

TASK SPECIALIZATION IN THE PUBLIC ADMINISTRATION PROFESSION:  
A JOB ANALYSIS OF PUBLIC PROCUREMENT PRACTITIONERS

by

Joshua M. Steinfeld

A Dissertation Submitted to the Faculty of  
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This dissertation was prepared under the direction of the candidate's dissertation advisor, Dr. Clifford McCue, School of Public Administration, and has been approved by the members of his supervisory committee. It was submitted to the faculty of the College for Design and Social Inquiry and was accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

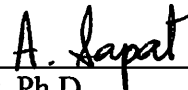
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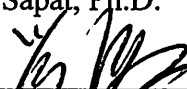
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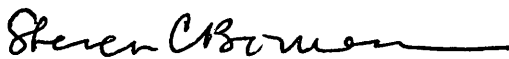
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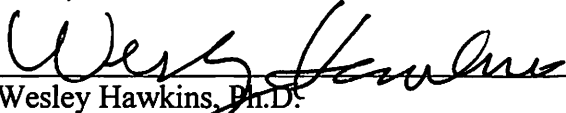
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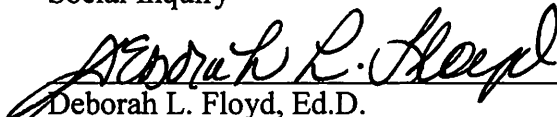
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## ABSTRACT

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This dissertation examines task specialization in the public administration profession through studying the job tasks that a public procurement practitioner performs, manages, and both performs and manages. The purpose of this dissertation was to establish a baseline to benchmark what these practitioners actually do on their jobs. Factor analysis was used to study a data set of 2,549 respondents that were administered a survey by the Universal Public Procurement Certification Council (UPPCC) in 2012. The research question to be answered involved addressing what job tasks public procurement practitioners perform, manage, and both perform and manage. Hypotheses were examined that predicted task specialization existing within public procurement to the extent that practitioners in more senior job positions display more task specialization and that practitioners from larger organizations also display more task

specialization. A review of literature discusses the alternative perspectives on what constitutes professionalism in the public sector. The reasons for focusing on public procurement professionalism were subsequently presented through the literature. The various views of what entails professionalism in public administration were discussed as to responsibility (Stivers, 1994), sociological issues (Simon, 1947), constitutional issues (Lowi, 1995; Rohr, 1986), technical specialization and empirical rigor (Parsons, 1939), as means of contextualizing the nature of public administrators' roles and responsibilities in conjunction with the job tasks that are executed.

Factor analysis was conducted on 75 job tasks in order to identify relationships between practitioner job tasks for the purposes of finding out what it is that public procurement practitioners actually do for their work. The job tasks found to share relationships may be grouped together for further inquiry into the nature of the relationships between job tasks and overarching competency areas of related job tasks. Additionally, factor analyses were conducted to identify relationships between job tasks in public procurement and control variables such as organization size and job position, which were predicted to impact whether or not practitioners perform, manage, both perform and manage, or do neither, for each of the job tasks surveyed.

## DEDICATION

I dedicate this dissertation project to family. I thank my family for providing me books for my research so that I had access to literature. Also, I appreciate those who made sacrifices along with me in pursuit of knowledge and scholarship; without your support it would not have been possible.



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## CHAPTER 1: INTRODUCTION

Practitioner task specialization is fundamental to studying the attributes of professionalism and factors related to politicization. Parsons (1939) differentiates professionalism by technical specialty and empirical rigor, specifying that the unique characteristics of professionalism involve task-specific capabilities related to a single specialization as well as professionals' consistent approach to task completion regardless of external factors being present.

A major challenge of identifying task specialization in public administration is determining a theoretical framework that captures the scientific elements underlying task specialization. In public administration, there has been longstanding discourse regarding the context and validity in examining task specialization. Public administration has been proclaimed to resemble business, science, and art, and each view of public administration has different implications for the meaning of task specialization (Lynn, 1996). Wilson (1887) associates professionalism in public administration to business, where managerial efficiency is the guiding criterion for government operations. On the other hand, professionalism in public administration can be viewed as pragmatic, highly interpretive, and epistemological, as if functioning more like a craft of inquiry than a means to an end (Keynes, 1904; Price, 1878; Yanow & Schwartz-Shea, 2006).

Early public administration scholars had faith in the power of reason to order human affairs and its role in achieving progress (Spicer, 1995). These

scholars were greatly influenced by doctrines such as utilitarianism, legal realism, positivism, and pragmatism (Spicer, 1995). According to this technical rationality, the division of work affects both the efficiency with which a given set of tasks is carried out and upon the nature of the goals that are achieved (Simon, Thompson, & Smithburg, 1950/1991). This mechanistic view of the work in public administration has been challenged by public choice theorists, through quantification of practical examples demonstrating that modern administrative practices may lead to various phenomena or dialectical (trialectical) arrangements in public administration (Buchanan & Tullock, 1962; Downs, 1967; Olson, 1971; Reisman, 1990).

Before offering such sociological or political perspectives, the actual tasks of practitioners need to be identified; what it is that public administration professionals actually do in terms of their work. The Office of Personnel Management (2016) states that to study professions in the public sector, a job analysis can be conducted by examining the tasks performed on the job. For this dissertation, a job analysis was utilized to compute data from the 2012 Universal Public Procurement Certification Council (UPPCC) job study to identify the job tasks that practitioners perform and manage in public administration. Public procurement practitioners, as a subset of public administrators, were of focus in this study because of the wide scope and breadth of roles and responsibilities assumed through the occupation (Steinfeld, McCue, & Prier, 2016), similar to the complexity of public administration considering its many subfields, such as political science, organizational behavior, public policy, budgeting, psychology,



and more. In public procurement, there are also numerous subareas constituting the practice such as economics, finance, accounting, operations management, and supply management. A factor analysis was conducted on 75 job task variables across 2,593 public procurement practitioners to study the job tasks of public administrators.

### **Theoretical Framework**

There are numerous theoretical concepts that seek to describe public sector professionalism. It is believed that the stature of public administration professionals is largely dependent on the ideas, institutions, and policies that constitute public administrators' approaches to governing (Harris & Milkis, 1989). Within these constraints, Ingraham and Rosenbloom (1989) proclaim that the *politics* resulting from public administration professionalism should not be concentrated on political action or equity but rather the re-creation of confidence in the expertise and competency of public administrators to become politically neutral administrators. For example, Schneider (1992) believes that public administration professionalism and politics do not mix. Professionalism is the art of problem solving or finding the correct answer whereas politics itself deals with balancing interests (Schneider, 1992). Brint (1994) further emphasizes expertise in public administration by connecting the field of study to the idea of expert knowledge and instrumental effectiveness of specialized, theoretically grounded knowledge without concern to service in the public interest. The handy public administrator-with-a-toolbox model of public administration was exacerbated with the prevalence of new public management (NPM) during the millennial decades

that saw widespread movements toward outsourcing and privatization (Bozeman, 2007).

Niskanen (1971) suggested that governments use competitive bureaus and private firms to provide public goods and services in areas where governmental efficiency and effectiveness is lacking. It is suggested that outsourcing, contracting out, and privatization are government responses to public administrators' lack of expertise and knowledge (Niskanen, 1971). Furthermore, beginning in the 1980s and 1990s, the formation of public-private partnerships (PPPs) and public-private innovation (PPIs) established the necessity of public administrators to consider stakeholder interests such as business private investors (Cooper, 2003; Kettle, 2002). Of the countless examples of PPPs and PPIs at federal, state, and local levels of government, some commonly outsourced public goods and services include aerospace, highway construction, and waste management. While privatization of the aforementioned public goods and services appears to be innocuous, there are countless examples where government contracting has led to public service failures or civil rights abuses; such as in penitentiaries, public construction projects, and health care.

Pollitt (1993) and Hood (1998) cite numerous issues with NPM that focus on the cultural, political, and stylistic elements inherent to managerialism by public servants and those being governed (Jordan & Wheedon, 1995). Pollitt (1993) and Hood (1998) acknowledge that experimentation, measurement, and evaluation are necessary sciences for the efficiently functioning administration,

which is the common view in NPM, by producing numerous examples of cost overruns and misspending by government, such as the misappropriations related to construction at London's Heathrow airport. However, Pollitt (1993) and Hood (1998) duly note that these public management failings are the result of the principal-agent relationship that exists in these arrangements, rather than managerial limitations regarding the science of administration.

In spite of the widespread adoption of NPM across government agencies, Sanders (1993) denotes the essence of professionalism as:

A professional is one who is competent at some difficult task; the term 'profession' describes either the pursuit of the work in question, or the aggregate of persons doing that work; 'professionalism' and other cognates must similarly involve reference to this central idea. (p. 86)

Accordingly, task specialization refers directly to the set of handy skills, managerial competencies, and job activities that the professional performs and manages. Challenges to this approach argue that accepted administrative principles commonly utilized to achieve efficiency such as specialization, unity of command, span of control, and organization by purpose, process, clientele, or place, cannot be validated (Simon, 1946).

In light of the issues surrounding NPM (Hood, 1998; Pollitt, 1993), and challenges confronting its administrative principles (Simon, 1946), this dissertation attempted to bring attention to the job tasks public administrators once cherished by identifying the commonalities of job tasks performed and managed by practitioners.

## **Overview of the Problem and Research Focus**

This dissertation examined task specialization in the profession of public administration by studying public procurement practitioner responses to statements regarding whether they perform, manage, or both perform and manage each of 75 job tasks. The research question to be addressed was: What job tasks are performed, managed, and both performed and managed by public procurement practitioners according to job position and organizational size? To answer the research question, a series of factor analyses was conducted on 75 job task variables and a total of 28 factor analyses were run. The first four comprised a baseline of public procurement specialists. Then there were three for each job position to determine the relationships between performing job tasks only; three for each job position whose practitioners manage only; and three for each job position to see which respondents reported both performing and managing. Because there were five job positions, there were a total of 15 factor analyses for job positions. In addition, there were three for each organizational size by performance only; both perform and manage; and manage only (nine total). For each factor analysis, the job tasks sharing relationships were considered to be those of public procurement since the sample consisted of public procurement practitioners. Related job tasks were indicative of a robust measure of the job tasks actually performed, managed, and both performed and managed by a practitioner. Furthermore, the nature of the job tasks could be studied through factor analysis based on the groupings that emerged according to which job tasks shared relationships with common latent variables (factors).

The manner in which, or combination thereof, job tasks related to each other by means of being correlated to a common latent variable, shed light on the job tasks that are performed, managed, and both performed and managed by public procurement practitioners. In addition, to get better understanding of the tasks performed, managed, and both performed and managed, two control variables were introduced. The first looked at job position and tasks that were performed, managed, and both performed and managed. The purpose was to determine whether or not there were differences between higher ranking job positions and the tasks that were performed, managed, and both performed and managed. The second control variable helped to determine whether or not job tasks performed, managed, and both performed and managed differed based on the size of the organization.

This study utilized survey data from a 2012 study administered by the UPPCC to 2,593 public procurement practitioners in the United States. The empirical research was important to public administration for the purposes of examining what it is that practitioners actually do in terms of their job tasks and understanding how job tasks may be related based on job position and the size of the organizations in which practitioners work. By understanding the job tasks in public procurement, standards can continue to be established for practitioners to spend public funds effectively in providing the most value possible and to manage organizational resources for sustainability.

## **Intellectual Merit**

The research study has intellectual merit based on several arguments. Of course, there is a burgeoning interest in identifying what it is that public administrators actually do and how job tasks are related to professionalization. Public administrators are being seen increasingly as middle managers known for outsourcing and privatizing services, perhaps due to a perceived lack of practical abilities. This study contributes to the body of knowledge regarding the job tasks that public administrators perform and manage.

There is intellectual merit in describing the manner in which performance and management of job tasks in public administration are related, that is, the combination of job tasks that share relationships. Public administrators do not complete job tasks in isolation. It is expected that job tasks get completed in tandem or groupings such that combinations of job tasks shed light for future research, including research into how practitioners complete job tasks pursuant to greater functions or organizational objectives.

This study addressed the fact that procurement practitioners, like public administrators in general, have been developing their own sets of standards for the field through the literature (Buffington & Flynn, 2004 Dominick & Lunney, 2012; McCue & Pitzer, 2005; Thai, 2001), and certifications (such as Senior Professional in Supply Management [SPSM], Qualified Member of Chartered Institute of Procurement and Supply [MCIPS], Certified Professional in Supply Management [CPSM], Certified Public Procurement Buyer [CPPB], Certified Public Procurement Officer [CPPO]), yet empirical research on the job tasks of

the field and the relationship between field-specific job tasks in procurement is lacking. Essentially, there has been no published study that looks into the job tasks actually performed, managed, and both performed and managed by public procurement practitioners. Along with the 2007 UPPCC study, this is the only comprehensive study administered and reported upon that details the job tasks performed and managed by procurement practitioners, at least to the extent of the large sample of respondents from the public sector (2,549) and professional attributes (certifications, years experience, association membership) of the survey respondents. The large sample provides a plethora of data to be analyzed, and the professional attributes of survey respondents allow for data to be gathered that reflect details from practitioners who are in a good position to provide information regarding job tasks actually performed and managed in public procurement due to their high level of involvement in the field. Presently no scholarly literature on the breadth of job tasks managed in public procurement across a large sample exists

Finally, the distinctions between performing and managing job tasks were examined. The act of managing connotes an element of supervision, and it is interesting to investigate which combinations of job tasks are completed in supervisory roles, and which job positions are held by these practitioners. Gaining an understanding of which job positions are more inclined to managing as opposed to performing certain job tasks, in addition to factors of organization size, provides insight regarding inquiry into organization behavior, task delegation, and roles and responsibilities of practitioners.

## **Broad Impact**

This dissertation may impact broadly both the field of public administration and the inclusive subfield of public procurement in five ways. First, the broader field of public administration may be impacted by this study because it is empirical and quantitative, which differentiates the research contained herein from the available research on task specialization in public administration. Secondly, this study has broad impacts because the field of public procurement is differentiated to a large extent, similar to the breadth of public administration, whereby public procurement practitioners identify themselves across numerous job positions and scope of roles and responsibilities. Public procurement practitioners represent a diverse set of job positions within the public procurement arena, such as chief procurement officer, risk management supervisor, contract administrator, buyer, and finance/accounting manager, to name a few (see Figure 1). Therefore, task specialization for numerous practitioner job descriptions within public procurement, as a subfield of public administration, may be identified.

Third, the identification of job tasks in public administration and the relationship between job tasks may have the impact of improving practitioner quality and consistency. This is important because governments have limited resources and public procurement plays a central role in use of resources and related decision making with respect to provision of public goods and services. Fourth, identifying task specialization in public procurement will help to improve the recognition and status of the area of study and may eventually increase the



profession's ability to attract talented individuals and scholars. This last aspect of importance is dependent on the fifth major impact that this study may have, namely the development of formal education and training programs in public procurement.

Public procurement, and procurement in general, may be considered understudied in terms of its presence at formal educational institutions in academia, especially in the United States. In order to develop formal education degree programs, and advance the credentialing systems in place, the job tasks of procurement practitioners must be identified. Additionally, the relationship between job tasks being performed or managed together provides insight into the competencies necessary for completion of particular procurement jobs.

### **Problem Statement**

The main problem statement addressed was to identify the job tasks that are performed, managed, and both performed and managed in public procurement. Results of the factor analysis subsequently provided insight into the relationships between job tasks that are performed, management, and both performed and managed by a practitioner based on job position and organizational size. This analysis provided a mapping of job task completion by public procurement practitioner job position and organization size to provide future researchers with a baseline to advance the profession. The job tasks that are found to be related through factor analyses are considered to be those of public procurement since the sample consists of public procurement practitioners

and these job tasks completed in groups reflect a robust measure of the job tasks actually completed as a function of the procurement organization.

In order to establish an initial baseline, factor analyses were conducted on 75 job task variables—one factor analysis for each of three task completion response categories for a given practitioner: perform, manage, and both perform and manage a given job task. The job tasks that are found to be related through the *perform* factor analysis are considered to be those *performed* in public procurement since the sample consists of public procurement practitioners and because job tasks that are performed by the same practitioners are indicative of a robust measure of the job tasks actually performed. More specifically, job tasks that are performed in combination or groupings by a practitioner are indicative of a relationship between job tasks such that these job task bundles may constitute some broader functional objective dealing in procurement. The job tasks that are found to be related through the *manage* factor analysis are considered to be those *managed* in public procurement since the sample consists of public procurement practitioners and because job tasks that are managed by the same practitioners are indicative of a robust measure of the job tasks actually managed. The same logic applies for the job tasks that a practitioner both *performs and manages*. Examining practitioner job tasks is a way to identify the actual work of public administrators and to establish areas of expertise for the profession. The reason there is a need for examining professionalism in public procurement and administration is because the field of practice is seeking recognition and autonomy so that it can implement best practices in training,

education, and credentialing, in addition to the desire for continuous improvement in the provision of public goods and services. More broadly, public administration has been struggling to define itself from similar fields such as public policy or political science, as well as searching for substance in the midst of a highly interpretive, political, and socially oriented field of study. At the present time, it is still inconclusive as to what tasks are characteristic of the public administration professional or the public procurement specialist, and the nature of the relationships between job tasks completed and required competency areas.

### **Research Question**

What job tasks are performed, managed, and both performed and managed by public procurement practitioners according to job position and organizational size?

### **Overview of the Methodology and Hypotheses**

The dissertation's research statement was to identify the job tasks performed, managed, and both performed and managed by public procurement practitioners and to subsequently provide insight into the job tasks of the public administration profession. A factor analysis was conducted on 75 job task variables in which practitioners reportedly perform, manage, both perform and manage, or do neither for each job task. Factor analysis was utilized because it is a statistical technique that enables relationships to be drawn between variables. Also, the 75 the survey consists of 75 job tasks because these were the job tasks devised by subject-matter experts (SMEs) who aimed to delineate the prevalent

job tasks in public procurement. The job tasks that are found to be related through the factor analysis are considered to be those of public procurement since the sample consists of public procurement practitioners and because job tasks that are completed by the same practitioners are indicative of a robust measure of the job tasks actually completed. This study is important to public procurement and administration for the purposes of examining what it is that practitioners actually do in terms of their job. A review of literature explored the body of knowledge and theory as it pertains to task specialization in the profession of public administration. The exploratory and descriptive methodologies utilized in this dissertation follow an empirical approach to studying survey responses of public procurement practitioners.

Prometric, Inc. administered the 2012 UPPCC survey to 2,593 public procurement practitioners consisting of a task completion statement for each of 75 job tasks. The survey was sent to 30,980 valid email addresses across 17 surveyed practitioner job positions within major public procurement associations in the United States. Figure 1 shows the self-described job positions in the survey and their grouping into respective job classifications (Prier, McCue, & Steinfeld, 2013).

<b>Chief Procurement Officer (CPO)</b>	<i>CPO, Director-level Executive Managers of Procurement</i>
<b>Procurement Manager</b>	<i>Assistant Director, Program Manager, Program Supervisor</i>
<b>Procurement Analyst</b>	<i>Contract Administrator, Finance/Accounting Manager, Risk Management Supervisor, Compliance Officer, Consultant, Legal/Admin Counsel</i>
<b>Buyer</b>	<i>Intermediate Buyer, Entry-level Buyer</i>
<b>Procurement Assistant</b>	<i>Administrative Support, Warehouse Inventory Manager, Warehouse Inventory Support Staff</i>

Figure 1. Procurement practitioner job positions grouped by job classification (Prier et al., 2013).

As part of the survey, respondents were asked to “Indicate whether you perform or manage the task in your current role.” The responses were situated according to the nominal measures: 1 = *perform*, 2 = *manage*, 3 = *both perform and manage*, 4 = *neither*. The independent variables were recoded to dummy values accordingly so that when looking at job tasks performed, the data are entered into IBM SPSS as 1 = *perform*, 0 = *manage*, 0 = *both perform and manage*, 0 = *neither perform nor manage*. For the purposes of factor analyzing the data with respect to job tasks managed, the variables were recoded as: 0 = *perform*, 1 = *manage*, 0 = *both perform and manage*, 0 = *neither perform nor manage*. When looking at job tasks that a practitioner both performs and manages, the job task variables were recoded as 0 = *perform*, 0 = *manage*, 1 = *both perform and manage*, 0 = *neither perform nor manage*.

Factor analysis was an appropriate statistical technique to utilize when dealing with nominal variables (Bartholomew, Knott, & Moustaki 2011). Since the independent variables utilized herein were dummy variables (a value of 0 or 1),

any other correlational techniques would not suffice. For example, when applying generalized least squares methodologies such as linear regression, dummy variables will be equidistant from the best-fit line, and therefore will not provide the researcher with implicative results. For factor analysis, nominal variables work quite well, especially when there are numerous (75) independent variables in which the incidence of actually doing a particular job task (a value of 1) can be examined with respect to the incidence of actually doing another particular job task. For the exploratory factor analyses conducted here, it was important to first examine whether or not practitioners actually do these job tasks before assigning weightings or intensities as is done through interval level variables.

There are two important control variables that were examined herein. The distinctions between a practitioner performing, managing, or both performing and managing a given job task may be influenced by job position and organization size. As a result, the following hypotheses were provided:

$H_1$ : There is a relationship between job tasks that are performed, managed and both performed and managed based on job position.

