshire, England: Emerald.

Defense Acquisition University (DAU). (n.d). Certifications and related programs. Retrieved from https://www.dau.mil/faq/Pages/Certifications-Programs.aspx

Defense Acquisition Workforce Improvement Act (DAWIA) of 1990

Department of the Air Force. (2015). Series 1102 Contracting Career Field Education and Training Plan (CFETP 1102). Washington, DC: Author. Retrieved from http://static.e-publishing.af.mil/production/1/saf_aq/publication/cfetp1102/cfetp1102.pdf

Department of Defense. (2007). The Defense Acquisition System (DoD Directive 5000.01). Washington, DC: Author. Retrieved from http://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/500001p.pdf

Department of Defense. (2017). Operation of the defense acquisition system (DoD Instruction 5000.02). Washington, DC: Author. Retrieved from http://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/500002_dodi_2015.pdf?ver=2017-08-11-170656-430

Department of Defense (2018, August 31). DoD Supply Chain Materiel Management Policy DoD Instruction 4140.01. Washington DC: Author. Retrieved from: http://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/414001p.pdf

Eisenhardt, K. (1989). Agency theory—An assessment and review. Academy of Management Review, 14(1), 57–74. doi:10.5465/AMR.1989.4279003

Emerson, R. M. (1962). Power-dependence relations. *American Sociological Review*, *27*(1), 31–41.

Federal Acquisition Regulation (FAR), 48 C.F.R. ch. 1 (2018).

Federal Acquisition Streamlining Act of 1994, Pub. L. No. 103-355, §§ 1202-1210, 108 Stat. 3243 (1994).

Harari, Oren (2002). The leadership secrets of Colin Powell. New York, NY: McGram-Hill.

Hillman, A. J., Withers, M. C., & Collins, B. J. (2009). Resource dependence theory: A review. *Journal of Management*, *35*(6), 1404–1427. https://doi.org/10.1177/0149206309343469

H.R. 1735, 114th Cong. (2015). Retrieved from https://www.congress.gov/114/crpt/hrpt102/CRPT-114hrpt102.pdf

Kotter, J. (1977). Power, dependence, and effective management. *Harvard Business Review*, *55*, 125. Retrieved from https://hbr.org/1977/07/power-dependence-and-effective-management

Kraljic, P. (1983). Purchasing must become supply management. *Harvard Business Review*, *61*, 109–117. Retrieved from https://hbr.org/1983/09/purchasing-must-become-supply-management

Malatesta, D., & Smith, C. (2014). Lessons from resource dependence theory for contemporary public and nonprofit management. *Public Administration Review*, *74*(1), 14–25. doi:10.1111/puar.12181

Merritt, Z. D. (2017). Defense supply chain: DoD needs complete information on single sources of supply to proactively manage the risks (GAO-17-786). Washington, DC: Government Accountability Office.

Mortlock, R. F. (2017, November 6). Cost analysis [Presentation slides]. Retrieved from https://cle.nps.edu/portal/site/980709a2-d866-4bf3-8172-e583f7a20de9/page/f5b9360a-6b37-4ee5-812f-fa1b400649f0

National Defense Authorization Act for Fiscal Year 2016, Pub. L. No. 114-92, §§ 821-824, 129 Stat. 726 (2015, November 25). Retrieved from https://www.congress.gov/congressional-report/114th-congress/senate-report/49/1

Office of the Under Secretary of Defense for Acquisition, Technology, & Logistics. (2007). The defense acquisition system (DoD Directive 5000.01). Washington, DC: Author. Retrieved from http://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/500001p.pdf

Office of the Under Secretary of Defense for Acquisition, Technology, & Logistics. (2017). Operation of the defense acquisition system (DoD Instruction 5000.02). Washington, DC: Author. Retrieved from http://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/500002_dodi_2015.pdf?ver=2017-08-11-170656-430

Pfeffer, J. (2013). Resource dependence theory. In E. H. Kessler (Ed.), *Encyclopedia of management theory* (Vol. 1; pp. 661–668). Thousand Oaks, CA: SAGE. http://dx.doi.org/10.4135/9781452276090.n230

Pfeffer, J., & Salancik, G. R. (1978). The external control of organizations: A resource dependence perspective. New York, NY: Harper & Row.

Pfeffer, J., & Salancik, G. R. (2003), The external control of organizations: A resource dependence perspective. Stanford, CA: Stanford University Press.

Schwartz, M., Sargent, J. F., & Mann, C. T. (2018). Defense acquisitions: How and where DOD spends its contracting dollars (CRS Report No. R44010). Retrieved from Congressional Research Service website: https://fas.org/sgp/crs/natsec/R44010.pdf

Ulrich, D., & Barney, J. (1984). Perspectives in organizations: Resource dependence, efficiency, and population. *The Academy of Management Review*, *9*(3), 471–481. doi:10.2307/258287

Woods, W. T. (2017). Contracting data analysis: Assessment of government-wide trends (GAO-17-244SP). Washington, DC: Government Accountability Office.

Acquisition Research Program
Graduate School of Business & Public Policy
Naval Postgraduate School
555 Dyer Road, Ingersoll Hall
Monterey, CA 93943

www.acquisitionresearch.net