$H_2$ : There is a relationship between job tasks that are performed, managed and both performed and managed based on organizational size.

Regarding job position, it was expected that practitioners who only perform; those who both perform and manage; and those who only manage job tasks was contingent upon job position. If there was no relationship between what practitioners actually do based on job positions, and other conditions remained the same, there was a lack of evidence consistent with professionalization in

public procurement (McCue, Prier, & Steinfeld, 2016; Prier et al., 2013; Steinfeld et al., 2016). As one example, if public procurement is to reflect a profession for which practitioners have task specialization and expertise (Niskanen, 1971), then it would be expected that practitioners in more senior job positions not only complete a more expansive set of job tasks, but are inclined to managing, as opposed to performing or both performing and managing a job task. While it may seem that more senior practitioners would assume management positions, there is no data to suggest that more senior practitioners necessarily manage as opposed to perform when it comes to completing job tasks. When considering the procurement organization, it is expected that practitioners who only perform; those who both perform and manage, and those who only manage job tasks is contingent upon organizational size. It is expected that public procurement practitioners from larger organizations more frequently perform, as opposed to manage or both perform and manage, since there are more practitioners and therefore each practitioner can assume a more specialization role. Also, larger organizations may be more complex and therefore require more specializations to address these enterprise complexities. If there is no relationship between what practitioners actually do in terms of scope of job tasks, as well as prevalence of mode for task completion (perform, manage, or both perform and manage) based on the size of the organization, and all else remains the same, there is a lack of evidence for professionalization in public procurement. This argument is based on the fact that public administrators' specialization in their scope of job tasks should become more narrow (decrease) as an organization's size increases,

which would be less likely if public procurement practitioners were assuming middle manager roles that lack task specialization (Pollitt, 1983).

There are some methodological issues that addressed in the dissertation as well. For example, the study lacks randomness because the procurement associations that were given the survey were arbitrarily chosen by the UPPCC. There are numerous procurement associations, especially at the state and local levels, but the UPPCC perhaps chose to administer the survey to major procurement associations because of a desire to streamline distribution of the survey and to capture data from practitioners who are involved in the major public procurement associations. Also, the study is nonrandom because there is no known data from the actual population with which to compare data from the sample.

The nonrandomness results in the potential for selection bias. Perhaps the respondents who are very active in their roles and take on more responsibilities are those that are more likely to complete the survey—practitioners who regularly assume a large workload or possess more highly valued knowledge and skills of job tasks are more likely to take on the activity of completing a survey. As a result, perhaps the management and perception of job tasks across the subjects is higher than it exists in the population. To an extent, this form of selection bias exists in all social science surveys, where it could be said that the survey respondents reflect a segment of the population that is more apt to take surveys because they have more energy or the willingness to commit the time and effort. Additionally, internal validity is lacking because responses are not measured with



regard to time. More specifically, it is difficult to know whether there are extraneous confounding variables that be impacting the results simultaneously.

Finally, secondary data analysis issues must be considered. Responses to survey questions involving job tasks with legal or policy factors such as establishing cooperative procurement, conducting pre-bid conferences, implementing sustainable procurement, and disposing of obsolete equipment, as examples, could be biased based on desire to appear conforming to public procurement and contracting laws set forth through policy manuals and guidelines such as the American Bar Association's Model Procurement Code for State and Local Government and the Model Codes for Local Governments.

### **Chapter Summary and Looking Ahead**

The reasons for engaging this project of study are described in the introduction, including an overview of the various views of professionalism in public administration and the implication for task specialization. The theoretical framework is presented, which focuses on the limitations of NPM and the subsequent need for expertise and task specialization to be displayed by public administrators. The overview of the problem and research focus is presented as the need to identify the job tasks of public administration, by focusing on public procurement, and to gain insight into the nature of the relationships between job tasks performed, managed, and both performed and managed by job position and organizational size. The intellectual merit is presented as the need to contribute an empirical examination of public administration task specialization in order to build upon the current discourse in public procurement and

administration with respect to what constitutes task specialization and professionalism. Furthermore, the results of the study aim to gain a better understanding of distinctions between performing and managing of job tasks, which would assist in development of education, training, and best practices. The broad impact was also discussed as the desire to better understand task specialization by public procurement practitioners in order to identify what they empirically do based on job positions and the size of the organizations in which they work. The problem statement is detailed to involve the identification of practitioner job tasks and how they are related empirically. The research question was provided as a way to guide the research inquiry by which hypothesis testing attempted to provide answers. Finally, the overview of methodology and hypotheses were presented in order to guide the empirical analysis and quantitative methods. The following chapter provides a review of literature dealing with professionalism in public administration and public procurement. First, professionalism in occupations in general and professionalism in public administration is discussed. Then, criteria for professionalism in public administration are set forth. Subsequently, specialization in public administration and the reasons for studying professionalism in public procurement are presented through the literature. Finally, public procurement occupational duties are noted as a means for understanding the context of the analysis to follow in the third chapter.

The third chapter explains the research design. Here, the research question and hypotheses are restated as well as the model and assumptions.

Next, secondary data issues are addressed such as survey data reliability, response and nonresponse bias, and generalizability. The UPPCC survey instrument is also discussed, in addition to the data and variables. This chapter concludes with the methodology, which details the process for factor analysis, including analytical rotation procedures and any limitations of the study.

The fourth chapter presents findings for the baseline of all public procurement practitioners surveyed. Here, demographics of survey respondents are provided such as gender, age, and job descriptions. Also, descriptive statistics are provided for all survey respondents according to job tasks performed, managed, and both performed and managed. Next, the results of factor analyses for job tasks performed, managed, both performed and managed, and performed or managed are reported to serve as a baseline of job tasks in public procurement for the purposes of mapping the levels of task specialization according to practitioner job position and organization size.

The fifth chapter reports and discusses results of the factor analyses for surveyed practitioners at each job position. The findings provide a comparison discussion of job tasks performed, managed, and both performed and managed by practitioners at each job position as compared to the baseline of all practitioners surveyed. In the sixth chapter, the results of the factor analyses for surveyed practitioners at each size of organization (small, medium, and large) are reported and discussed. A comparison discussion is presented that looks at job tasks performed, managed, and both performed and managed by

practitioners surveyed from each size of organization as compared to the baseline of all practitioners surveyed.

The seventh chapter serves as the conclusion. The conclusion summarizes the major takeaways and discusses implications of the findings to theory, research, and practice. Also, areas for further research are discussed which emphasize the importance of this dissertation in serving as a starting point for studying professionalism in public procurement.

## CHAPTER 2: REVIEWING PROFESSIONALISM AND TASK SPECIALIZATION

This section provides a review of literature dealing with professionalism in public administration and public procurement. A discussion of the scientific orientations present in administrative science and inquiry are also discussed. First, a discussion of how occupations are organized and how occupations become professions is presented. Second, professionalism in public administration is discussed through a historical analysis of the various phases that the literature on professionalism has gone through, from administration-as-business and scientific management to more sociological approaches including political orientation, common ways of perceiving, and constitutionalism. Third, the public administration dichotomy in which public administration is said to be separate from politics, and its subsequent break down in the literature is highlighted. Next, the criteria for professionalism are presented including the presence of barriers to entry, body of knowledge and theory, and academic programs. Fifth, the occupational duties directly related to public procurement are discussed to gain an understanding of the roles and responsibilities prevalent in the field. Subsequently, a discussion of why public procurement is the ideal field of study for examining professionalism in public administration is explained, based on the parallels that public procurement shares with public administration

in terms of argumentation that reflects both apolitical functions and politicization of bureaucratic actors.

### **Professionalism in Occupations**

The term profession describes an occupation that has a high level of professionalism (Andersen & Pederson, 2012). Professionalism is thus ultimately “a continuous occupational variable” since some occupations have achieved higher levels of professionalism than others (Andersen & Pederson, 2012, p. 46). Each occupation has its own unique history and possesses a pattern of structural and ideological features (Levi-Strauss, 1966).

Two major considerations impel an individual to choose his/her occupation: the income it may bring and the social status with which it is traditionally associated. With the first, the individuals may sustain their lives. Because of the second, society evolves a scale of values which are identified with the folkways and mores and which find expression in the social hierarchy of occupations. (Chen, 1947, p. 43)

An individual’s desired values and expression, and those associated with the occupation of choice, are reflective of self-image. A person’s self-image is defined as a set of attitudes, beliefs, and opinions held by a person of himself or herself (Faunce, 1968). In turn, a person’s self-image is dependent upon the support, encouragement, recognition, and acceptance of those with whom that actor shares a relationship (Salaman, 1974). Typically, we build relationships with the people we work with; the people who share our daily experiences and can relate to our interests, endeavors, and sacrifices.

Accordingly, Freidson (1970) states an occupation exists when workers perform the same activities and devise common methods that are used by new recruits. In this manner, established practices become affiliated with specific job tasks inherent to a particular occupation. Hughes (1958) observes that new occupations recruit from existing occupations leading to issues regarding formalized training for the new occupation that eventuates into a more formal credentialing system placing clearer boundaries and ways to create barriers to entry into the occupation (see also, for barriers to entry: Christensen, 1994; Kline, 1981).

New occupations develop when workers are needed by employers to do tasks that have not been done before or when necessary tasks are sufficiently different from what exists and it becomes the primary job of enough workers (Crosby, 2002). Economic expansion, population growth, technological innovation, intellectual advancement, and changes in trends could all have the effect of creating new tasks. Yet, it is particularly important for the development of an occupation that individuals from different backgrounds perform similar services (Blum, Roman, & Tootle, 1988).

The process dictating the way role bundles are made up and organized, the power exercised by those occupying roles, and how power is utilized are thus critical for better understanding the division of occupations (Freidson, 1985). The grouping together of role bundles, vis-à-vis declaration of the occupied roles as *occupations*, largely determines how workers are viewed in the labor force and by social networks. To begin with, the conceptions and identities that persons

form of themselves are based upon their vocations, the role they seek to play in communities and social groups, and the recognition and status which society accords to actors in these roles (Park, 1931). And, people's identities are not the result of any one single role because society understands people as multiple-role-performers rather than as a person with a particular role (Goffman, 1969). Especially in public administration, an interdisciplinary field consisting of several subfields ranging from budgeting to sociology to political science, the concept of professionalism applies to performers who assume a multitude of roles and traditions.

### **Professionalism in Public Administration**

For the past century, public administration has undergone a search for a core body of theory and skill to determine whether elements of professionalism exist in the field that would constitute evidence of a profession (Pugh, 1985). The Pendleton Act of 1883 is one early case in point, which provided a legal arrangement for professionalism in the public sector by the implementation of competitive exams, elimination of mandatory campaign contributions, and political neutrality (Therault, 2003). Despite the Pendleton Act's accomplishment in achieving civil service reform by striving to rid the public administration of patronage, many challenged the Act's intent to establish meritocracy rather than providing party professionals with another weapon for party power (Skowronek, 1982).

Wilson's 1887 essay and its mantra, "administration is a field of business" (p. 209), the idea that public administrators should act like professionals or that



certain values or methods are characteristic of professionals, has been at the forefront of administrative scholarship and debate. It represents perhaps the first attempt toward articulating the ideology and theoretical constructs of professionalism in public administration. The science of public administration is concerned with the effective and efficient performance of the machinery of government apart from the “hurry and strife of politics” or the “debatable ground of constitutional study” (Wilson, 1887, pp. 209–210). Public administration was known to deal with the execution of policies enacted by political bodies (Goodnow, 1900).

Taylor (1919) attempted to instill standards into administrative practices stating that: “Instead of having only one way which is generally accepted as a standard, there are in daily use, say, fifty or a hundred different ways of doing each element of the work” (p. 31). Like Taylor, Weber (1919) set forth an ideal type bureaucracy where organizational practices, by means of hierarchy, aimed to improve efficiency. White (1955) described public administration as “the management of men and materials in the accomplishment of the purposes of the state” (p. 2). Dimock (1933) offered a similar definition to be “a study of powers and problems, organizations and personnel, and the methods of management involved in carrying out the laws and policies of government authorities” (p. 261).

Subsequently, public administration scholars began viewing professionalism in different ways. Simon (1947) believed that public administration should focus on the pure science of human behavior to raise a more solid theory of psychology. Appleby (1949) viewed public administration as

policy making and a political process that achieves and controls governance. Mosher (1956) defined public administration as an area of interest rather than a discipline due to its cross-disciplinary nature, whereby a variety of methods and approaches must be implored. Simon (1957) later cites decision making to be the heart of administration, as derived from the logic and psychology of premises that are accepted as bases for choice. Waldo (1968) emphasized the legal aspects, citing a need to strive toward finding ways so that creating and interpreting the law can be done *correctly, wisely, or in the public interest*. In tangent with the legal framework, Riggs (1968) related public administration professionalism to the ability to engage theory, science, and comparative study of government as a total system. Mosher (1978), from a sociological standpoint, identified the need to inculcate an orientation to the world such as *common ways of perceiving and structuring problems and of attacking and solving them*. Yet, different combinations of theory and value orientations create varied interpretations consisting of preferred political styles, public issues, and qualities of citizenship (Elazar, 1984).

More recently, it has been the efficacy of constitutional arrangements involving bureaucracy in the delivery of public goods that has been understood as a major challenge for improving the behavior of public administration professionals (Buchanan, 1985; Ostrom, 1974). No longer are expertise and knowledge held by public officials (Niskanen, 1971). In the future, the stature of public administration professionalism will be largely dependent on the ideas, institutions, and policies that constitute public administrators' approaches to

governing (Harris & Milkis, 1989). The problem for public administrators is that their attention is devoted to practical, day-to-day operations of government, but their responsibilities should include concern for enhancing the civic character of policy participants (Hart, 1989). However, mantras such as efficiency and effectiveness are often favored over responsibility or inclusion (Burke, 1989; McSwain & White, 1989). For these reasons, some have argued that public administration can be viewed as a vocation, or a calling, instead of a job or career (Wolf & Bacher, 1989). Argyris (1991) cites the continual designing and action-orientation of public administrators on the basis of *theories-in-use* that may be tacit or taken for granted. More expansively, Terry (1995) cites the leadership roles of the public administrator in a merit based career service with respect to the mission, values and collective institutional goals.

Differently, Lowi (1979) felt as though political factors and pluralism in general diminished public administrators' rational ordering of tasks and routinization as compared to the ideal of a neutral civil servant. Rohr (1986) and Lowi (1995) base professionalism in public administration on the constitutional form and heritage to which the bureaucracy adheres. From a more traditional standpoint, Ingraham and Rosenbloom (1989) believe that the politics resulting from public administration professionalism should not be concentrated on political action or equity but rather the re-creation of confidence in the expertise and competency of public administrators to become politically neutral administrators. As a result, Schneider (1992) believes that public administration professionalism and politics do not mix. Professionalism is the art of problem solving or finding

the correct answer whereas politics itself deals with balancing interests (Schneider, 1992). Brint (1994) further emphasizes the expertise, as opposed to the political view, of public administration, by connecting the field of study to the idea of expert knowledge and instrumental effectiveness of specialized, theoretically grounded knowledge without concern to service in the public interest. The handy public administrator-with-a-toolbox model of public administration was only exacerbated with an aggressive form of NPM during the millennial decades that saw widespread movements toward outsourcing and privatization (Bozeman, 2007). Despite the longstanding debate over what entails professionalism by public administrators, professionalism may still be equated with *neutral competence* and is touted as a necessary consideration in the smooth functioning of government (Tonon, 2008).

### **Criteria for Professionalism**

One of the earliest attempts to identify the criteria of a profession was offered by Flexner (1915) who stated,

Professions involve essentially intellectual operations with large individual responsibility; they derive their raw material from science and learning; this material they work up to a practical and definite end; they possess an educationally communicable technique; they tend to self-organize; they are becoming increasingly altruistic in motivation. (p. 581)

Similarly, Parsons (1939) differentiates professionalism by technical specialty and empirical rigor, specifying that the unique characteristics of professionalism involve task-specific knowledge and abilities related to a single specialization as

well as professionals' consistent approach to task completion regardless of any external factors being present. In conjunction with Parsons' definition of professionalism, Eulau (1973) attributes professionalism to the translation of "knowledge into action" and use of that knowledge to help people address problems they cannot resolve themselves (pp. 172–173). Sanders (1993) denotes the essence of professionalism as:

A professional is one who is competent at some difficult task; the term 'profession' describes either the pursuit of the work in question, or the aggregate of persons doing that work; 'professionalism' and other cognates must similarly involve reference to this central idea. (p. 86)

However, Nanda (2003) cites concerns with professionalism such as conflict of interests that coincide with the characteristic of esoteric, task-related competencies professionals have been labeled to imbue. For Nanda (2003), "The distinguishing characteristic of professionals is [the] pledge to actively manage the conflict between the client and personal interests to favor the client" (p. 3). In the professions, a fiduciary relationship exists whereby the principal, or appraiser, has knowledge and abilities that are not possessed by the client, or layperson, yet these professional attributes are necessary for accomplishing the objectives of the work for which the professional has been retained (Nanda, 2003). Therefore, professionalism connotes an ethical standard and code of conduct by which the professional will put the interests of the client in front of the professional's extrinsic values such as compensation, notoriety, client-dependency, or other personal interests.

Subsequently, Parson's (1939) definition in a way serves to obscure, rather than clarify, the definition and distinctiveness of professionalism through discussion of perceived attributes of professionalism such as authority and control, these attributes have resonated in the literature. As examples, Goode (1957) cites the following eight characteristics of professionalism:

- 1) Its members are bound by a sense of identity, 2) Once in the professional community, few leave, so that it is a terminal status, 3) Its members share values in common, 4) Its role definitions are agreed upon by members and non-members, 5) There is a common language that is only partially understood by outsiders, 6) The community has power over members, 7) Limits are clear, though they are not geographical or social, and 8). (p. 194)

There is a social impact through control over selection of trainees, processes, and the adult socialization process. Greenwood (1957) also goes far beyond technical specialization and empiricism when he contends that all professions seem to possess: (a) systematic theory, (b) authority, (c) community sanction, (d) ethical codes, and (e) a culture. Additionally, Kline's (1981) universalistic criteria for professionalism, devised for the purposes of his public administration research, describe attributes of professionalism to emphasize systems and ethics:

1. The word profession is generally applied to a vocation or occupation built on a systematic body of knowledge and theory.

2. Members of a profession are assumed to be imbued with a “sense of calling” or “mission” that transcends “baser, more self-seeking, less altruistic” motives and goals.
3. A close relationship commonly exists between practitioners and the faculty, departments, and professional schools of universities.
4. Pre-professional training is not confined to the university setting.
5. At some point in an occupation’s progression to professional status, an association is formed.
6. The strong service orientation of professionals leads them to strive constantly for ways to increase their knowledge for the betterment of those they serve.
7. Organized professions have typically set ethical rules and standards for the behavior of their membership. (pp. 260–276)

Christensen (1994), building upon these and other scholars, suggests that the conditions upon which the word professionalism has been variously defined has led to the following generally accepted characteristics:

1. The subject matter must be sufficiently esoteric that the common person does not generally understand it and must rely upon the expertise of another for proper completion of the task.
2. The subject matter must require a period of academic study in order to master the complexities of the topic.
3. There must be a barrier to entry into the field that excludes those who are not competent.

4. There must be a code of ethics that requires the members of the profession to conduct their affairs at a level exceeding the mere requirements of the law. The core concept of this code of ethics must be a requirement that the professional will not take advantage of the public's inability to understand the professional's work.
5. There should be a professional society to monitor the actions of its members and to enforce the code of ethics. (p. 28)

### **Specialization in the Profession of Public Administration**

The body of theory and knowledge in the development of task specialization in public administration presents both a paradoxical and paradigmatic view of the profession. There has been great controversy over what constitutes professionalism in public administration (see for examples, Gargan, 1998), which, if any, special knowledge, skills, and abilities are inherent to such a position, and whether or not public administration can be approached and developed as a science, discipline, or even area of study. On one hand, public administration can be viewed as business (Wilson, 1887), where Simon (1946) states that overall efficiency must be the guiding criterion for the design of administrative organizations. On the other hand, public administration can be viewed as pragmatic, highly interpretive, and epistemological, as if functioning more like a craft of inquiry than a means to an end.

Two of the most prominent founders of governance and political systems in the United States, Alexander Hamilton and Thomas Jefferson, paved the way for a technical, mechanistic, and management-oriented approach to public



administration. For Hamilton, greatness in government symbolized a great engine of the wealth of nations through commerce, and that business should benefit the nation (Caldwell, 1990). Hamilton advocated further study of public administration, declared the need for a science of administration to replace the currently limited capacities of the business of government, and even intended to conduct empirical studies to see how various forms of civil government would impact freedom, happiness, and enterprise function (Green, 1990).

Here, the public administration functions in a neutral, non-political manner as decisions of the courts dictate administrative policy, while administrative action through political leaders is mitigated by the necessity of executive action in writing new law. Green (1990) attributes this arrangement as Hamilton's bicameralism, where the power of the legislative branch is structured and controlled to allow for an enhanced executive branch, with an independent judiciary, in creating a *partial agency* that would provide an internal check on the legislative, balance power and safety from the executive, and separate judicial action from lawmakers in the legislation.

Hamilton and Jefferson sought governing bodies that were protective of democracy and individual rights in a new order of the ages. Jefferson, representing democracy of a broadly equalitarian character (Rossiter, 1964), assumed the infinite perfectability of humans in advocating participative democracy where each citizen had a part in the administration of public affairs. This featured a decentralized arrangement with minimal emphasis on bureaucracy, professionalism in public administration, or the administrative state

as a director or conductor of development (Caldwell, 1990). While Hamilton supported Jefferson's view that this new form of government should resemble that of a republic, as an essential characteristic to security and advancement in society (Caldwell, 1990), unlike Jefferson, Hamilton believed that citizens most fit for the management of public affairs should govern.

While Jefferson also believed in a leadership cabinet of virtuous and talented men, Jefferson envisioned the role of federal government as protecting individual freedoms and advancing human capabilities through education whereas Hamilton envisioned a role for federal government as serving more encompassing planning and developmental functions (Caldwell, 1990).

Public administration is not mentioned in the Constitution, and it was assumed that much of its functioning would take place among the states. It was seldom that technical aspects in public administration were debated. Instead, it was legitimacy of forms and purpose of administrative action under the Constitution that was deemed paramount (Caldwell, 1990).

It is widely discussed in public administration scholarship that Wilson's early writings, especially his seminal article (1887), provide the foundation for modernism in government and managerialism in public administration. This is, "why we are having now what we never had before, a science of administration...it is getting harder...to run a Constitution than it is to frame one" (Wilson, 1887, p. 484). Accordingly, White (1955) prefaces his introductory writing on public administration by setting forth the following assumptions of administration: (a) administration is a uniform process in its essential observed

characteristics, (b) the study of administration should start from the base of management not law, (c) administration is an art in transformation to a science, and (d) administration is the problem of modern government.

Kirwan (1987) challenges the notion of administration-as-business by illustrating the reductionary qualities of the historical process. Kirwan (1987) believes that sociopolitical development through history is democratizing politics; it is eliminating the need for politics and giving room for science of administration, a science that underlies the structure for evolving nodes of criteria and measurement (Kirwan, 1987). Kirwan (1987) argues Wilson's essay is not an adequate guide to the study of public administration, and scholars should return to Hamilton's understanding of public administration to furnish a sense of direction.

Morganthau (1950) attributes American political science to being grounded in both Hamiltonian and Wilsonian indoctrination. The attainment of a modicum of order and realization of a minimum of moral values are predicated on the condition that communities are capable of preserving order and moral values within the limits of their power. The alternative is not a higher morality through application of moral principles but moral deterioration by the fanaticism of political crusades (Morganthau, 1950). The advent of corporations in the 17th and 18th centuries has proved to be a useful instrument in the economic and developmental functions of government although its structure and status pose problems of public interest and accountability. It is the underlying presence of these moral imperatives that gives American politics its distinctive character. The

frequent and sometimes flagrant violations of political morality do not nullify modern public administration's reality or significance (Caldwell, 1976).

Smith (1776) demonstrates an early, yet nonetheless marvelous example of the impact of scientific management by means of task specialization on the production of pins. If each of 10 workers is to complete the entire process (18 tasks) of making a pin, then only a few dozen pins can be produced in a day (Smith, 1776). Yet, if labor is divided according to tasks, so that one worker draws out the wire, one worker straightens it, one worker cuts it, another worker points it out, and a fifth grinds it out at the top for receiving the head, to a degree where 10 workers each specialize in 2 or 3 of 18 tasks, then Smith witnessed the production of 48,000 pins in a day!

Caldwell (1976) further discusses the political institutions upon which America was founded upon. In local government, the English municipal corporation was initially given similar legal status in the United States, where counties incorporated collectives of villages or cities. Differently, the New England town was an American innovation, where direct democracy takes place at town meetings, giving expression to the theory of the right of individuals to participate in government, as opposed to the representative democracy of municipal corporations. These two contrasting political systems pose different roles for public administration. In the first case, the public administration is a well-oiled, highly functional enterprise with an organizational culture boasting best practices through operations management, accounting and finance, information technology, and human resources departments, among others. In the second

case, the highly efficient, capable, and pennywise bureaucracy still exists, except that it stops to allow for the operators to take a breath of air while the stakeholders are given the opportunity to voice their oftentimes refreshing ideas or concerns.

The developers of modern economic systems at the turn of the 20th century were progressives, public organizations were designed to conduct administration-as-business (Wilson, 1887). In turn, early public administration scholars had faith in the power of reason to order human affairs and its role in achieving progress (Spicer, 1995). These scholars were greatly influenced by doctrines such as utilitarianism, legal realism, positivism, and pragmatism (Spicer, 1995). Keynes (1904) posits that mechanical analogies suggest deductive methods of investigation, while biological and evolutionary analogies deal with inductive methods. The *paradox* is that economic problems can sometimes best be solved by common sense, by the natural untrained intelligence and sagacity of the unscientific man, and it can therefore be considered a mistake to give economic reasoning a scientific form (Price, 1878).

During the industrialization era, it was declared that science is verifiable knowledge, but this makes science and knowledge the same thing (Price, 1878). It is verifiable knowledge that a sheep can be raised to produce wool, but does this make the farmer a scientist, despite possessing knowledge that is verifiable? Farmers, sea captains, a skillful gardener, use vast amounts of systematized knowledge. Both sea captains and farmers possess and use systematized knowledge by means placed at their disposal through science such as

navigational devices and various plant treatments. Respectively, these positions are scientific but the practices and processes involved are certainly based on a system of knowledge (Price, 1878).

In contrast to Price (1878), Weber (1946) argues that with the rise of bureaucracy, the “such cultivated types are now unfit for the management of economic and political affairs; they are being displaced by the specialist bureaucrat and the professional politician” (p. 74). Friedman (1953) finds that the majority of policy issues can be resolved through positive economics, and do not involve fundamental differences in values. Any policy conclusion rests on a prediction regarding the consequences of doing one thing instead of another, a prediction that must be based on positive economics. “There is not, of course, a one-to-one relation between policy conclusions and the conclusions of positive economics; if there were, there would be no separate normative science” (Friedman, 1953, p. 5).

For example, consider the ongoing debate of raising minimum wages. Proponents of raising minimum wage believe that raising the minimum wage reduces poverty by increasing the wages of workers while the counterbalancing effect on the number employed is not advantageously less than it otherwise would be. Opponents predict just the opposite, that increasing the minimum wage will decrease the number of employed, and that this effect will be cumulatively detrimental to the alternative policy. The object of a positive science is the establishment of uniformities, of a normative science the establishment of ideals, of an art the formulation of precepts (Keynes, 1904).

Technical rationality led to specialized, expert knowledge, the very life blood of the professional, leading to the proliferation of professional associations in the latter half of the 19th century and early part of the 20th century (Larson, 1977). Only by specialization within applicatory limits can scientific thoroughness and exactness be achieved in any knowledge department (Keynes, 1904). The division of work affects both the efficiency that a given set of tasks is carried out with, and upon the nature of the goals that are achieved (Simon et al., 1950/1991). Yet, Waldo (1948) asserts that at the heart of progressivism is a basic conflict of social outlook between those who hope for a planned and administered society and those that remain firm in an underlying harmony by which natural and inevitable processes result in the greatest possible good, assuming that institutional and social reforms can be made.

Truths enforced in the social sciences are not due to scientific discovery as experienced in the laboratory, but to natural intelligence studying and explaining processes long known to the world. Krimsky (1984) outlines the following intellectual skills that scientific or technical experts bring to a problem: (a) a theoretical framework, lattice of concepts, laws, and explanations; (b) acquaintance with a body of literature; (c) proficiency with specialized instruments; (d) causal knowledge and the ability to frame hypotheses; and (e) a process of inquiry that enables collection, organization, and interpretation of data.

The natural intelligence, this common sense, that serves as the basis for understanding relationships in theory and law, or for the proficiency with tools and instruments, as examples, may fall into error and at least demand continued

thought and investigation, similar to science, indicating that common sense and science stand on the same level (Price, 1878).

It has been argued that accepted administrative principles commonly utilized to achieve efficiency such as specialization, unity of command, span of control, and organization by purpose, process, clientele, or place, cannot be validated (Simon, 1946). Rohr (1985) asserts that when public administration moves from theory to practice, it is caught in the perennial crossfire of involving a Congress, President, and courts, thus American public administration can never be purely instrumental because there is no way of telling whose instrument it will be. Nonetheless administrative theory resting on constitutional principles has the advantage of preserving professional autonomy within the framework of the Constitution, which in itself provides legitimacy for the existence of the profession (Rohr, 1985).

Hart and Scott (1982) declare that the conduct of public affairs must be guided by the natural laws of our foundation, and that professionals in public administration are losing sight of regime values such as life, equality, liberty, and pursuit of happiness, in light of fascination with the techniques of business administration. The classic utilitarian view is that the obligations of public interest are to provide for the efficient production and supply of goods and services. As an example, there is not a need for philosopher-managers only good production engineers. "Management means control and all techniques of human control are derived from specific values which shape and legitimize them" (Hart & Scott, 1982, p. 240). Today, utilitarianism and social Darwinism remain embedded in



management thought, in which recognition and rewards are tied to performance and firms compete to survive in rapidly evolving industries (Hart & Scott, 1982). Even culture has become a mechanism for employing technical rationality. Instead of viewing culture as the larger context of meaning that nests organizations, the focus has quickly been narrowed to individual organizations, each evolving its own culture (Adams, 1992), or the ability to model an exemplar organization, and to follow it. Organizational culture becomes a technique for the manager's tool bag as many companies and agencies set out to reshape their corporate culture, similar to the way a strategic plan would be initiated (Adams, 1992).

Hummel (1991) differentiates the pursuit of knowledge in management and science on the grounds that (a) managers live and work in an environment different from that of scientists, (b) managers need knowledge for purposes different from scientists, (c) scientists have uncovered an alternative way through which managers obtain knowledge but have failed to investigate, (d) managers are able to question whether or not assumptions of science apply to their situation, and (e) managers are concerned with their own validity standards for their own preferred way of transferring and obtaining knowledge, so that their process for acquisition of knowledge is as valid as science. Public administration has adopted an epistemological and philosophical belief system specifying that since public administration has become a primarily utilitarian and pragmatic field in managing public affairs then its greatest contribution is applying managerial strategies to solve public problems (Ventriss & Muller, 1985). The public is no

doubt very concerned with increasing government efficiency, but it is also interested in normative issues such as ethics, responsibility, and accountability (Ventriss, 1987).

Poister and McGowan (1984) describe management capacity as the ability of government to do what it wants to do, as a function of community expectations, resources, and problems. Management capacity can further be divided into three functional levels, policy management involving strategic functions of setting goals and priorities, resource management including across-the-board support functions such as personnel administration and information processing, and program management of administrative duties required to implement and oversee activities and services (Poister & McGowan, 1984). From a politico-centric standpoint, managerialism has been defined as the following: (a) a less than conscious and attentive promotion of values, (b) inclusion of all remote disciplines into the field because of an inability to define normative positions, (c) identification of the needed social technology to achieve efficiency, (d) a policy orientation, and (e) emphasis on planning and control without a normative foundation (Wald, 1973). Public administrators need to master business skills more and more as they discover the need to deal with classic problems of business management (McCurdy, 1978). Yet, the extent that Americans investigate and disclose errors of public policy and administration astonishes the greater part of the world (Caldwell, 1976).

Brown and Pyers (1988) conclude that it is likely that environmental and behavioral difficulties, not technical ones, will be the most difficult problems to

solve when integrating service efforts and accomplishments into traditional financial and economic structures of public organizations. The use of service efforts and accomplishment data in government approximates the profit signals of the private sector, yet to simulate the private sector fully would require significant economic, social, and behavioral changes (Brown & Pyers, 1988). White (1986) surmises that the growth of knowledge in public administration requires recognizing availability of alternative modes of empirical inquiry in the interpretive and critical traditions to explain how interpretive reason and power can be engendered by communicative interaction. The best studies apply empirical data to “phenomenological interpretations,” while admonishing the three-way relationship between theory, method, and practice, where method entails “techniques of elaboration” and not merely “techniques of everyday management” (Daneke, 1990, p. 384).

### **Studying Professionalism in Public Procurement**

It is difficult to define professionalism in public procurement and administration. First of all, there is a longstanding debate among public administration scholars in regards to what constitutes professionalism. One school of thought attributes professionalism with the politically neutral bureaucrat (Brint, 1994; Childs, 1914; Goodnow, 1900; Gulick, 1937; Ingraham & Rosenbloom, 1989; Schneider, 1992; Taylor, 1919; Urwick, 1937; White, 1955; Willoughby, 1927; Wilson, 1887). In this view, professionalism in public administration is said to be related to business administration, be based on managerialism, and emphasize the ability to perform expert duties and complete

regimented modes of administrative responsibility. Accordingly, political factors and orientations are separate from the considerations concerning the professional bureaucrat and left for elected officials or other executive decision-makers.

Differently, professionalism in public administration can be viewed as being highly political. In this sense, the professional bureaucrat considers political aspects in their decision making, which shapes the roles and responsibilities, and the ways in which administrative practices are posited (Appleby, 1949; Dahl, 1947; Fesler, 1980; Riggs, 1968; Waldo, 1948). Here, the relationship between politics and administration is argued to be direct, as notions of democracy are unable to be separated from the administrative mechanisms that organize and implement such a political system. The processes and procedures that support governance, namely the administrative practices of public administrators, are political by nature in the way that they are set up and used to control administrative and hence political function.

Third, professionalism in public administration has been related to psychological and sociological views, such as ways of perceiving laws and solving problems, or constitutionalism. Psychologically, public administration has been said to deal with the science of human behavior and the resulting logic and psychology of premises that are accepted as bases for choice (Simon, 1947; Simon, 1957). From a sociological standpoint, the roles and responsibilities of the professional bureaucrat may be associated with the structuration of inculcating the world to achieve common understanding among decision makers and ways

of approaching and solving problems (Mosher, 1978). Here, various theory and value orientations of public administrators result in varied interpretations regarding political styles or focus on particular public issues, and differing qualities of citizenship (Elazar, 1984).

The constitutional approach to public administration professionalism emphasizes legal aspects and execution of the administrative function according to constitutional principles. Here, legal aspects such as a need to interpreting the law correctly, wisely, or in the public interest is a critical factor to a bureaucrat acting with professionalism (Waldo, 1968). Subsequently, Hart and Scott (1982) situate public affairs according to the natural laws of our foundation. Additionally, Rohr (1985) and Caldwell (1990) underscore administrative action with respect to the guidance, requirements, and framework of the Constitution.

Just as there are multiple, conflicting views of what constitutes professionalism in public administration, and hence the subfield of public procurement, there is a host of differing criteria that can be used to measure professionalism as well. Goode (1957) sets forth eight characteristics of professionalism in public administration that emphasizes a sense of shared identity, language, community, limits, and values. Greenwood (1957) characterizes professionalism according to theory, authority, sanction, ethical codes, and culture. Kline (1981) and Christensen (1994) associate professionalism in public administration as being esoteric, containing barriers to entry, professional associations, and the prevalence of training and formal education programs.

Considering the varying views of professionalism in public administration, such as neutral, political, and constitutional, and the flux of criteria that has been set forth for measuring levels of professionalism, it becomes difficult to determine whether or not professionalism exists in a particular field of study. More specifically, declarations that posit particular fields as being a profession are difficult to make based on the numerous characterizations, attributes, and criteria that exist in the literature on public sector professionalism. As a result, this study did not seek to test for levels of professionalism as such. Instead, this dissertation sought to examine task specialization in public procurement and administration by studying the nature of the job activities that are performed and managed by practitioners. Using this approach, it can be determined what it is that public procurement practitioners actually do as a means of characterizing the field of study and establishing characteristic practices by a breadth of surveyed practitioners. The performing and managing of these job tasks represent the specialized tasks for which professionalism in public procurement and administration can be founded upon, regardless of whether or not the means may be inherently neutral, political, sociological, or constitutional. Additionally, it is the performing and managing of specialized tasks that form the foundation for being able to achieve a majority of the criteria set forth in the scholarly literature for measuring professionalism in the public sector as well.

## **Focusing on Public Procurement for Studying Professionalism in Public Administration**

Similar to public administration, public procurement has undergone similar scholarly challenges in the literature with regard to defining what constitutes professionalism. Just as public administration scholars have debated the essence of professionalism as having connotations as varied as neutrality, political, sociological, or constitutional, theorists in public procurement have struggled to define this subfield of public administration in terms of being politics-oriented or procurement-as-business. Roman (2014) conducted an empirical study that surveyed public procurement specialists and found that a politics-procurement dichotomy exists in which public procurement practitioners assume roles as either purists or brokers. Purists are “defenders and enforcers of the supposedly neutral and hierarchical nature of the procurement process” and define decision-making criteria and performance measures exogenously from their organizational context (Roman, 2014, p. 40). On the other hand, brokers focus on human relationships and learning dynamics, characterizing themselves as helpers and facilitators in the public procurement process, in which heavy emphasis is placed on developing personal, professional, and inter-organizational relationships; believing that external environments can be shaped in ways that assist public procurement habits or practices (Roman, 2014).

The purist model in public procurement assumes a politically neutral orientation, whereby purchasing practices are pursued according to scientific styles of management and decision-metrics involving cost-benefit analysis.

Differently, the broker model in public procurement assumes a political orientation in which there is a circular interaction between exogenous factors such as the environment and other organizations, and the purchasing practices within the organizational context. In this manner, political factors such as the needs and wants of inter-organizational participants can impact the decision making that takes place with respect to the nature and type of specific procurements.

Numerous public procurement scholars have posited professional practices in public procurement, like public administration, according to either the politically neutral or political-oriented bureaucrat. Durant, Girth, and Johnston (2009) juxtapose the issues surrounding politically neutral procurement agents as the trend to outsource, or contract-out, has become prevalent in which private sector and nonprofit entities are doing the work that the procurement practitioners once loved. In this way, the political orientation of procurement practitioners is being transferred to supposedly neutral agents of the administration. Agranoff and McGuire (2003), Lynn, Heinrich, and Hill (2001), and Meier and O'Toole (2006) elaborate on the recent trend for public procurement to adopt market-based best-business practices including privatization, contracting, competitive sourcing, PPP, and cross-sectoral networks. Agranoff and McGuire (2003) discuss the new roles of procurement and contract specialists as being immersed within networks involving dyadic and bilateral contract relations and thus these roles for procurement specialists are outside of the agency. Lynn et al. (2001) argue that the tools now exist for a new logic of governance in which



social, economic, and political factors are incorporated into inanimate clients who are deemed to be separate from political thrift. Meier and O'Toole (2006) further examine the political sway between bureaucracy and clients (the public) but determine that it is the complex intergovernmental and inter-organizational networks themselves that limit bureaucracy's ability to implement public policy in tune with public preferences. Instead, bureaucracy responds to the public's demand, and bureaucracy is thus limited with its response according to executing these initiatives with solely efficiency and effectiveness in mind.

The idea of procurement-as-administration, or that public procurement mimics private sector notions of business management, efficiency, effectiveness, and mechanistic approaches is widely discussed in the theoretical literature. The mission of the supply function in public procurement, like the private sector counterpart, is to manage deliveries of goods and services in a cost-effective manner (Johnson, Leenders, & McCue, 2009). Financial management, negotiations, purchasing, contract administration, and evaluation are all tasks central to the achievement of cost-effectiveness in the public and private sector alike. More specifically, Muller (1991) surveyed National Association of Purchasing Management (NAPM) members in U.S. state and local governments in addition to private procurement employees where the responsibilities of respondents between the two sectors was found to be minimal. Only areas of inventory management, material flow, and special considerations for performance enhancement were found to be differentiating, with the public sector being less active in all three (Johnson et al., 2009). Meanwhile, utilization of

automated purchasing systems for transaction processing and tracking as well as execution of multi-year contracts are common trends in both sectors.

Opportunism is prevalent with similar frequency in both sectors; buyers are more opportunistic in the private sector and leaders are more opportunistic in the public sector (Hawkins, Gravier, & Powley, 20118). From a legal and process standpoint, despite some distinctions, the similarities between public law of contract and private law of contract are more closely related than the differences (Arrowsmith, Linarelli, & Wallace, 2000). Standard form contracts, dispute and revocation, and conditions of contract are generally regulated equivocally across the private and public sectors. And, other than the funds allocation and solicitation process, the steps needed for physical procurement is fairly typical in the public and private sector. For example, practitioners in the public and private sectors are likely to begin the purchasing process by researching products and services. In addition to lower-level tasks, some mid-level tasks such as pre-bid conferences and requests for proposals may soon follow. A number of traditional human resource management services are being outsourced to achieve efficiency, economies of scale, and organizational flexibility including lower-tier transactional activities (see Battaglio & Condrey, 2006; Chi, Arnold, & Perkins, 2003; Coggburn, 2007; Kosnick, Wong-Mingji, & Hoover, 2006; Lawther, 2003). The argument for outsourcing these activities stems from the ability to focus bureaucratic function to more strategic and planning issues, which are also increasingly being outsourced to consulting firms.

In public procurement, a political process must unfold before a procurement action can first be taken in the public sector. Additionally, open and transparent solicitation is often not required in the private sector. In fact, the bidding and solicitation process, serving as the impetus for privatization and contracting-out, has itself been recognized as being deeply political. Wallin (1997), in the case of Massachusetts, demonstrated that union heads characterized the contracting process as political patronage. While studies overlooking the bidding process claim that credible and fair bids are sought after, government agencies have little control over bidding rules when it comes to the effects of lobbying from interest groups, legislators, and other executives (Whitford, 2007). Once collusion occurs, ascending or subsequent bidding auctions will not take place, and the efficiency/effectiveness of the bidding process becomes absent (Klemperer, 2002).

The theoretical differences between private procurement, traditionally called purchasing, and public procurement, commonly known as procurement, become more profound than the similarities. Purchasing and procurement has been differentiated by describing purchasing as the process of acquisition in manufacturing while procurement is a term used in governmental circles for acquisitions (Bowersox, Closs, & Cooper, 2002; Quayle, 2000). Telgen, Harland, and Knight (2007) observe that the demands on public procurement are greater and more varied than those on private sector procurement.

The objectives of the public sector, and also for public procurement, are wider than traditional private sector objectives such as profit maximization,

innovation, advancement, and collaboration. Such public sector objectives involve the delivery of a wide range of public services to achieve social equity in consideration of a social function that is aligned with tenets of good governance, such as the transparency, accountability, and efficient/effective provision of public goods and services according to the demands of society. The direct responsibility of politicians in public procurement is another differentiator from private procurement (Murray, 1999).

In conjunction with the politically oriented view of public procurement, Murray (2009) argues that the fundamental differences between private and public procurement have been overlooked and greater attention to detail is warranted to examine the interface with politicians. Romzek and Johnston (2005) state that accountability is undermined by the use of risk shifting from government to private-sector provision of goods/services, reliance on a market-system of competing providers, and swift adoption of new information technologies. With regard to adoption of new information technology, it is clear that governments need to adopt new technology to keep up with capacity in the storing, analyzing, reporting, and tracking of outcome data, yet “few have the software and skills needed to manage outcome data usefully” (Plantz, Greenway, & Hendricks, 1997, p. 28). In fact, research suggests that the introduction of new technology may actually interfere with the state’s capacity to hold actors accountable (Romzek & Johnston, 1999).

Another specific challenge posed to public purchasing managers in achieving accountability is the presence of multiple, competing, and alternating

performance expectations of diverse, legitimate, and conflicting sources (Hayes, 1996; Khademian, 2000; Klingner, Nalbandian, & Romzek, 2002). In some cases, contractors face trade-offs between being accountable to the client (purchasing department) and their own organization (Frumkin, 2001). Additionally, overall accountability effectiveness is contingent on shared impressions involving the key players, issues of program turmoil, political controversies, client satisfaction, points of ongoing conflict, and issues that remain unresolved (Romzek & Johnston, 2005).

Phillips, Caldwell, & Callender (2007) recognize political accountability for public procurement outcomes but the missing link between good governance and other tenets of democracy are missing in procurement activities. For example, the outcomes in relation to public policies of elected officials are reflected through specific procurements, however, when the public procurement function fails in delivering the appropriate quality or quantity of public goods/services demanded by the public, the engagement between elected officials and public procurement fails to be interpreted or reported (Caldwell, Bakker, & Read, 2007). Erridge, Fee, & McIlroy (1998) conducted a case study regarding the balanced-scorecard approach that includes leadership, policy, and strategy; however, this scorecard failed to address engagement with politicians. Reed, Luna, and Pike (2005) advocate that the design of performance metrics must consider both the audience and the input of politicians. More often than not, procurement's customers are actually internal departments (Schiele & McCue, 2006), thereby

insinuating devolution from implicating the political needs and wants of politicians and residents.

Along these lines, public procurement is seen as a reactionary conduit to the strategic planning function, which is often politicized. However, this regressive nature of the procurement function separates its practices from the strategic political function that initiates action. It is argued that only after the organization has developed core objectives that functional procurement strategies can be put into place (Carr & Smeltzer, 1997). Without a strategic alignment between the political initiatives that steer organizational objectives and the procurement function, it is not possible to affect change in procurement as a complementary strategic function (Cousins, 1999).

Consequently, Bozeman (2007), Rosenbloom (2007), and Rosenbloom and Piotrowski (2005) discuss the issues with privatization and market-based purchases to be centered on threats to democratic ideologies and the constitution. Adams and Balfour (2004) and Frederickson (1997) believe that the political neutral bureaucrats, that is, public procurement specialists who serve as agents in purchasing roles, and their tendency to assume neutrality through shifting managerial responsibilities have led to corruption, immoral practices, and the commodification of citizenry. As a result, Milward and Provan (2000) and Suleiman (2003) point to an encompassing shift to a hollow-state and an undermining of its democratic principles.

Chen (2009) cites the idea that the policy school of thought grounded in theoretical and economic techniques has provided public managers with an

applicable understanding of the deficiencies separating politics from procurement, thus leaving motivational, sociological, and political aspects unexplored. Van Slyke (2007) emphasizes the need for public procurement to serve as both technically rational administrative functions and functional conduits for the proliferation of political will. Public policy directives, policy goals, and program requirements may be ambiguously defined and monitored infrequently, making it difficult for public managers to evaluate frequency, consistency, and quality of service in light of privatized or contracted-out social services (Van Slyke, 2007). Therefore, the attributes of public services require that public managers exercise discretion in the provision of public goods and services (Van Slyke, 2007).

Meyers, Riccucci, and Lurie (2001), Riccucci (2005), and Sandfort (2000) believe that de-politicization in public procurement can lead to goal divergence between public policy directives and implementation, presenting accountability issues. Furthermore, the issue of trust can become problematic when procurement activities are based solely on de-humanist, positivist functions. Hardin (2002) and Yamagishi and Yamagishi (1994) elaborate on the importance of strategic trust between political actors, a trust that is based on the knowledge of and experience with other parties, which involves a mutual expectation of reciprocity in the present and future. Resultantly, trust is a major political function involving psychological and social processes that underlie developing, maintaining, changing, and continuity of operations (Rousseau, 1995).

Tacit knowledge involving political issues, cultural issues, and value-orientations are crucial elements in the public sector (McAdam & Reid, 2000). Public procurement personnel, therefore, are expected to contribute to the strategic policy process by interpreting what good service means through reconciling the diverse values of varying constituent groups and deeper community cultures (Chen, 2009). Public procurement practitioners ensure accountability by balancing numerous sources of authority including board policies, purchasing guidelines, public hearing requirements, and civil service regulations (Morgan, Bacon, Brunch, Cameron, & Deis, 1996). If accountability is degraded with respect to failure in catering to, or considering stakeholder factions, there is a chance of eroding democracy and impeding citizen participation, leading to public value failures (Bozeman, 2007).

Just as in the broader field of public administration, public procurement struggles between identifying its practices as being task-based, economic, apolitical, and rational, or being necessarily imbued with politicization, social conditions, and constituencies. On one hand, public procurement pursues economic ends in its purpose to provide public goods and services following tenets of good governance that involve transparency, accountability, and the efficient and effective provision of goods and services as demanded by the public. In this sense, business practices such as cost-benefit analysis, value-for-money, cost effectiveness, productivity, and output are pursued via calculation, privatization, outsourcing, or contracting-out. On the other hand, the literature provides substantive arguments that suggest pursuit of good governance may



actually be best achieved through political association of the public procurement profession. Here, public procurement professionalism is assimilated with the utmost consideration for political and value orientations, which may vary according to cultural groups, ideologies, tacit knowledge, or sociological factors. All in all, the body of knowledge and theory in public procurement offers combined, and often conflicting views, of what constitutes professionalism in public procurement. For this reason, public procurement appears to be the ideal candidate for studying professionalism in public administration, as public procurement deals with the same struggles that public administration thought and inquiry has touched upon regarding professionalism in the literature.

### **Public Procurement Occupation and Duties**

“Public procurement is the designated legal authority to advise, plan, obtain, deliver, and evaluate a government’s expenditures on goods and services that are used to fulfill stated objectives, obligations, and activities in pursuant of desired policy outcomes” (Prier & McCue, 2009, p. 329). In this sense, public procurement practitioners play a central role in the provision of public goods in an economy. As a result, public procurement practitioners must manage a variety of job activities.

According to the U. S. Bureau of Labor Statistics (BLS), purchasing managers, buyers, and purchasing agents are recognized as occupations within the business and financial occupation group (BLS, 2013). Collectively, the three purchasing positions belong to the field of procurement, indicative of the strategic and managerial aspects of purchasing (De Boer, Ebben, & Pop Sitar, 2003; Mol,

2003). Despite the creation of several scholarly journals in the field of procurement, including the *Journal of Public Procurement* in 2001, researchers in public administration, public finance, and public budgeting have largely ignored the purchasing function (MacManus, 1992). Subsequently, labor force participants are largely unaware of public procurement practitioners' roles and responsibilities and if procurement and logistics is noticed, it tends to be dominated by purchasing activities in the private sector.

Beginning in the 1980s and 1990s, the formation of PPPs established the necessity of public practitioners to consider stakeholder interests such as business private investors (Cooper, 2003; Kettle, 2002). However, best practices have not been vetted to address the various dynamics at each level of government (Steinfeld & Thai, 2013). At one extreme, there are prescriptive and regulated structures, where executives or directors are heavily involved in the majority of the procurement process. At the other end, there are loosely guided approaches where responsibilities are devolved and procurement is viewed as a managerial function (Peters, 1996).

The objectives of public procurement and its operations are expansive, even more so than the singular objective of minimizing costs, maximizing value, revenues, or profit (Larson, 2009; Murray, 1999). Such objectives involve the delivery of a wide range of public services, such as law and order, health, education, defense, transportation, the environment, and social services. Thus, the scope of procurement in public sector organizations is broad with regards to diversity and serving consumers' needs (Erridge, 2007). As a result, an

increasing recognition of the strategic role of public procurement has emerged that applies cost saving functions to cover more general governmental objectives (Zheng, Knight, Harland, Humby, & James, 2007).

Considering the roles and responsibilities, and various functions served by public procurement practitioners, this study looked at job tasks performed and managed by public procurement practitioners. The review of literature has thus far produced specific criteria by which professionalism can be measured in occupations. However, for the purposes of this study, and without means of comparison, it is not feasible to directly test whether or not professionalism exists in public procurement with respect to each criterion presented in a chosen model (see for example Christensen, 1994; Kline, 1981). Instead, the focus of this study was on what public procurement practitioners actually do, such as in their job tasks, which were discussed to be the fulcrum of occupations' development towards professionalism. Rather than trying to make inferences about how certain indicators implicate criteria for professionalism that involves holistic considerations such as ethics or standards (see Christensen, 1994; Kline, 1981), a much clearer conclusion regarding professionalism can be drawn by analyzing job tasks, in order to draw conclusions regarding levels of technical specialization in public procurement, through reported performing, managing, and performing and managing of job tasks. Levels of professionalism in public procurement as measured by job tasks can be compared across job classifications, in addition to control variables such as size of organization, to see how various external factors could impact levels of professionalism in the field.

Essentially, the theories on professionalism in public administration posit professionalism in two distinct ways. On one hand, according to a modern or NPM view, professionalism refers to task specialization, sociological factors attributable to groups that complete similar tasks, neutrality, and the specific knowledge, skills, and abilities (KSAs) that are characteristic of the workers in an occupation or profession. On the other hand, similar to a postmodern view, professionalism can be viewed as a managerial perception, a way of envisioning how to achieve betterment in society, or the ability to implement various approaches to address the legal and political factors that guide the public policy stream. For this study, professionalism in public procurement was under review whereby performing and managing of job tasks was the variable under study in order to examine what it is that practitioners actually do—perform and manage specialized job tasks or conduct middle management-type activities as suggested by modern tenets of public administration such as outsourcing and managing private contractors (Hood, 1998; Pollitt, 1983). While the theoretical model of this study has been discussed in the literature review, the technical model, by means of the research design, is discussed in the following chapter.

### **Chapter Summary**

This section provided a review of literature dealing with professionalism in public administration and public procurement. A discussion of the scientific orientations present in administrative science and inquiry were also discussed. A discussion of how occupations are organized and how occupations become professions was presented to delineate occupations from professions. Second,

professionalism in public administration was discussed through a historical analysis of the various phases that the literature on professionalism has gone through, from administration-as-business and scientific management to more sociological approaches including political orientation, common ways of perceiving, and constitutionalism. Third, the public administration dichotomy in which public administration was said to be separate from politics and its subsequent break down in the literature was highlighted to form an understanding of the various view of professionalism in public administration that have been theorized. Next, the criteria for professionalism were presented including the presence of barriers to entry, body of knowledge and theory, and academic programs to cite tangible metrics for determining professionalism of a field or occupational area. Fifth, the occupational duties directly related to public procurement were discussed to gain an understanding of the roles and responsibilities prevalent in the field and the scope of the specific duties of the public procurement practitioner. Sixth, the reasons for focusing on public procurement as a means for studying professionalism in public administration were examined.

The following chapter presents the research design utilized in this study. A review of the research questions and hypothesis, the theoretical basis, and the model and assumptions are discussed to set the foundation for methods used to generate quantifiable results. Limitations to the research design, including selection bias, nonrandomness, sampling issues, and generalizability of the findings, are discussed to demonstrate that no study, including this one, are

perfect in their ability to apply findings in one circumstance to all circumstances that exist in practice. The methods are also detailed in order to illustrate the mechanics that will be used to generate robust results in the Findings section.

## CHAPTER 3: RESEARCH DESIGN

The research design and quantitative methodology used to generate results of the study are detailed in this chapter. First, the research question and hypotheses are restated as well as their justification. The approach used to examine job tasks performed, managed, and both performed and managed in public administration is described in addition to the reasons for using quantitative analysis to compute results from measurement of the survey data. Subsequently, secondary data issues and generalizability of the results are discussed. The UPPCC survey instrument and process for collection of data is explained including factors related to selection bias and nonrandomness. The survey design and the research variables, such as measurement of data and sampling, are also discussed. Next, descriptive and exploratory methods for computations necessary to examine job tasks that are performed, managed, and both performed and managed in public procurement by job title and organization size are detailed. Factor analysis is presented with an outline of the computations necessary to generate results that provide gainful insight into practitioners' performance and management of job tasks.

### **Model and Assumptions**

A review of the research question and hypotheses is merited before introducing the methods utilized in the design of the study. To examine task specialization in public procurement, the following research question was

addressed: What job tasks are performed, managed, and both performed and managed by public procurement practitioners according to job position and organizational size?

The following research hypotheses examined the relationships across all cases from which to baseline practitioners' performance, management, and both performance and management of job tasks according to job position and organization size. However, prior to examining these relationships, exploratory factor analysis was used to explore and verify patterns in the data set to reduce the number of variables to a smaller set of underlying (latent) summary variables. In doing so, certain factors emerged identifying what job tasks are performed, managed, and both performed and managed by this group of respondents. This established the baseline from which the following two hypotheses were explored:

*H<sub>1</sub>*: There is a relationship between job tasks that are performed, managed and both performed and managed based on job position.

*H<sub>2</sub>*: There is a relationship between job tasks that are performed, managed and both performed and managed based on organizational size.

Regarding job position, it is expected that practitioners who only perform; those who both perform and manage; and those who only manage job tasks is contingent upon job position. If there is no relationship between what practitioners actually do based on job positions and all else remains the same, there is a lack of evidence consistent with professionalization in public procurement ( McCue et al., 2016; Prier et al., 2013; Steinfeld et al., 2016). As one example, if public procurement is to reflect a profession for which



practitioners have task specialization and expertise (Niskanen, 1971), then it would be expected that practitioners in more senior job positions display more task specialization and expertise; therefore, these practitioners may perform and manage a more narrow scope of job tasks, or perform and manage these job tasks in particular combinations. Furthermore, the extent to which these job tasks are either solely performed, managed, or both performed and managed may be contingent upon job position. The expectation was that both performing and managing job tasks of senior job positions would be more specialized, with solely managing being more specialized than solely performing.

When considering the procurement organization, the expectation was that practitioners who only perform; those who both perform and manage, and those who only manage job tasks would be contingent upon organizational size. If there is no relationship between what practitioners actually do based on the size of the organization, and all else remains the same, there is a lack of evidence for professionalization in public procurement according to the following argument. It was expected that public administrators display more task specialization as an organization's size increases based on the large number of employees; in order to necessitate the need for so many employees in an organization one would think that there would be numerous functions served through specialized practitioners each completing a narrow scope of job tasks. If there is no relationship between task specialization and organization size, then public procurement practitioners may not be serving specialized roles and responsibilities that differentiate the field to be considered its own profession.

**Theoretical underpinning.** There are numerous theoretical conceptions that seek to describe the profession of public administration. Niskanen (1971) suggested that governments utilize competitive markets in providing public goods and services where governmental efficiency and effectiveness is lacking. It is suggested that outsourcing, contracting out, and privatization are public strategies to compensate for public administrators' lack of expertise and knowledge (Niskanen, 1971). Furthermore, beginning in the 1980s and 1990s, the formation of public-private PPPs and PPI established the necessity of public administrators to consider stakeholder interests such as business private investors (Cooper, 2003; Kettle, 2002). Of the countless examples of PPPs and PPIs at federal, state, and local levels of government, some commonly outsourced public goods and services include human resources, construction of municipal structures, and mental health rehabilitation facilities. While privatization of the aforementioned public goods and services appears to be innocuous, there are countless examples where government contracting has led to public service failures or civil rights abuses; such as in penitentiaries, public construction projects, and health care.

Pollitt (1993) and Hood (1998) cite numerous issues with NPM that focus on the cultural, political, and stylistic elements inherent to managerialism by public servants and those being governed (Jordan & Wheedon, 1995). Pollitt (1993) and Hood (1998) acknowledge that experimentation, measurement, and evaluation are necessary sciences for the efficiently functioning administration, which is the common view in NPM, by producing numerous examples of cost

overruns and misspending by government, such as the misappropriations related to construction at London's Heathrow airport. However, Pollitt (1993) and Hood (1998) duly note that these public management failings are the result of the principal-agent relationship that exists in these arrangements, rather than managerial limitations regarding the science of administration.

In spite of the widespread adoption of NPM across government agencies, Sanders (1993) denotes the essence of professionalism as:

A professional is one who is competent at some difficult task; the term 'profession' describes either the pursuit of the work in question, or the aggregate of persons doing that work; 'professionalism' and other cognates must similarly involve reference to this central idea. (p. 86)

Accordingly, task specialization refers directly to the set of handy skills, managerial competencies, and job activities that the professional performs and manages. Challenges to this approach argue that accepted administrative principles commonly utilized to achieve efficiency such as specialization, unity of command, span of control, and organization by purpose, process, clientele, or place, cannot be validated (Simon, 1946).

In light of the issues surrounding NPM (Hood, 1998; Pollitt, 1993) and challenges confronting its administrative principles (Simon, 1946), this dissertation attempted to bring attention to the job tasks public administrators once cherished by identifying the specific job tasks performed and managed by practitioners.

**Justifying quantitative method.** This study was empirical since actual observations are being used to gather data for analysis and the goal is to determine relationships, or correlations, between a dependent and independent variables. The study was quantitative because of the statistical analysis employed in order to identify a particular phenomenon across particular groups (Babbie, 2010; Muijs, 2010). A quantitative methodology was incorporated based on its alignment with scientific management, purist model, and modern administrative traditions that seek to measure variables such as costs, revenues, utilization, capacity, or performance. The advantages of quantitative methodology include the facilitation of numerical data for groups and simple ordinal nature of survey responses from respondents. Whereas qualitative inquiry often raises more issues through broad and open-ended inquiry than existed prior to the execution of the research study and involves understanding of values, beliefs, and assumptions (Choy, 2014), which would be more aligned with the public procurement broker, a postmodern view of professionalism would not coincide with the availability of secondary data in the 2012 UPPCC survey instrument.

In this study a descriptive approach using factor analysis was conducted as a means for examining the job tasks that are completed by public procurement practitioners, as well as making comparisons according to various organizational demographics. Factor analysis was chosen over the many other quantitative statistical techniques available for use such as analysis of variance (ANOVA), multiple linear regression, discriminant analysis, or concordance analysis. Factor analysis was used in this study because it offers a method of

studying correlational relationships between independent and dependent variables when there were numerous independent variables. It would have been difficult to determine relationships between variables; a correlation matrix of 75 variables would have 5,625 cells and, therefore, daunting to analyze all relationships between all variables. With factor analysis, no variables needed to be excluded from the model that should have been included. No variables were included that serve to disturb the validity and present biasness, as in the case of bias in multiple regression, where, for example, issues of multicollinearity can greatly alter the values of the dependent variable. With multicollinearity, correlations between two variables may affect the correlation between one of these variables and a third variable, for example. Hence, using multiple regression, it would have become difficult determining which independent variables to include in the model, especially if the goal was to hone in on specific relationships between variables once certain independent variables became less important to the analysis. Differently, the factor analysis allowed relationships to be uncovered between job tasks that may have formed according to the latent variables (factors) that each group of job tasks highly loads; therefore relationships between independent variables may be illustrated through dimension reduction whereby factors indicated commonalities between job tasks.

ANOVA was not used in this study because it only allows for the testing of one independent variable at a time. Multivariate analysis of variance (MANOVA) was also not used because it required combinations of independent variables to be set by the researcher in producing results for multiple dependent variables.

Multivariate analysis of covariance (MANCOVA was not used here because it presented the same issue as MANOVA, even though relationships between dependent variables can be studied, which does pose a benefit in understanding relationships between dependent variables, such as in the factors that were output here. Multiple linear regression was not employed because it is a prescriptive analysis, meaning that it serves to make a correlational projection on what typically would happen. The purpose here was to first identify the job tasks of the field before attempting to surmise the potential to advance the descriptive analysis; not enough is known about the structure of the variables to begin to derive linear models given the consideration of bias and exogenous variables. These issues may surface by including too much disturbance in the model (including exogenous variables in the model), or in the form of multicollinearity as previously discussed. Discriminant function analysis was not used in this study because this research study was exploratory in nature. For example, it is not known to what extent or in what form task specialization exists in public procurement. Discriminant analysis tests variables between groups such as job classifications or organization size, and there are many control variables that could be used in this type of analysis, creating an infinite number of combinations needed to test. As a result, discriminant analysis was more appropriate for studies where the hypotheses are well grounded in empirical findings from other studies that have been conducted previously.

Concordance analysis assesses the degree of agreement between two measuring techniques and is used to establish the validity of rating systems. If

task specialization were already determined to be present in public procurement, and the criteria could be effectively operationalized through hypothesis testing, then a rating system could be developed that concordance analysis could test, such as levels of task specialization across practitioner job classification. Like discriminant analysis, concordance analysis is confirmatory in nature and not appropriate for the early stages of examining professionalism in public procurement using quantitative methods in measuring task specialization through completion rate of job activities.

### **Secondary Data Issues**

There were both strengths and weaknesses to using secondary data in this research study. One of the strengths of using secondary data was that the researcher is distanced from the data collection process. While this would be an issue if the secondary data did not suffice to fulfill the objectives of the research project, it was a positive aspect when it comes to justifying the validity of the study by knowing that the researcher did not influence the data collection process to an extent that it would affect the measurement or results of the study (Donnellan & Lucas, 2014; Nishibisha, Jones, & Kraner, 2014). Additionally, the UPPCC is a renowned credentialing body in the field of public procurement so their affiliation with the survey added a level of credibility to the body of work. Also, the fact that the survey had already been administered by the UPPCC enabled full time and attention to be devoted to theory development, research design, data analysis, and write-up of the research study. In addition, since the UPPCC administered a similar survey in 2007, there is a longitudinal aspect to

the 2012 survey that served as the basis of study in future research, or for even a third survey. Lastly, new insights can be drawn from the secondary data that were not considered by the research body that designed and administered the survey. As an example, the original purposes of the survey may have been geared to addressing a particular research objective or answering certain research questions that may be different from the goals of the researcher using the secondary data. Therefore, additional considerations from the secondary data, which may be found to be related and useful, can contribute to the research study or the researcher using the secondary data.

Several issues with regards to using secondary data and survey instruments, such as validity, reliability, and limitations of the research design, needed to be addressed. Two of the main challenges that arise when using secondary data are validity and reliability. First, content validity refers to the extent by which the measure samples the domain adequately (Westen & Rosenthal, 2003). The large number of job activities (75) and the consultation of UPPCC SME's in designing the survey instrument sufficiently address issues related to content validity. Meanwhile, the issue of criterion validity, such as the ability for the indicator values (job activity questions) to reflect accurately practitioners' management of job activities, was also not an issue because survey respondents quite simply have either managed the given job activity currently or in the past. There was no regard as to the extent or frequency of managing job activities (this study looked at the proportion of practitioners managing each job activity); therefore, criterion validity was not an issue. The



data likely reflected a true action of a job activity being managed. Third, construct validity, which deals with the ability to use the measures to make assessments and reach conclusions in the study (Nunnally & Bernstein, 1994), was addressed through use of measurable job activities that were developed by public procurement SME's. The descriptive statistics of each job activity managed indicated how characteristic the surveyed set of 75 job activities was of job activities in the public procurement profession. It was predicted that the SME's accurately developed job activities that were reflective of tasks managed in public procurement, which then served as a basis for examining relationships between organizational demographics and management of job activities.

External validity and predictive validity did not have major impacts on the results found in this study. With regards to external validity, the fact that practitioners serving a breadth of roles and responsibilities through 17 different job descriptions completed the survey as well as practitioners from 15 different industries within the public sector ranging from K-12 education, higher education, and health care to military, federal, state, and local government organizations indicated that the results of this study were not biased according to certain types of procurement practitioners. The survey was completed by public procurement practitioners from various kinds of agencies and organizations. Additionally, the job tasks chosen for inclusion in the survey were consistent with the occupational duties being completed by a breadth of public procurement practitioners according to the U.S. Bureau of Labor Statistics (Steinfeld, Prier, & McCue, 2015), so it could be assumed that the job tasks included on the survey provide a

solid foundation with which to baseline job tasks in public procurement and begin mapping for job positions and organization size. With regards to predictive validity, something to consider was that practitioners may have reported performing a job task when they really manage the job task, or the other way around. While this potential discrepancy could have affected the results of the data analysis, the distinction between performing and managing was somewhat simplified, in that there was no scaling issue or numerous ordinal measure where strength, intensity, or preferences with regards to response choices may have become obfuscated, such as in a 7-point Likert scale.

**Survey data reliability.** Reliability was an issue in this study for two reasons. First, response bias, which is the effect of nonresponses on the survey's estimates (Creswell, 2009), could have changed the survey results. Of the 30,980 valid email addresses to which surveys were sent, only 2,593 respondents completed the survey. A different combination of respondents would have likely resulted in varying results regarding managing of job activities, especially given the large number of job activities surveyed (75).

By looking at the respondent profile, a much larger proportion of women completed the survey than men, at 63.2% and 36.6%, respectively. While there was no data available on the demographics of the public procurement field as a whole, it was estimated that at least 50% in the field are men, especially considering the *old boys club* that traditionally existed in fields with reliance on financial and social networks. Without comparative data of the field in general, it is difficult to make inferences with regards to response rates based on categories

such as age or gender. Demographic statistics on respondents such as age are provided in the following chapter.

Next, there may be a second reliability issue in the study. If the 2,549 respondents were to complete the survey a second time, there may be a reliability issue on some of the more generalizable job activities such as *facilitate movement of goods* or *conduct value analysis* whereby job activities may relate to a large number of processes that could be considered arbitrary to the surveyed job activity. For example, facilitate movement of goods could be an indicator for processes as varied as making a call to resolving a delivery issue to designing distribution channels, even though job activities regarding resolving disputes and distribution channels already exist on the survey.

Additionally, if a call was placed to resolve a delivery during one period but not another, then a survey respondent may have had a different response as to whether that particular job activity was managed. However, in some cases, it may be unlikely responses would change across periods, as respondents' perception of whether or not they managed job activities may remain consistent for the purposes of job activity recall or filling out a survey. Furthermore, responses may not change over time since the expectation may be that job activities managed in the past may be required or repeated in the future.

**Response and nonresponse bias.** There were additional potential issues regarding response bias. Response bias can also refer to a situation where the true value of the variables in actuality, do not reflect the values captured by the survey responses, known as measurement error (Winter, 2010).

If response rates are low then response bias may be present. Response rates to Internet-based surveys (e-surveys) have been steadily declining in the past decade and typically are around 25-30%, but are expected to be lower if size and expense if respondent pool is large, which was the case for the national distribution of the 2012 UPPCC survey. The response rate for the survey was 8.36% (2,593/30,980), which is low at a glance yet fully acceptable given the  $n$  of 2,593. Any value for  $n$  over 2,401 ( $((\frac{z \times \sigma}{E})^2 = 2401)$ ) was considered satisfactory, given a reasonable 95% confidence level, a tolerable 2% error, and even given a maximum standard deviation of .5 (Meier & Bohte, 2012). Essentially, the large sample size ( $n = 2549$ ) indicated that there were enough data points to create a distribution of data by which the data could reflect true values and patterns between the values may emerge. Also, since the survey was estimated to take 35-45 minutes to complete, response rates were expected to be still lower. Those respondents that did take the time to complete the survey may have provided higher than-typical quality responses as a result.

For e-surveys, response bias may be present when large portions of survey respondents do not participate in the survey such as this study with a 91.64% nonresponse rate. Consistent with the powers of  $n$ , Cook, Heath, and Thompson (2000) conclude after conducting a meta-analysis of e-surveys that response representativeness is more important than response rate, unless the response rate bears on representativeness. One way of dealing with a lack of representativeness is to weigh the study sample segments, to reflect the greater population attributes (Fincham, 2008). For this study, representativeness was

achieved through administering the survey to practitioners who belonged to a range of professional associations across various public sectors such as transportation or education. While the professional orientation of survey respondents helped generate data with respect to a wide array of job tasks (75), some of which may only be completed by more advanced public procurement practitioners, the field of public procurement as a whole is likely to consist of practitioners who generally are not as professionalized as the respondents who took part in this survey.

An additional source of bias may result from systematic differences in the survey respondents' perception of themselves and their duties. For example, perhaps a director of procurement indicated managing of a particular job activity that the respondent associated with the job position, but does not actually manage. Likewise, a survey respondent may actually manage job activities that were not associated with the job position and therefore may not indicate the job activities as being managed on the survey.

Also, nonresponse bias may be an issue, whereby survey respondents choose not to participate in the survey and therefore the data results do not accurately reflect the data, as it exists across the targeted group. It is possible to conduct a post-survey adjustment for nonresponse bias, but would typically require the use of auxiliary variables. Hence, the value of compensating for nonresponse bias was dependent on the design and quality of the auxiliary variables (Groves, 2006). There are various ways to incorporate auxiliary variables, if nonresponse bias is deemed to be an issue based on either a very

low response rate or an indication that a substantial demographic is missing from the survey. To do so, the demographics of the respondents can be compared to the demographics of the greater population. Also, the survey respondents can be compared to non-survey respondents, if that information is available. Additionally, early responders can be compared to late responders or a random sample of respondents can be followed-up with an additional survey based on some of the original surveyed questions (Welch & Barlau, 2013). By following up the survey with a randomized group, with the second survey containing questions from the original survey, then similarities or differences in results may be examined for biasness.

Furthermore, there may be an issue regarding missing variable bias, where exogenous variables that are not included in the research study impact results of the data analysis. Clarke (2005) contends that the issues posed by omitted variable bias cannot be ameliorated in social sciences research and believes that inclusion of additional control variables to capture exogenous disturbance may actually increase the bias, potentially due to correlations between the tested variables. Additionally, Abbott and Klaiber (2011) also delineate issues of missing variable bias through claims that compensating for missing variable bias cannot be done through fixed effects. Leightner and Inoue (2012) cite issues in using instruments or proxies in place of missing variables, and instead promote the use of statistical techniques that accompany the data results such as looking at least squares or regression methods of comparing the results to what would be expected in nature.

**Generalizability.** The results of this study cannot be generalized beyond the survey respondents because influences across varying demographics, organizations, and cultures may affect the data derived from practitioners in related public procurement and administrative settings. Also, the study lacks randomness because the procurement associations that were given to the survey were arbitrarily chosen by the UPPCC.

**Data: The UPPCC Survey**

Secondary analysis of data from a 2012 survey administered by the UPPCC was utilized to study task specialization in public procurement and to test the research hypothesis. The UPPCC is the primary certification body in the area of public procurement, offering the CPPB and CPPO training and credentialing process for individuals who are able to complete the program and pass certification examinations. In 2005-2006 the UPPCC determined that it was in the best interest of the certification process to conduct a thorough job analysis of public procurement in an effort to provide a defensible, valid, and sound method to test public purchasing practitioners wishing to achieve the CPPB or the CPPO designation. In 2006 the UPPCC hired Prometric, Inc. to execute the job analysis. Prometric has a long history of conducting job analyses, developing test specifications, and administering the exams across a host of professional certifications (CPA, JD, MD, etc.). Prometric conducted the job analysis for the UPPCC in 2007 and 2012. For the purpose of this study, the 2012 job analysis was utilized for analysis. The reason that secondary data were utilized for this study was because of the large size and scope of the 2012 UPPCC job analysis

survey. It would have been difficult to replicate the UPPCC study without resources to procure SMEs in the design of the job analysis survey, obtain the large number of email addresses across the surveyed procurement associations, and attract survey completion as a result of the sponsorship of a credentialing body.

Prometric staff, with the help of SMEs, constructed the draft survey. The following job domains were covered on the survey:

#### Job Domains

Domain 1: Procurement Administration

Domain 2: Sourcing

Domain 3: Negotiation Process

Domain 4: Contract Administration

Domain 5: Supply Management

Domain 6: Strategic Procurement Planning

The survey was sent to 36,564 email addresses, of which 30,980 were valid, on May 3, 2012 (see Appendix A). Two reminder emails were sent on May 23, 2012, and May 31, 2012. There were 2,593 respondents that completed the survey, which is estimated to have taken 35-45 minutes to complete. After removing 44 respondents who were not part of the public sector, 2,549 respondents remained for collection of data. The survey was accessed via a URL link, and answers were recorded so that the survey could be saved and completed across multiple sittings. If survey respondents experienced technical difficulties or had questions regarding the survey's contents, a telephone number and email address were



provided by Prometric, Inc., stating that inquiries will receive a response within 24 hours. The final survey instrument was sent to members of the California Association of Public Procurement Officials, Florida Association of Public Procurement Officials, National Association of Educational Procurement, National Association of State Procurement Officials, National Contract Management Association, National Procurement Institute, and the National Institute for Governmental Procurement: The Institute for Public Procurement. These associations represent some of the creative and early attempts at establishing formal professionalized bodies such as the California Association of Public Procurement Officials established in 1915 and the Florida Association of Public Procurement Officials founded in 1967 with its 48th annual conference approaching. Creative efforts included the National Association of State Procurement Officials' establishment of its own procurement university, the National Institute for Government Procurement's innovative agency accreditation programs, and the National Procurement Institute's unique affiliate arrangement with the Institute of Supply Management, itself a major quasi-government procurement organization.

The survey was sent to all practitioners (30,980 valid emails) across 17 surveyed practitioner job positions within major public procurement associations in the United States. However, the study lacked randomness because the procurement associations that were given the survey were arbitrarily chosen by the UPPCC. The nonrandomness resulted in the potential for selection bias. Perhaps the respondents who are very active in their roles and take on more

responsibilities are those that are more likely to complete the survey; in other words, those practitioners who manage a lot of job activities are more likely to take on the activity of completing a survey. As a result, perhaps the managing of job tasks across these subjects is higher than it exists in the population since these subjects may be inclined to managing a lot of job tasks. To an extent, this form of selection bias exists in all social science surveys, where it could be said that the survey respondents reflect a segment of the population that is more apt to take surveys because of having more energy or willingness to commit the time and effort. Alternatively, public procurement practitioners who completed the survey could have been completing the survey according to the job tasks that the practitioner should, or ought to be managing based on their job position and affiliated roles and responsibilities, as opposed to what they actually manage, as a means of promoting the ideal-type practitioner. Nonetheless, this dataset may provide vital information regarding the field of public procurement in terms of what practitioners actually do because the survey is the largest of its kind in size and coverage of major associations, as well as the high degree of professional attributes of the survey respondents. Therefore, this dataset has the potential to provide information with respect to model public procurement practitioners, serving as a baseline for the occupation while looking for characteristics between respondents based on job position and organization size, especially given the breadth of practitioners surveyed.

## Data and Variables

**Research variables.** The survey instrument addressed task completion for each of the 75 job tasks surveyed. For each job task (Appendix A), the practitioner is asked the following: “Indicate whether you perform or manage the task in your current role,” in which survey respondents were asked whether or not they (a) perform, (b) manage, (c) both perform and manage, or (d) neither perform nor manage, each of 75 tasks (Appendix A). Each survey response is coded accordingly in IBM SPSS: 1 = perform, 2 = manage, 3 = both perform and manage, and 0 = do neither (Table 1). However, in order to specifically look at “performing,” “managing,” and “performing and managing” separately, the variables must be recoded for each subsequent analysis. For the factor on job tasks performed, the “manage” responses must be eliminated, so the variables are recoded such that: 1 = perform, 0 = manage, 0 = both perform and manage, 0 = neither perform nor manage. When conducting a factor analysis on job tasks managed, “performing” responses are not included in the correlation calculations so the recoding would be as follows: 0 = perform, 1 = manage, 0 = both perform and manage, 0 = neither perform nor manage. And when looking at job tasks performed and managed, the coding is: 0 = perform, 0 = manage, 1 = both perform and manage, 0 = neither perform nor manage.

Table 1

*Recoding Job Activities Independent Variables*

Variable name:	Upholpromisvisval	Upholpromisvisval
Survey response	Coding	Recoding
Neither perform nor manage	0	0
Perform	1	1
Manage	2	0
Both perform & manage	3	0

When looking at job positions, the same recoding technique is used to convert the 17 job descriptions into five job positions, whereby each job description is reassigned a job classification code of 1 through 5 (Table 2) for the purposes of avoiding the assumptions inherent to a more distinct 17 job description hierarchy. Whereas it would be difficult to compare results with respect to 17 job descriptions, it is more manageable to make a comparison across five consolidated job positions. Additionally, grouping job descriptions into job positions helps avoid issues in which the more finite job descriptions may become obfuscated to an extent where it is difficult to highlight distinctions in the data.

Table 2

*Recoding Job Descriptions Into Job Positions*

Survey response	Coding	Recoding	Position
CPO	7	5	CPO
Director/Manager of Procurement	5	5	CPO
Assistant Director	2	4	Procurement Manager
Program Manager	13	4	Procurement Manager
Program Supervisor	14	4	Procurement Manager
Contract Administrator	4	3	Procurement Analyst
Finance/ Accounting Manager	8	3	Procurement Analyst
Risk Management Supervisor	15	3	Procurement Analyst
Compliance Officer	12	3	Procurement Analyst
Consultant	3	3	Procurement Analyst
Legal Admininstrator/ Counsel	11	3	Procurement Analyst
Intermediate Buyer	9	2	Buyer
Entry-level Buyer	6	2	Buyer
Administrative Support	1	1	Procurement Assistant
Warehouse Inventory Manager	16	1	Procurement Assistant
Warehouse Inventory Support	17	1	Procurement Assistant

When looking at organization size, the organization size variable needs to be recoded to arrange groupings that help streamline the computations for the purposes of generating analyzable data. According to the U.S. Small Business Administration, small businesses constitute organizations with 500 or less employees (Small Business Administration, 2012); the same scale was used here when recoding (Table 3).

Table 3

*Recoding Organization Size*

Variable name:	organizationsize	Orgsizerecode
Survey response	Coding	Recoding
1-100 employees	1	1
101-500 employees	2	1
501-1000 employees	3	2
1001-5000 employees	4	2
5001-10,000 employees	5	3
>10,000 employees	6	3

**Sampling.** The sampling frame in this study entailed the consolidated list of all members of some of the major national procurement associations in the United States, a total of 36,654 email addresses for association members, only 30,980 of which were valid email addresses. However, it was assumed that if the survey were sent out again to the 30,980 association members, then a different number and combination of respondents would complete the survey. For example, it is likely that some respondents who passed at the opportunity to participate in the survey may have decided to take the survey. It is also likely, that across the 75 job activities questions for which respondents were asked whether or not they perform, manage, both perform and manage, or do neither, respondents who complete the same survey twice will likely have some different responses, such as the respondent indicated “performing and managing” of a particular job activity the first time the survey is taken and indicated solely “managing” the same job activity the second time the survey is completed. As a result, the performing, managing, and both performing and managing rates of job activities would vary depending on the number and combination of survey

respondents as well as any inadvertent decision making when respondents complete the survey. Despite this, this potential deviation among different respondents is assumed to be random, and therefore may not be reflected in the results if patterns are not drawn with other respondents.

The sampling error can be captured through calculating the standard deviations of the performing, managing or both performing and managing of each job activity across the sampling population. With a low response rate of 8.34%, the sampling error may be large because there is a greater chance that a subsequent sampling population would contain a much different combination of respondents who could have different measures of managing job activities. Yet, the fact that the sample size is large (2,549 respondents), it is likely that the responses reflect the larger target population as the weighting of a few irregular responses would be nullified with each subsequent response. The sampling error is reflected in the standard deviation of survey responses, although there is no data set to compare the standard deviations to determine what constitutes high standard deviations; so levels of statistical significance were measured using the typical social sciences confidence level of 95%, indicating that the sampling results, in this case correlations, would be reflective of the true population with 95% confidence.

## **Methods**

**Task specialization in public procurement.** To study task specialization in public administration, factor analysis was conducted on task completion responses regarding public procurement practitioner job tasks. These responses

may have provided insight as to what job tasks were performed, managed, and both performed and managed by public procurement practitioners. The job tasks that were correlated with each factor (latent variable) share a relationship that reflects the extent to which job tasks were completed together and the nature by which these job tasks were related. The combinations of job tasks loaded on each factor reflected the job tasks performed, managed, or both performed and managed by public procurement practitioners, and these combinations of job tasks completed by all practitioners can be compared to the factored job tasks for each job position and according to organization size. The combinations of job tasks performed, managed, or both performed and managed by surveyed practitioners were indicative of task specialization, as various combinations of job tasks may be deemed to be specialized through differentiating according to job position or organization size.

**Factor analysis.** An exploratory factor analysis was conducted on responses to task completion questions regarding execution of practitioner roles and responsibilities. The results demonstrate which, if any, job tasks share empirical relationships in terms of practitioners performing and managing specific job tasks, especially with respect to job position and organization size. The number of factors to extract for each factor analysis was determined by drawing a scree plot. The scree plot graphs the factors on the x axis and eigenvalues on the y axis. Since eigenvalues represent the total amount of variance explained by each factor, eigenvalues give a summary view of how the factor will cumulatively load across all variables. Cattell (1966) denotes the challenge in factor analysis



is separating important factors from random error. The scree plot is used to locate a transition point in the function by demonstrating relative changes in eigenvalues across factors in order to determine the number of factors that will result in the highest loadings.

Once the appropriate number of factors to extract was determined by looking at the scree plot, then the factor analysis was executed with the objective of testing the hypotheses:

$H_1$ : There is a relationship between job tasks that are performed, managed and both performed and managed based on job position.

$H_2$ : There is a relationship between job tasks that are performed, managed and both performed and managed based on organizational size.

Using the .6 correlation threshold (Kline, 1994; Nunnally & Bernstein, 1994), each job task that highly loads a common factor was grouped together. These groupings served as the broad constructs of public procurement and provided insight as to KSA's implicit of job tasks. As part of the factor analysis, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was run to determine the extent to which the variable correlations were factor analyzable. Communalities between variables were analyzed for the amount of variance explained on one variable by all other variables (job tasks), known as the  $h^2$  value (equivalent to the interpretation of  $r^2$  in regression analysis), and the structured matrix was compared to the factor matrix to determine any effects of algorithmic rotation that could be applied to achieve more robust results (see Analytic Rotational

Procedures section). Meanwhile, the pattern matrix was analyzed for the variable weightings used to calculate rotated correlations on the structure matrix.

The goal of the factor analysis was to identify relationships between job tasks for the purposes of identifying what public procurement practitioners actually do, and achieving a better understanding of the relationships between job tasks and overarching competency areas. The goal was to better understand the task specialization and expertise within public procurement so that education and training programs; perhaps even textbooks, could be designed around these broad constructs. The specific relationships between job tasks also presented an area of further inquiry into the subject matter in terms of the way that practitioners approach and complete their work and how this impacts functions in public procurement and administration.

**Factor analysis with nominal variables.** The justification for using factor analysis given the nominal independent variables under study is explained in this section. The scholarly literature has presented both challenges to, and reasoning for, employing exploratory factor analysis given nominal variables. For instance, Carroll (1945) cites the polar scale of values in nominal variables, in which factor loadings depend on not only the strength of the relationships between variables, but also the means of the individual variables as well. In the current coding scheme, that means that with a factor analysis of job tasks, it is not possible to calculate means for the accumulated values of the independent variable because respondents cannot partially perform a job task; a respondent either manages the task (coded as 1) or does not manage the task (coded as 0). Applying the

argument that if half of all respondents reportedly manage the job task, then this mean value would be calculated as .5. It is impossible for these mean values from discrete variables to be accounted for in factor space (eigenvalues), thus the factor loadings that were calculated to reflect relationships between variables excludes this influential parameter.

Additionally, McDonald and Ahlawat (1974) argue that since the values of 0 and 1 for a dichotomous variable are bounded, a regression analysis for a given factor cannot be linear. As a result, the factor analysis model will be misspecified since the optimal linear approximation for a curvilinear relationship, which in the case for reference vectors in a factor analysis, depends on the area of the scatterplot from which the data were interpreted, which is a function of the mean of the nominal variables (Mislevy, 1986). This implies that a scatterplot constructed across a best-fit line with binary variables will fail to result in linear patterns since variables are not continuous and therefore share no implicative relationship with the estimator. Furthermore, Mooijaart (1983) would point out that since the coefficients for factor loadings also depend on skewness of these discrete variables—which for binary variables is a function of their mean values—this suggests that since the mean values of nominal variables tends to approach .5 given a calculation of means dealing with 0 and 1 values, the patterns emerging from relationships between independent variables is unfavorable for determining factor loadings. The result would be various *cutting points* in the reference vectors from an inability to incorporate skewness into the relationships

between variables and therefore a potential miscalculation of factor loadings (Mislevy, 1986).

However, despite the perceived obstacles to conducting exploratory factor analysis using nominal variables, solutions were presented in the literature that combat these issues and serve to explain the benefits of this data reduction technique when working with nominal variables. Christoffersson (1975) presents one potential solution to issues of using exploratory factor analysis when examining relationships between nominal variables. By taking into account the magnitudes and interrelationships of sampling errors among the variables, Christoffersson (1975) derives an approach for a consistent estimator for the parameters of the factor analysis model. In contrast to the aforementioned conventional issues with respect to statistical tests of model-fit, linear indeterminacies can be eliminated when sample size is large (in this study  $N = 2,549$ ) because the data began to follow either a chi-square or normal distribution, depending on the implied conditions of the researcher. These solutions were less restrictive than generalized least-squares best-fit estimators and enabled standard errors of estimation to be calculated. These estimation errors are reported in the covariance matrix output in SPSS and reflect the square roots of the diagonal elements in factor space for standard errors of individual parameters.

Therefore, by generating the covariance matrix, the relationships between variables as illustrated by factor relationships begins to reflect what would otherwise be continuous variables. Since factor analysis solutions are iterative,

that is, the process for generating factor loadings involves numerous tests of relationships among the data, the discrete nature of nominal variables becomes interpolated in factor space whereby three-dimensional diagonals form in factor space that overarch the initial binary characteristic of nominal variables (Mislevy, 1986). In addition, Muthen (1978) presents a solution in which exploratory factor analysis of nominal variables can be linearized. Muthen (1978) advocates use of three-way and four-way joint proportions to compensate for the one-way and two-way limitations of binary variables. Here, the strength of the correlations between variables serves as a comparative proportion by which proportions of correlations contribute to the calculation of factor loading coefficients. Hence, the dynamic relationships between independent variables are illustrated by covariances, whereby relationships between independent variables, and independent variables and factors, linearize the model by approximating these complex relationships (Muthen, 1978).

Furthermore, the maximum likelihood statistical technique utilized herein for attaining the rotated factor solutions presented an additional resolution to traditional challenges of exploratory factor analysis of nominal variables. Recall that the maximum likelihood algorithmic method is employed in this study which seeks to choose the most probable outcome given the data and their variances (Kline, 1994; Nunnally & Bernstein, 1994). Thus, the maximum likelihood method uses whichever combination of correlations between variables accounting for the most variance for the purposes of the factor loading, therefore, resulting in a mathematically possible, albeit potentially not actual, solution. Basically, the

binary nature of the nominal variables means that the data will converge either to the minimum 0 value or the maximum 1 value (Bartholomew et al., 2011). But, with the maximum likelihood statistical technique, the fixed rates of binary values are replaced by multi-dimensional relationships in factor space through behavior of reference vectors by which these dimensions are the result of weightings according to measured relationships assigned to each point as given by the product of the weights associated with each coordinate (Bock & Aitkin, 1981; Bock, Gibbons, & Muraki, 1985). Essentially, the binary relationship of coordinates on x and y axes is replaced by a summation of relationships as determined by the product of weightings generated through the maximum likelihood technique wherein factor iterations rotate the solutions to a point that explanatory power is optimized according to underlying relationships between variables.

Depending on the strength of the underlying relationships between variables, weightings are assigned to each relationship to proportion the impact that a given correlational measure has on determining factor loadings. As such, the binary characteristic of nominal variables is reflected in factor space through measures of data points on the x and y axes when there is no analytic rotational procedure applied, thereby indicating that factor analysis is binary in nature to begin with; therefore, factor analysis is not constrained by binary variables under study. However, advanced metrics were achieved through rotational procedures, such as the maximum likelihood method, which also served to combat limitations initially believed to persist when conducting factor analysis using nominal

variables. To reiterate, use of analytical rotational procedures served to integrate a functional characteristic of the relationships between the binary characteristic of variables such that the dynamic inherent to examining relationships between numerous variables (75 independent variables here) and factorials was captured through proportioned weightings that cumulatively served as functions for ultimately determining output coefficients for factor loadings (Winsberg, Thissen, & Wainer, 1982).

**Analytic rotational procedures.** For the statistical estimations underlying the factor analysis, the maximum likelihood method (Lawley, 1943) was selected over other algorithmic techniques such as principal components or generalized least squares. While principal component factor analysis is useful when testing for unidimensionality, as is the case when extracting for a single factor  $g$ , the assumption that all variances among variables are systematic, that is, the variance for each variable is 1.0 and is thus fully explained by the other variables included in the study, was not realistic for this practitioner-derived data and may serve to overestimate the factor loading on  $g$ . Generalized least squares estimation method was not incorporated because of the arbitrary weighting that is involved with this technique, which puts weighting emphasis on the data that have the most in common with other data, thereby potentially overestimating the results. Instead, the maximum likelihood algorithmic method was employed, which sought to choose the most probable outcome given the data and its variances (Kline, 1994; Nunnally & Bernstein, 1994). Thus, the maximum likelihood method uses whichever combination of correlations between variables

accounts for the most variance for the purposes of the factor loading, therefore, resulting in a mathematically possible, albeit potentially not actual, solution. Put differently, the generalized least squares method may assign weightings to variables that deem the variances loaded to the factors as unrealistic or not feasible. For example relationships may be drawn that are not mathematically possible based on correlational values established between other variables, or if a correlation were to exceed the perfect correlation of 1.0. Basically, the binary nature of the nominal variables means that the data will converge either to the minimum 0 value or the maximum 1 value. Thus, the nominal variables in this study were not fit for generalized least squares because these binary data points all fell equidistant from the best-fit line (Bartholomew et al., 2011), limiting the findings that could be drawn.

Additional statistical procedures such as factor rotation accompanied the factor analysis. Gorsuch (1983) details more than 20 statistical procedures for achieving more interpretive data. Thurstone (1947) suggests a criterion for the simple structure rotations of factors. The aim of factor rotation is to induce more robust results by yielding a few high factor loadings with numerous zero or near zero factor loadings that would leave several variables uncorrelated with the factor (Brown, 2009). While manipulating factor loadings for ease of interpretive analysis may render the actual factor loadings as non-real, if the goal of the factor analysis is simply to extract factors, especially those that are more highly loaded, then simple structure rotations may yield more real-world applicative results. Cattell (1978) supports the rotation of factors based on replication of the



statistical procedure, whereby the factor rotation yields consistent factor loadings every time the study is replicated, which is a major tenet of meeting the standards of empirical rigor and scientific research.

Oblique factor rotation was chosen for this analysis because it allowed for factors to be correlated with each other, which was assumed to be the realistic case between practitioner job tasks across numerous agencies and governments. On the other hand, if necessary, orthogonal factor rotation was implemented for the purposes of discriminating results in cases where factor loadings were marginal, since orthogonal factor rotation holds other factors constant and therefore maximizes factor loadings. Orthogonal rotation holds each subsequent factor constant when loading on factors (each factor is made to correlate zero with one another), which leads to an over-measurement of cumulative variances being reported in the study across factor loadings, which is why the oblique approach was used here. Whereas orthogonal rotation limits variables to being inter-correlated according to right angles with respect to the intersection of the x and y axes, oblique rotation is more complex and allows for reference vectors to be situated along factor axes that can take any position in factor space. As a result, a pattern matrix can be deduced which gives the weights assigned to each variable that was used to produce the rotated factor loadings. In simple structure orthogonal rotation, the pattern and structural matrices contain identical values because there is limited interaction between variables in assigning correlations (Kline, 1994). Thus, oblique rotation is a more

dynamic approach that attempts to capture how correlations would be affected given factorial variances as well as correlations between variables.

There were two statistical procedural oblique rotation techniques available for use with SPSS, including promax and direct oblimin. Hakstian (1971) argues that direct oblimin is superior to promax because it allows for better consideration when certain clusters of variables may largely impact correlational distributions. Meanwhile, promax can be somewhat limiting, despite its oblique quality, because it assigns exponents to the orthogonal, or non-weighted pattern matrix, in order to maximize the variances of variables on each factor (Hendrickson & White, 1964). Thus direct oblimin functionality was used because it was a more powerful technique that had been favored with the prevalence of computer software, and it allowed for more expansive rotation according to factor patterns without limitation to rotation according to powers (exponents) as in the case of promax.

**Limitations in the research design.** The research design was limited in its comparative scope; there was no set of job tasks to compare those in public procurement and job tasks performed and managed by other public administrators. Thus, the job tasks reported by public procurement practitioners may be frequently completed within public procurement but do not necessarily serve to differentiate the field as an occupation or profession from related fields by comparison.

Also, there were limitations in terms of drawing conclusions using factor analysis. Factor analysts may disagree as to which factors are the most

important in the study or how many factors to extract (Kline, 1994). Also, factor loadings may change if different numbers of factors are extracted. Furthermore, since the factor analyses include various control variables, each factor analysis could be suited for a different number of factors. Despite this, if using the same independent variables for each factor analysis, which was the case in this study, then differences in the number of factors loaded provided for a point of discussion for the results. Factor analysis also met the scientific rigor of replication because the correlations between variables did not change over the course of subsequent analysis.

Yet, one difficulty with regard to replication of studies using factor analysis deals with the psychometric aspect of the analysis—the qualitative judgment used to label factors. In the case of the qualitative judgment used to label or name each factor, first cycle coding methods, more specifically domain and taxonomic coding, that look at the language used in describing the behavior and activities underlying highly loaded variables as well as considering what the variables actually entail can be used to determine appropriate names for the factor, known as grammatical and elemental coding (Saldaña, 2013).

### **Chapter Summary**

The research design and quantitative methodology used to generate results of the study were detailed in this chapter. The reasons for selecting the research questions and hypotheses were stated. Professionalism in public procurement was described in addition to the reasons for choosing factor analysis over other correlation analytical techniques. Subsequently, numerous

secondary data issues were discussed, in addition to the generalizability of the study despite some response bias and validity issues. The UPPCC survey instrument and process for collection of data was explained including factors related to selection bias and nonrandomness. The survey design and the research variables, including measurement of data and the sampling frame, were also presented. Lastly, quantitative methods for examining the hypotheses, notably factor analysis, were detailed to outline the computations necessary to achieve results. In the next chapter, results are generated whereby factor analysis is used to examine for relationships between practitioner job tasks to provide insight into the job tasks performed, managed, and both performed and managed by public procurement practitioners.

## CHAPTER 4: FACTOR ANALYSES ON JOB TASKS OF ALL PRACTITIONERS

This chapter provides results of the factor analyses on job tasks completed by all practitioners surveyed to establish a baseline for the field. Some demographical information about the survey respondents is provided first. Then, attributions of respondents are provided such as years of experience, attainment of procurement certifications, and membership to professional associations, among others. Descriptive statistics are provided on the sample population and on performing, managing, and both performing and managing job tasks of all public procurement practitioners surveyed.

To establish a baseline for all practitioners with which to make a comparison to job positions and organization size, four factor analyses are conducted, one for each of job tasks performed, job tasks managed, job tasks both performed and managed, and job tasks performed or managed, by all public procurement practitioners surveyed. This first round of factor analyses provides a baseline for practitioners with which to compare job tasks of varying job position and organization size. Additionally, these baseline job tasks for all practitioners provide a benchmark for the field

## **Descriptive Statistics**

**Demographics of survey respondents.** The survey respondents represent a pool of public procurement practitioners consisting of a variety of attributes and characteristics. First of all, the demographics reflect the following percentages according to gender and age, whereby 63.2% of respondents are women, 8.4% of respondents are under the age of 35, 21.8% of respondents are between the ages of 36-45, 41.7% of respondents are 46-55, 26.6% are 56-65, and 1.6% are 66 or older. Additionally, survey respondents reflect a wide array of formal education backgrounds: 22.6% attained a high school diploma or equivalent, 17.1% have an associate's degree, 40.6% a bachelor's, 18.3% a master's, and 1.5% have earned a doctorate.

The group of respondents also represents a group of practitioners across various job positions and sizes of organizations. Of the respondents, 5.5% belong to an organization with less than 100 employees, 20.6% belong to an organization with between 101 to 500 employees, 16.2% belong to an organization of 501 to 1000 employees, 31.1% belong to an organization with 1001 to 5000 employees, 12.5% to an organization with 5001 to 10,000 employees, and 14.1% belong to an organization with more than 10,000 employees. In addition, the job descriptions of survey respondents reflect a dynamic pool of respondents considering that practitioners reported identifying with 17 different job descriptions surveyed, as well as various amounts of time served in those roles (see Tables 4 and 5). This breadth of practitioner

categorizations enables a broad and diverse scope of inquiry with respect to what practitioners actually do on their jobs.

Table 4

*Job Descriptions of Survey Respondents*

Description	Frequency	Percent
Administrative Support	91	3.6
Assistant Director/Unit Supervisor	137	5.4
Consultant	14	.5
Contract Administrator/Contract Management	281	11.0
Director/Manager of Procurement	594	23.3
Entry Level Buyer/Contract Specialist	137	5.4
Executive/Senior Administrator/Chief	118	4.6
Procurement Officer	35	1.4
Finance/Accounting Administrator	352	13.8
Intermediate Level Buyer/Contract Specialist	1	.0
Intern/Student	13	.5
Legal Administrator/Counsel	63	2.5
Procurement Compliance Officer/Auditor	72	2.8
Program Manager	31	1.2
Program Supervisor	554	21.7
Senior Level Buyer/Contract Specialist	43	1.7
Warehouse/Stores/Inventory Manager	9	.4
Warehouse/Stores/Inventory Support	4	.2
Risk Management Administrator	2549	100.0
Total		

Table 5

*Time Served at Current Job Description*

Period of time	Frequency	Percent	Cumulative percent
Less than 1 year	197	7.7	7.7
1 to 2years	247	9.7	17.4
2 to 3years	192	7.5	25.0
3 to 4years	224	8.8	33.7
4 to 5years	289	11.3	45.1
5 to 10years	695	27.3	72.3
10 to 15years	405	15.9	88.2
15 to 20years	146	5.7	94.0
20 to 25years	96	3.8	97.7
> 25years	58	2.3	100.0
Total	2549	100.0	

The respondents also identify according to a host of job descriptions in public procurement. Practitioner job descriptions are recoded to form broader categories for ease of analysis and to mitigate differences between more narrowly defined job descriptions that may vary according to department or organization. The following frequencies of surveyed practitioners according to job position can be found in Table 6.



Table 6

*Frequency of Respondents According to Job Position*

Job description	Frequency	Percent
Procurement Assistant	143	5.6
Buyer	489	19.2
Procurement Analyst	950	37.3
Procurement Manager	240	9.4
Chief Procurement Officer	712	27.9
Total	2534	99.4
Missing System	15	.6
Total	2549	100.0

**Credentials of respondents.** The survey respondents reflect a sample that is inclined toward professionalism through training and associational involvement; therefore, the sample consists of a group of practitioners that are in a good position to provide information with regards to what public procurement practitioners do for their work. The descriptive statistics of the pool of respondents are shown in Tables 7 through 9. Table 7 illustrates the distribution of membership to professional associations; consider that the column totals under *Percent of Respondents* do not total to 100% because respondents may belong to numerous associations. Table 7 demonstrates that most respondents (69%) are members of the Institute for Public Procurement (NIGP) and 32.4% are members of a state/regional procurement association, while only 17.1% are members of a procurement association not listed. This indicates the high level of involvement in associational networking and other professional activities of the respondents based on membership to professional associations. Furthermore, these respondents reflect a concentration toward the major procurement

associations given that most major procurement associations were surveyed, therefore the respondents are oriented toward a sample characteristic of the core professional activities taking place in associational networks for public procurement.

Table 7

*Affiliations of Respondents With 12 Professional Associations<sup>a</sup>*

Association	Percent of respondents
Association for Operations Management (APICS)	0.7% (18) <sup>b</sup>
California Association of Public Procurement Officials (CAPPO)	4.8 (122)
Florida Association of Public Procurement Officers (FAPPO)	7.1 (181)
The Institute for Public Procurement (NIGP)	69.0 (1758)
Institute for Supply Management (ISM)	11.1 (283)
National Association of Educational Procurement (NAEP)	6.2 (158)
National Association of State Procurement Officials (NASPO)	3.8 (96)
National Contract Management Association (NCMA)	2.9 (73)
National Procurement Institute (NPI)	2.6 (65)
Public Risk Manager's Association (PRIMA)	0.4 (10)
Purchasing Management Association of Canada (PMAC)	2.3 (59)
State/Regional Procurement Association <sup>c</sup>	32.4 (826)
Other, please specify	17.1 (437)
Average	12.3% (314.3)

<sup>a</sup> Of those given to respondent <sup>b</sup> Ns in parentheses <sup>c</sup> These respondents were sent the survey through a non-state organization whereas CAPPO and FAPPO were distributed the survey. Source: Steinfeld et al., 2016.

Table 8

*Distribution of Professional Associations by Certification*

Number of associations	Respondent certification		
	No certification	At least one certification	All combined
None	20.1% (144) <sup>a</sup>	6.7% (123)	10.5% (267)
One	40.6 (291)	35.2 (645)	36.7 (936)
Two	31.1 (223)	41.8 (765)	38.8 (988)
Three	7.3 (52)	12.3 (225)	10.9 (277)
Four or more	1.0 (7)	4.0 (74)	3.2 (81)
Total	100% (717)	100% (1832)	100% (2549)

<sup>a</sup> Ns in parentheses. Source: Steinfeld et al., 2016.

Table 8 shows the distribution of respondent membership to associations with respect to attainment of certifications. There is a positive relationship between professional association membership and attainment of certifications where it can be seen that only 6.7% of practitioners who belong to no professional procurement associations have at least one certification, whereas 35.2% of practitioners who belong to one professional procurement association have at least one certification, and 41.8% of practitioners who belong to two procurement associations have at least one certification. This implies a relationship between membership to procurement associations and certifications, indicating the consistent professional element inherent to respondents who join professional associations and attain professional certifications. It can be seen that 89.5% of practitioners surveyed belong to at least one professional association and more than half (52.9%) of all respondents belong to two or more associations (Table 8). Additionally, 1,832 practitioners surveyed (71.87%) have attained at least one professional certification (Table 8).

Table 9 reports the distribution of member work experience based upon whether or not the respondent is certified. It can be seen that 21.6% of respondents have 5-10 years of experience, 22.9% have 10-15 years of experience, 14.2% have 15-20 years of experience, 11.8% have 20 to 25 years of experience, and 13.3% have more than 25 years of experience. Cumulatively, a total of 83.9% of respondents have at least 5 years of experience and 62.2% of respondents have at least 10 years of experience, indicating that the respondents are reflective of a sample population that has been on the job for a long time so as to be able to garner the job tasks performed and managed by practitioners.

Also, there appears to be a positive relationship between work experience and attainment of certifications, which indicates that having more years of experience indeed has something to do with being in a position to provide information with regards to professionalism, such as through increased levels of training. More than one-third (34.4%) of respondents with fewer than 5 years of work experience do not have a certification and 23% of respondents with 5-10 years of experience have not attained a certification (Table 9). Whereas only 18.1% of practitioners with 10-15 years of experience, 9.5% of practitioners with 15-20 years of experience, 7% of practitioners with 20-25 years of experience, and 7.9% of practitioners with more than 25 years of experience have yet to attain a certification (Table 9). Additionally, only 9% of practitioners with fewer than 5 years of experience have at least one certification, whereas 21.1% of

practitioners with 5-10 years of experience, and 24.8% of practitioners with 10-15 years of experience have at least one certification.

Table 9

*Distribution of Work Experience by Certification*

Work experience	Certifications		
	No certification	At least one certification	All combined
Less than 5 years	34.4% (247) <sup>a</sup>	9.0% (164)	16.1% (411)
5 to 10 years	23.0 (165)	21.1 (386)	21.6 (551)
10 to 15 years	18.1 (130)	24.8 (454)	22.9 (584)
15 to 20 years	9.5 (68)	16.0 (293)	14.2 (361)
20 to 25 years	7.0 (50)	13.8 (252)	11.8 (302)
More than 25 years	7.9 (57)	15.4 (283)	13.3 (340)
Total	100% (717)	100% (1832)	100% (2549)

<sup>a</sup> Ns in parentheses. Source: Steinfeld et al., 2016.

### **Performance and Management of Job Tasks by all Respondents**

Computed indexes are calculated for the job tasks performed, managed, and both performed and managed by all respondents. The purpose of computing indexes is to determine whether performing, managing, or both performing and managing is more specialized by public procurement practitioners surveyed. This way, the factor analyses of all practitioners surveyed, as well as the factor analyses of job tasks by job position and organization size, can be analyzed with respect to task specialization regarding performing, managing, and both performing and managing job tasks. Table 10 shows the means, medians, and standard deviations for each computed index. It can be seen that the average number of job tasks performed by public procurement practitioners surveyed is 16.51, the average number of job tasks managed is 9.66, and the average

number of job tasks both performed and managed is 24.77. These computed indexes demonstrate that managing of job tasks, given its lowest mean, is a more specialized mode of completion for job tasks than solely performing or both performing and managing. Also, with a mean of 24.77 for job tasks both performed and managed as compared to the mean of 16.51 for job tasks performed and 9.66 for job tasks managed, practitioners most typically both perform and manage job tasks, as opposed to solely performing or solely managing.

Table 10

*Computed Indexes for Job Tasks Performed, Managed, and Both Performed and Managed by all Respondents*

Index	Perform	Manage	Both perform and manage
Mean	16.51	9.66	24.77
Median	12	3	23
Std. Dev.	15.89	13.71	19.05
Valid Responses	1518	1518	1518

The implication for professionalism and task specialization in public procurement is that surveyed practitioners in this field least often manage job tasks, indicating that practitioners assume roles and responsibilities that could potentially demand more specialized work that requires managing the job task as opposed to job tasks that can be solely performed or that are both performed and managed. It is expected that more senior practitioners specialize in managing job tasks as compared to lower-level practitioners because solely managing connotes a leadership role that precludes more remedial roles and responsibilities

associated with performing. Also, it is expected that practitioners from larger organizations are more specialized in managing job tasks since larger organizations are likely more complex in scope of activities and therefore managing other practitioners in completion of job tasks becomes more critical than performing when dealing with a breadth of organizational issues to address.

### **Factor Analysis on All Respondents for Baseline**

First, four exploratory factor analyses were conducted to provide a baseline for mapping the completion of job tasks by public procurement practitioners. A factor analysis was run for the job tasks performed (Appendix B), a factor analysis for the job tasks managed (Appendix C), a factor analysis for the job tasks both performed and managed (Appendix D), and a factor analysis for the job tasks performed or managed (Appendix E). These factor analyses show the job tasks performed, managed, both performed and managed, and performed or managed for all respondents in order to benchmark the job tasks in public procurement. Also, to determine levels of task completion for a given job position or organization level, these baseline factor analyses of all practitioners surveyed are used as a comparison. Appendixes B-E shows the results of each of the four aforementioned factor analyses. The job tasks are listed with their corresponding factor loadings. If a factor loading is .6 or higher, then that job task can be said to *load* the factor and therefore shares a correlation with the latent variable (factor). If job tasks correlate with the same factor, then these job tasks share a relationship accordingly. Again, if completion of job tasks is correlated

with each other, then it can be said that a robust case exists for consideration of these job tasks as part of the public procurement practice.

The combination that job tasks were completed is reflective of task specialization since the combinations by which job tasks were completed may reflect specialization with respect to a practitioner, which is predicted to vary based on job position and organization size. The baseline factor analyses provide a comparison with which to measure task specialization for each job position and for practitioners from various organization sizes. Also, the baseline factor analysis that immediately follows provides a comparison between job tasks performed, managed, both performed and managed, and performed or managed as well, for the purposes of better understanding the various modes of task completion in public procurement among all practitioners.

The findings demonstrate that 6 factors load across numerous job tasks for the “perform” and “manage” factor analyses, and five factors load across the job tasks for “both perform and manage” responses (see Appendixes B, C, D). Additionally, a fourth factor analysis of job tasks performed or managed demonstrates that six factors also load the job tasks. For this fourth factor analysis, job task completion is being examined according to all three measures put together, “perform, manage, and both perform and manage” (Appendix E). The implication is that the 75 job tasks surveyed are solely performed, solely managed, and perform or managed in six groupings and both performed and managed in five groupings, where each grouping consists of a combination of exclusive job tasks. The fact that job tasks load five factors for job tasks both



performed and managed indicates that both performing and managing of job tasks is least specialized as compared to the other modes of completion, which is consistent with the mean values presented in the previous subsection whereby both performing and managing is deemed to be less specialized in public procurement. Essentially, if there are fewer factors (commonalities) among job tasks, then there is less task specialization because there are fewer combinations for which job tasks are completed. The combinations of job tasks for each of the four aforementioned factor analyses demonstrate the manner in which public procurement practitioners specialize in task completion according to performing, managing, both performing and managing, and performing or managing job tasks across all respondents.

**Performing of job tasks by all practitioners.** The results of the factor analysis for job tasks performed by all practitioners surveyed are shown in Table 11.

Table 11

*Job Tasks Completed by all Practitioners Surveyed*

F	Perform	Manage	Both P&M	P or M
SU	utilizeautomprocurementsystem procurementcomplianceandlaw conductmarketresearch usehistoricalinfofordecisions identifysourceofsupplies selectmethodofprocurement upholdpromotmissionvisionvalues	Utilizeautomprocurementsystem  Conductmarketresearch Usehistoricalinfofordecisions Identifysourceofsupplies Selectmethodofprocurement		
SO	developsolicitationdocument	Selectcontracttype Developsolicitationdocument	Developsolicitationdocument	Developsolicitationdocument

*(table continues)*

Table 11 (continued)

F	Perform	Manage	Both P&M	P or M
	reviewsolicitationdocument		Reviewsolicitationdocument	reviewsolicitationdocument
	selectcontracttype		Selectcontracttype	Selectcontracttype
	solicitcompetitivequote	Solicitcompetitivequote	solicitcompetitivequote	
	solicitcompetitivebids	Solicitcompetitivebids	solicitcompetitivebids	Solicitcompetitivebids
	solicitcompetitiveproposals	Solicitcompetitiveproposals	Solicitcompetitiveproposals	solicitcompetitiveproposals
	ensuretransparentprocesses	Ensuretransparentprocesses	Ensuretransparentprocesses	ensuretransparentprocesses
	identifyevaluationmethodology	Identifyevaluationmethodology	Identifyevaluationmethodology	identifyevaluationmethodology
	conductprebidconferences	Conductprebidconferences	Conductprebidconferences	conductprebidconferences
	prepareandissueaddenda	Prepareandissueaddenda	Prepareandissueaddenda	Prepareandissueaddenda
	analyzeevaluatesolicitations	Analyzeevaluatesolicitations	Analyzeevaluatesolicitations	analyzeevaluatesolicitations
	preparerecommendationaward	Preparerecommendationaward	Preparerecommendationaward	preparerecommendationaward
	preparecontracts			Preparecontracts
			Selectmethodofprocurement	selectmethodofprocurement
			Identifysourceofsupplies	
NG	preparenegotiationstrategy	Preparenegotiationstrategy		preparenegotiationstrategy
	conductnegotiations	Conductnegotiations		Conductnegotiations
	documentnegotiationprocess	Documentnegotiationprocess		documentnegotiationprocess
		Selectnegotiationmembers		selectnegotiationmembers
SM	Maintaininventory	Maintaininventory		
	designinternaldistributechannel	Designinternaldistributechannel	Designinternaldistributechannel	
	establishwarehouseshippingprocess	Establishwarehouseshippingprocess	Establishwarehouseshippingprocess	
	disposesurplusequipmentmaterials	Disposesurplusequipmentmaterials	Disposesurplusequipmentmaterials	disposesurplusequipmentmaterials*
		accountforassets	Accountforassets	
		Followupandexpediteorders		followupandexpediteorders**
		Resolvedeliveryreceivingprobs		resolvedeliveryreceivingprobs**
		Selectmethoddisposal equipmentmaterial	Selectmethoddisposal equipmentmaterial	selectmethoddisposal equipmentmaterial*
		Facilitatemovementofgoods	Facilitatemovementofgoods	
SP	conductbusinessanalyses	Conductbusinessanalyses	Conductbusinessanalyses	Conductbusinessanalyses
	analyzeeconomictrendcondition	Analyzeeconomictrendcondition	Analyzeeconomictrendcondition	analyzeeconomictrendcondition
	conductcostbenefit acquisition	Conductcostbenefit acquisition	Conductcostbenefit acquisition	
	implementprocessimproveplan	Implementprocessimproveplan	Implementprocessimproveplan	implementprocessimproveplan
	planimplementprocurementstrategy	Planimplementprocurementstrategy	Planimplementprocurementstrategy	planimplementprocurementstrategy

(table continues)

Table 11 (continued)

F	Perform	Manage	Both P&M	P or M
		Conductvalueanalyses Implementgoalobjectivemeasures Formprocurecontingencyplan	Conductvalueanalyses Implementgoalobjectivemeasures Formprocurecontingencyplan Monitorlegislativetrendslaws Developstaffsuccessionplan Establishmissionvisionvalues Upholdpromotmissionvisionvalues	implementgoalobjective measures formprocurecontingencyplan  developstaffsuccession plan establishmissionvision values  managedepartmentpersonnel monitorsuppliercompliance
CA	monitorsuppliercompliance  modifycontractsremediatesuppliernoncompliance  resolvedisputes  terminatecontracts	Monitorsuppliercompliance      Evaluatesupplierperformance	Monitorsuppliercompliance  Modifycontracts Remediatesuppliernoncompliance  Resolvedisputes  Terminatecontracts Evaluatesupplierperformance Conductpostawarddebrief Mitigateriskthroughtermsconditions Selectnegotiationmembers Preparenegotiationstrategy  Conductnegotiations Documentnegotiationprocess Conductpostawardconference Conductcloseoutactivities  Implementoperatingworkpolicy Interpretpoliciesandprocedures Managedepartmentpersonnel Trainpurchasingpersonnel Procurementcomplianceandlaw	monitorsuppliercompliance  Modifycontractsremediatesuppliernoncompliance  Resolvedisputes  Terminatecontracts          Conductcloseoutactivities
OF				

Note. SU = Sourcing, SO = Solicitation NG = Negotiations, SM = Supply Management, SP = Strategic Procurement Planning, CA = Contract Administration, OF = Other Factor not identifiable.

\*Job tasks load their own SM factor \*\*Job tasks load a second SM factor.

When looking specifically at practitioners' performing of job tasks, the following job tasks load the first factor: (a) develop solicitation document, (b) review solicitation document, (c) select contract type, (d) solicit competitive quote, (e)

solicit competitive bid, (f) solicit competitive proposal, (g) ensure transparent procurement, (h) identify evaluation methodology, (i) conduct pre-bid conferences, (j) prepare and issue addenda, (k) analyze and evaluate solicitation responses, (l) prepare recommendation award, and (m) prepare contract.

Considering the scope and nature of these job tasks, it could be said that these job tasks are related to the latent variable according to their similarities with respect to *solicitation*. Six of 13 job tasks loading this factor contain the word “solicit” and job tasks such as identify evaluation methodology deal with solicitation because this job task helps lay out what the actual solicitation will consist of in terms of specifications to be evaluated from the bid. Also, the job task of conduct pre-bid conferences deals with solicitation because it involves interaction between purchaser and supplier at early stages of solicitation process. Subsequently, the job task prepare recommendation award would likely take place towards the end of the solicitation process. The other job tasks loaded on the *solicitation* factor such as prepare contract and select contract type could be said to involve solicitation based on the impact that preparation of the contract could have on the solicitation process, as well as selecting the contract type. Lastly, the job task of ensure transparent procurement is not surprisingly loaded on a factor dealing with *solicitation* because oftentimes lack of transparency or corruption take place in the solicitation phase where money could be awarded for contracts on an unethical or illicit basis.

A second factor loads the job tasks of (a) conduct business analyses, (b) analyze economic trends and conditions, (c) conduct cost-benefit analysis, (d)

implement process improvement plan, and (e) plan and implement procurement strategies. These job tasks deal with the area of *strategic procurement planning*. The job task, plan and implement procurement strategies, directly deals with strategic procurement planning, and the job task, implement process improvement plan deals directly with planning. Meanwhile, job tasks such as conduct business analyses, analyze economic trends and conditions, and conduct cost-benefit analysis, involve gathering and analyzing data and information that is used to make better decisions with respect to purchasing. Based on conclusions drawn from these analyses, a plan is put into place for procurement, related strategic action and decision making. Hence these job tasks appear to be related to *strategic procurement planning*.

A third factor deals with *negotiations* and loads the job tasks (a) prepare negotiations strategies, (b) conduct negotiations, and (c) document negotiations process. It is relatively straight forward that these three job tasks relate to negotiations and this it can be said that a *negotiations* factor exists among the data. Here, three stages of negotiations are covered, the early phase of *prepare*, the *middle phase* of conduct, and the middle/later phase of *document*.

A fourth factor loads (a) maintain inventory, (b) design internal distribution channels, (c) establish warehouse shipping procedures, and (d) dispose of obsolete and surplus materials and equipment; all job tasks related to the area of *supply management*.

First, the job task of dispose of obsolete and surplus materials and equipment has to do with various supply inputs such as parts, machinery, or

product, which all involve supplies. Meanwhile, considering which supplies and when to discard them generally involves an action associated with management, as in supply management. Next, the job task maintain inventory also deals directly with supply management, considering that inventory constitute the supply and maintaining this inventory connotes a general scope related to management. Also, since it is the inventory or supply that gets shipped to consumers, the job task establish warehouse shipping procedures directly relates to supply management. Further, the job task of design internal distribution channels involves supply management because it is the supplies that are being moved around and managed in order to assemble the final product.

A fifth factor relates to *sourcing* and loads the job tasks of (a) utilize automated procurement systems, (b) procurement compliance and law, (c) conduct market research, (d) use historical information for decision making, (e) identify source of supplies, (f) select method of procurement, and (g) uphold and promote mission, vision, and values of the department. The area of sourcing has to do with finding sources and obtaining materials, supplies, and other inputs. The job task of automated procurement systems may deal with the sourcing process, whereby the automated procurement system initiates a purchase order based on measurements that the system as account for, such as low-levels of inventory as measured by radio frequency identification (RFID). The job tasks of conduct market research and use historical information for decision making involve researching and analyzing data or information for deciding which items to source, when, and at what price. Also, the job task of procurement compliance

and law deals with assuring that the sourcing process is fully compliant with laws, regulations, and policies. The job task of identify source of supplies deals directly with sourcing while select the method of procurement deals with how these supplies will be sourced. The job task of uphold and promote mission, vision, and values is likely loaded on the *sourcing* factor because just as the job task of ensure transparent procurement loads the *solicitation* factor, the area of sourcing has been one where corruption and illegal activity has taken place given the implications of monetary exchange that takes place through transaction of goods. Thus, the job task of uphold and promote mission, vision, and values demonstrates that public procurement practitioners recognize the need for holistic and practical consideration when engaging job tasks related to the *sourcing* factor.

A sixth factor relates to *contract administration* as evident by loading the job tasks of (a) monitor supplier compliance, (b) modify contracts, (c) remediate suppliers' noncompliance, (d) resolve disputes, (e) terminate contracts, and (f) conduct closeout activities. Two of the factors deal explicitly with contract: modify contracts and terminate contracts. Meanwhile, the job tasks of monitor supplier compliance and remediate suppliers' noncompliance may directly lead to the job task of modify contracts or terminate contracts, considering that if the supplier has difficulty complying with the terms of agreement, then the contract may need to be modified. Additionally, the job task of conduct closeout activities has to do with the later stages of contract administration where loose-ends are tied such as

recording the contract as executed, ensuring funds have been delivered or received, and notifying all parties of the agreement.

**Managing of job tasks by all practitioners.** Appendix C shows the results of the factor analysis for job tasks managed by all practitioners. The job tasks that load *sourcing* consist of conduct market research, recommend buy decisions, use historical information for decision making, analyze economic conditions, identify sources of supplies, select method of procurement, and select contract type. The job tasks of utilize automated procurement systems, procurement compliance and law, and uphold and promote mission, vision, and values are noticeably absent from the *sourcing* factor here, but were loaded on the perform factor analysis and the both perform and manage factor analysis *sourcing* factor. The implication is that these aforementioned job tasks are typically either performed or both performed and managed by a practitioner. A potential explanation could be that automated procurement systems requires actual use of the system through performing or a combination of performing and managing in order to attend to the job task. Additionally, when it comes to upholding and promoting mission, vision, and values, engaging these job tasks through performing or both performing and managing makes sense because one needs to display accordance with mission, vision, and values through performing, or actual doing, before one can expect this job task to be attended to by someone else through managing. Meanwhile, the job tasks of recommend buy decisions, analyze economic conditions, select method of procurement, and select contract type load the *sourcing* factor for the manage factor analysis but



not the solely perform or both perform and manage factor analysis. The implication is that these job tasks require a higher level of task completion to complete, in which practitioners in public procurement solely manage the job task. It may be that public procurement practitioners manage this job task through personnel from other departments who actually perform this duty.

Whereas the both performing and managing factor analysis did not load a distinct factor for *negotiations*, whereby *negotiations* job tasks from the perform factor analysis loaded the *contract administration* factor for the both perform and manage factor analysis; the *negotiations* job tasks from the perform factor analysis such as prepare negotiations strategies, conduct negotiations, and document negotiations process are loaded on a *negotiations* factor for the manage factor analysis that also includes the job task of select negotiation team members. Despite the fact that public procurement practitioners appear to be more specialized in managing considering that the computed index for average number of job tasks managed is only 9.66, as compared to 24.77 for job tasks both performed and managed and 16.51 for job tasks solely performed, the *negotiations* factor here includes the additional job task of select negotiation team members. A potential explanation is that selection of team members is typically a very high level task, considering that there could be some managers who are part of the team being selected by a yet higher-ranked practitioner, hence those practitioners who are more specialized would also be executing job tasks in the more specialized manner of solely managing.

For the factor analysis of job tasks managed, the two job tasks of evaluate supplier performance and monitor supplier compliance correlate with their own factor. It is interesting to note that these two job tasks loaded the *contract administration* factor for the solely perform and both perform and manage factor analyses. It appears that practitioners are more specialized with respect to managing given that only two job tasks load a single factor, indicating high specialization for the area related to these two job tasks. Also, the job tasks which loaded the *contract administration* factor for the perform factor analysis and the both perform and manage factor analysis do not share a relationship here with evaluate supplier performance and monitor supplier compliance, further illustrating less specialization for solely performing and both performing and managing job tasks in public procurement.

The job tasks absent from the solely manage *contract administration* factor but that were loaded on the perform *contract administration* factor are modify contracts, remediate suppliers' noncompliance, resolve disputes, terminate contracts, and conduct closeout activities. Again, the additional job tasks loaded for job tasks performed indicate the prevalence of performing, as opposed to managing, of job tasks among all practitioners surveyed.

It should be noted that evaluate supplier performance did not load the perform factor analysis for any factor. Also, the job tasks absent from the manage *contract administration* factor but that were loaded on the both perform and manage *contract administration* factor are conduct post-award debriefing, mitigate risk through terms and conditions, select negotiation members, prepare

negotiations strategies, conduct negotiations, document negotiations process, conduct post-award conference, modify contracts, remediate supplier noncompliance, resolve disputes, terminate contracts, conduct closeout activities. Again, the additional job tasks loaded on this factor for job tasks both performed and managed by all practitioners as opposed to job tasks managed indicate the task specialization by practitioners for job tasks managed.

Next, a *supply management* factor is evident for job tasks managed by all practitioners through loading the job tasks of follow-up and expedite orders, resolve delivery and receiving problems, maintain inventory, design internal distribution channels, account for assets, establish warehouse shipping procedures, select method of disposal for obsolete equipment, dispose of obsolete and surplus materials, and facilitate movement of goods. Recall from the perform factor analysis and as evident in the forthcoming both perform and manage factor analysis that follow-up and expedite orders, resolve delivery and receiving problems, account for assets, select method of disposal for obsolete equipment, and facilitate movement of goods were absent from the *supply management* factor for the perform factor analysis. Meanwhile, for the both perform and manage factor analysis the job tasks of follow-up and expedite orders, resolve delivery and receiving problems, and maintain inventory did not load the *supply management* factor. This indicates that the area of supply management requires more specialization on behalf of practitioners, which requires managing these job tasks.

The sixth and final factor that loads job tasks for the manage factor analysis of all practitioners deals with *strategic procurement planning*. The job tasks loading this factor include conduct value analysis, implement goals, objectives, and measures, conduct business analysis, analyze economic trends and conditions, conduct cost-benefit, implement process improvement plan, plan and implement procurement strategy, and formulate contingency plan. As compared to the solely performing factor analysis, three additional job tasks load the *strategic procurement planning* factor here: conduct value analysis, implement goals, objectives, and measures, and formulate contingency plan. The implication here is that these job tasks may be higher level job tasks requiring solely managing, and perhaps it may be that only more specialized practitioners capable of managing certain job tasks are completing these job tasks. Yet, when comparing the manage *strategic procurement planning* factor to that of both performing and managing, it can be seen that additional job tasks load the both performing and managing *strategic procurement planning* factor including establish mission, vision, and values, uphold and promote mission, vision, and values, monitor legislative trends and laws, and develop staff succession plan. These last findings are not surprising considering that overall public procurement practitioners more frequently both perform and manage job tasks, as opposed to solely perform or solely manage, as evident by observing the compute indexes of job tasks performed, managed, and both performed and managed by all practitioners surveyed.

### **Both performing and managing of job tasks by all practitioners.**

There are five factors that load job tasks at the threshold of .6 or higher for job tasks both performed and managed by all practitioners surveyed, as compared to six factors that load job tasks performed and job tasks managed by all practitioners surveyed. At a glance, it may be that practitioners are least specialized in both performing and managing since there are fewer factors common to job tasks, or it could be stated that practitioners specialize in solely performing and solely managing since there are more factors and hence more specialized combinations of job tasks. A closer examination of the job tasks loading these factors is discussed as follows.

When looking specifically at practitioners' both performing and managing of job tasks (Appendix D), the following job tasks load the first factor: identify source of supplies, select method of procurement, develop solicitation document, review solicitation document, select contract type, solicit competitive quote, solicit competitive bid, solicit competitive proposal, ensure transparent procurement, identify evaluation methodology, conduct pre-bid conferences, prepare and issue addenda, analyze and evaluate solicitation responses, prepare recommendation award, and prepare contract. Similar to the first factor from the perform factor analysis previously conducted, these job tasks appear to relate to each other according to job task commonalities with regards to *solicitation*, however in this case identify source of supplies and select method of procurement also load this factor. It is not surprising that additional job tasks load the *solicitation* factor for job tasks both performed and managed since the computed index means have

indicated that respondents are more prone to both performing and managing than solely managing or solely performing. However, in the case of solely managing job tasks, the job tasks of identify source of supplies, select method of procurement, review solicitation document, and select contract type, do not load the *solicitation* factor, as in the case of the both performing and managing factor analysis. Instead, the aforementioned job tasks, with the exception of review solicitation document, which does not load any factor for job tasks solely managed, actually load a factor relating to *sourcing* here. The job tasks of review solicitation document and select contract type do load the *solicitation* factor for the perform factor analysis however. Comparatively, it appears that both performing and managing of job tasks is more specialized in terms of job tasks relevant to solicitation since these job tasks are split across two factors. This may be intuitive considering that duties with respect to solicitation connote an act of performing in terms of engaging the public. Meanwhile these practitioners likely manage teams in completing these tasks as well.

A second factor loads the job tasks of establish mission, vision, and values, uphold and promote mission, vision, and values, conduct value analysis, implement goals, objectives, and measures, monitor legislative trends and laws, conduct business analyses, analyze economic trends and conditions, conduct cost-benefit analysis, implement process improvement plan, plan and implement procurement strategies, formulate contingency planning, and develop staff succession plan. This factor, like the second factor discussed in the perform factor analysis deals with strategic procurement planning, except in this case the

following additional job tasks load this factor: establish mission, vision, and values, uphold and promote mission, vision, and values, conduct value analysis, implement goals, objectives, and measures, monitor legislative trends and laws, formulate contingency planning, and develop staff succession plan. These additional job tasks reflect an emphasis on planning, as opposed to analysis, as seen from this comparative factor in the previous perform factor analysis. Furthermore, public procurement practitioners' prevalence of both performing and managing, as opposed to solely performing or solely managing, according to the computed index means also provides reasoning for the added job tasks loaded on the *strategic procurement planning* factor for job tasks both performed and managed.

Similar to the perform factor analysis, the both perform and manage factor analysis yields a factor dealing with *supply management* that loads the following job tasks: design internal distribution channels, account for assets, establish warehouse shipping procedures, select method of disposal for obsolete equipment, and dispose obsolete and surplus materials. However, in this case, maintain inventory is absent yet account for assets and select method of disposal for obsolete equipment are included as job tasks that load the *supply management* factor. Again, the job tasks both performed and managed that are loaded onto this factor exceed the number of job tasks performed by all practitioners. Also, consider that the job task of maintain inventory is a task that may likely be performed, such as organizing, cleaning, stacking, or counting inventory. On the other hand, account for assets and select method of disposal

for obsolete equipment and materials are job tasks more likely to require aspects of management. For example, finance/accounting metrics may be conducted based on inputs collected by support staff. Also, selection of method for disposal of obsolete equipment and materials likely involves management's decision making and coordination efforts among support staff that actually handles and disposes the equipment and materials.

A fourth factor deals with *contract administration* and loads the following job tasks: conduct post-award debriefing, mitigate risk through terms and conditions, select negotiation members, prepare negotiations strategies, conduct negotiations, document negotiations process, conduct post-award conference, evaluate supplier performance, monitor supplier compliance, modify contracts, remediate supplier noncompliance, resolve disputes, terminate contracts, and conduct closeout activities. As compared to the perform factor analysis, the both perform and manage factor analysis loads *negotiations* job tasks on the same factor as *contract administration* job tasks, demonstrating a closer relationship between these two areas of job tasks. Also, the combination of the two factors insinuates less task specialization on behalf of job tasks both performed and managed, which is not surprising considering that the computed index mean of job tasks both performed and managed exceeds the mean of job tasks solely performed, and solely managed, by practitioners surveyed. Essentially, it is reasonable to suggest that more job tasks are both performed and managed than performed since public procurement practitioners more often both perform and manage as opposed to solely perform tasks.



For the both perform and manage factor analysis conducted here, the conduct post-award debriefing and mitigate risk through terms and conditions job tasks also load the *contract administration* factor. Qualitatively, these job tasks indicate both performing and managing as opposed to solely performing or solely managing. First, the practitioner who would typically conduct the post-award debriefing is a more senior practitioner that has been managing either the process up to that point, or will be managing the processes moving forward. Additionally, the practitioner who participates in the debriefing likely has been close to the process from early on and established a rapport with counterparties via performing. Next, the job tasks of mitigate risk through terms and conditions connotes to both performing and managing as opposed to solely performing or solely managing because of the numerous inputs and outputs that need to be coordinated to execute the job task. For example, numerous departments may need to be involved in the process, which could require a managerial effort on behalf of the practitioner. Additionally, there may be guidelines that need to be written or other technical job tasks that deal with performing this job task such as identifying potential causes and consequences of risk.

**Performing or managing (task completion) of job tasks by all practitioners.** The task completion factor analysis on the job tasks performed or managed by practitioners surveyed is conducted. Appendix E reports results of the task completion factor analysis. Similar to the performing, managing, and both performing and managing factor analyses, a *solicitation* factor is evident by loading the job tasks of select method of procurement, develop solicitation

document, review solicitation document, select contract type, solicit competitive bid, solicit competitive proposal, ensure transparent procurement, identify evaluation methodology, conduct pre-bid conferences, prepare and issue addenda, analyze and evaluation solicitation responses, and prepare recommendation award. Unlike the manage factor analysis, review solicitation document is included here on the *solicitation* factor (review solicitation document does not load a factor there), as well as select contract type, which loads the *sourcing* factor there. The implication is that the job task review solicitation document is less specialized because it may typically be performed, managed, or both performed and managed, but is clearly not solely managed because it does not load a factor for that analysis.

The job task solicit competitive quote is also loaded on the *sourcing* factor for the manage factor analysis but this job task does not load any factor for the task completion factor analysis, implying that this job task may be highly specialized. For the both performing and managing factor analysis, identify source of supplies, solicit competitive quotes, and review solicitation document also load the *solicitation* factor, though these job tasks do not load the *solicitation* factor for the task completion factor analysis. The implication here is that since managing job tasks is more specialized in public procurement, then there are more job tasks that would load this factor as compared to execution of job tasks that include performing and both performing and managing.

All the job tasks loaded on the *solicitation* factor for the perform factor analysis are loaded on *solicitation* factor for the task completion factor analysis

with the exception of the job task solicit competitive quotes, which loads this factor for solely perform analysis but does not load any factors for the task completion factor analysis. The implication is that solely performing of job tasks is more prevalent among practitioners, and therefore may be less specialized as compared to relationships between job tasks across performing, managing, and both performing and managing of job tasks, which may be cumulatively drawn from the task completion factor analysis here.

For the task completion factor analysis, the job tasks of monitor supplier compliance, modify contracts, remediate suppliers' noncompliance, resolve disputes, and terminate contracts all load a *contract administration* factor. For the manage factor analysis, these job tasks did not load any factors, except for monitor supplier compliance, which loaded a factor with evaluate supplier performance. The implication of these results is that these contract administration job tasks of monitor supplier compliance and evaluate supplier performance appear to be more specialized job tasks since they are solely managed, as opposed to performed or both performed and managed.

When comparing the task completion factor analysis to the both perform and manage factor analysis, the *contract administration* factor of the both perform and manage factor analysis is much more inclusive of job tasks, where negotiations job tasks are loaded on this factor in addition to conduct post-award start up conference, mitigate risk through terms and conditions, conduct post-award conference, evaluate supplier performance, monitor supplier compliance, resolve disputes, terminate contracts, and conduct closeout activities. Again,

since both performing and managing is more prevalent in public procurement, these findings are not surprising. As compared to the perform factor analysis, many fewer job tasks load that *contract administration* factor, which is limited to monitor supplier compliance, modify contracts, remediate suppliers' noncompliance, resolve disputes, terminate contracts, and conduct closeout activities, perhaps because these are lower-level job tasks that are more typically performed by someone being supervised. It may also be that job tasks related to contract administration require more performing as opposed to managing, especially considering that working with contracts oftentimes involves dealing with language and specifications, which require a level of hands-on involvement that connotes performing.

The next factor that loads job tasks for the task completion factor analysis deals with *strategic procurement planning*. The job tasks that load this factor include: establish mission, vision, and values, implement goals, objectives, and measures, conduct business analyses, analyze economic trends and conditions, implement process improvement plan, implement procurement strategy, formulate contingency plan, develop staff succession plan, and manage department personnel. As compared to the manage factor analysis, the job tasks of develop staff succession plan establish mission, vision, and values, and manage department personnel do not load any factor there, implying the specialization associated with solely managing in public procurement, especially with respect to strategic procurement planning as discussed here. For the both perform and manage factor analysis, all job tasks loading the *strategic*

*procurement planning* factor from the task completion factor analysis load this factor, yet the *strategic procurement planning* factor for the both perform and manage factor analysis also loads the job tasks of establish mission, vision, and values, uphold and promote mission, vision, and values, monitor legislative trends and laws, and conduct cost benefit. These differentiations are not surprising given that public procurement practitioners report more often both performing and managing as opposed to solely performing or solely managing job tasks.

For the perform factor analysis, uphold and promote mission, vision, and values loads the *sourcing* factor, whereas the only 5 job tasks loading the *strategic procurement planning* factor there are conduct business analyses, analyze economic trends and conditions, conduct cost-benefit, implement process improvement plans, and improve procurement strategy. The job tasks of conduct value analysis, implement goals, objectives, and measures, form procurement contingency plan, and develop staff succession plan are noticeably absent from loading the *strategic procurement planning* factor, indicating the limited roles that performing has on execution of completion of job tasks related to strategic procurement planning. Also, the fact that uphold and promote mission, vision, and values loads a *sourcing* factor for job tasks performed implies the more narrow scope of job tasks performed, considering that mission, vision, and values are geared toward sourcing, as opposed to being geared toward the broader consideration of strategic procurement planning, as in the case of the job task establish mission, vision, and values which loads the

*strategic procurement planning* factor for job tasks managed by all practitioners surveyed.

Similar to the factor analysis for job tasks managed, the *negotiations* factor for job tasks performed or managed loads the four job tasks prepare negotiations strategy, conduct negotiations, document negotiations process, and select negotiations team members. Recall that the select negotiation team members job task was absent from the perform factor analysis, and that the both performing and managing factor analysis did not load a distinct *negotiations* factor, instead these job tasks were loaded on the *contract administration* factor there. The implication is that, despite the varied loadings of negotiations job tasks between job tasks performed, managed, and both performed and managed, that overall there is a specific area of public procurement dealing with negotiations that typically involves these four job tasks.

Finally, the job tasks of follow-up and expedite orders and resolve delivery and receiving problems load a factor for job tasks performed or managed, and the job tasks of select method of disposal for obsolete equipment and dispose of obsolete surplus materials also load their own factor. Together, the job tasks of these two factors loaded the *supply management* factor for the manage factor analysis, but were absent from the *supply management* factor for the perform factor analysis and the both perform and manage factor analysis. Based on the variations between factor analyses of job tasks performed, managed and both performed and managed, the task completion factor analysis helps distinguish these job tasks into factors. As such, across all baseline factor analyses, it could

be said that the job task tandems of follow-up and expedite orders and resolve delivery and receiving problems involve specialization along with the job tasks of select method of disposal for obsolete equipment and dispose of obsolete surplus materials.

### **Chapter Summary**

This chapter first provided information with regard to demographics of survey respondents such as gender make-up, age, education, years of experience, size of organization, job descriptions, time served in that role, and job positions. Additionally, the attainment of certifications and membership to professional associations on behalf of respondents was illustrated. Also, the descriptive statistics for job tasks performed, managed, and both performed and managed by all practitioners were provided through computed indexes.

Second, the baseline factor analyses for job tasks completed by all practitioners surveyed were conducted and the results reported. Four factor analyses were conducted, one for job tasks performed by all practitioners, one for job tasks managed by all practitioners, one for job tasks both performed and managed by all practitioners, and one for job tasks performed or managed by all practitioners. These four factor analyses serve as a baseline with which task specialization will be mapped across the five public procurement practitioners' job positions and three levels of organization size in the two chapters that follow.

Subsequent to the baseline factor analyses, the following chapter presents findings and related discussion on 15 factor analyses that are conducted for job positions: a perform factor analysis, a manage factor analysis, and a both

perform and manage factor analysis for each of the five job positions. The results from the factor analysis of each job position will be compared to the baseline of all practitioners for that respective form of job task completion, such as perform, manage, or both perform and manage. Additionally, comparisons will be made between a practitioner's performing as opposed to managing or both performing and managing of job tasks, as well as comparison between job positions.



## CHAPTER 5: FACTOR ANALYSES FOR JOB TASKS BY JOB POSITION

This chapter presents the findings for the factor analyses of job tasks performed, managed, and both performed and managed by surveyed practitioners according to job positions. Fifteen factor analyses were conducted; three factor analyses for each of the five job positions. For each job position, one perform, one manage, and one both perform and manage factor analysis were executed such that only respondents from the respective job position in question were included in the factor analysis. The results of each factor analysis for each job position are shown including the groupings of job tasks that load each factor, in addition to comparing these groupings of job tasks across the three levels of perform, manage, and both perform and manage. Furthermore, the groupings of job tasks at each level were compared to the baseline of all practitioners at each respective level (perform, manage, both perform and manage) as a means of mapping task specialization according to job position.

This chapter also discusses the findings to explain differentiations between job tasks performed, managed, and both performed and managed by public procurement practitioners according to job positions. The results from the factor analysis of each job position are juxtaposed with regard to the baseline of all practitioners for that respective form of job task completion, such as perform, manage, or both perform and manage. Additionally, comparisons between a

practitioner's performing as opposed to managing or both performing and managing of job tasks is discussed.

### **Procurement Assistants**

A perform factor analysis, a manage factor analysis, and a both perform and manage factor analysis was run on each of the five job positions:

Procurement Assistant, Buyer, Procurement Analyst, Procurement Manager, and Chief Procurement Officer (CPO). First, the results of the three factor analyses for the Procurement Assistant job position show that the 75 job tasks do not share a relationship to the extent that the correlations between job tasks and common latent variables (factors) is not present. The implication is that this job position does not specialize in performing, managing, or both performing and managing of job tasks to a degree that is reflected by relationships among job tasks with respect to the Procurement Assistant practitioners. From these results, it appears that Procurement Assistants may be performing, managing, and both performing and managing a variety of job tasks that do not share relationships with each other, such that the work may not be specialized according to groupings of job tasks, and instead job tasks may be completed in isolation as opposed to tandems or groupings. If job tasks are not related based on performing, managing, or both performing and managing, then this means that Procurement Assistants may only be attending to job tasks in isolation, such that roles and responsibilities are mitigated in scope and complexity.

## Buyers

When examining the job tasks performed, managed, and both performed and managed by Buyers, the results show that only job tasks reportedly performed share a relationship with common latent variables (Appendix F, Table 12). Table 12 shows the factor loadings for job tasks performed by Buyers. Please refer to Table 12 in the comparative analysis that follows in this subsection.

Table 12

### *Factor Analyses of Job Tasks Performed by Job Position*

F	All respondents	Buyer	Procurement analyst
SU	utilizeautomprocurmentsystem		
	procurementcomplianceandlaw		procurementcomplianceandlaw
	Conductmarketresearch		conductmarketresearch
	Usehistoricalinfofordecisions		usehistoricalinfofordecisions
	Identifysourceofsupplies		identifysourceofsupplies
	Selectmethodofprocurement		selectmethodofprocurement
	upholdpromotmissionvisionvalues		
SO	Developsolicitationdocument	developsolicitationdocument	developsolicitationdocument
	Reviewsolicitationdocument	reviewsolicitationdocument	reviewsolicitationdocument
	Selectcontracttype	Selectcontracttype	Selectcontracttype
	Solicitcompetitivequote	Solicitcompetitivequote	solicitcompetitivequote
	Solicitcompetitivebids	Solicitcompetitivebids	solicitcompetitivebids
	Solicitcompetitiveproposals	solicitcompetitiveproposals	solicitcompetitiveproposals
	Ensuretransparentprocesses	ensuretransparentprocesses	ensuretransparentprocesses
	identifyevaluationmethodology	identifyevaluationmethodology	identifyevaluationmethodology
	Conductprebidconferences	conductprebidconferences	conductprebidconferences
	Prepareandissueaddenda	prepareandissueaddenda	prepareandissueaddenda
	Analyzeevaluatesolicitations	analyzeevaluatesolicitations	analyzeevaluatesolicitations
	preparerecommendationaward	preparerecommendationaward	preparerecommendationaward
	Preparecontracts	Preparecontracts	Preparecontracts
		Identifysourceofsupplies	
	selectmethodofprocurement		
NG	Preparenegotiationstrategy	preparenegotiationstrategy	preparenegotiationstrategy
	Conductnegotiations	conductnegotiations	conductnegotiations

(table continues)

Table 12 (continued)

F	All respondents	Buyer	Procurement analyst
	Documentnegotiationprocess	documentnegotiationprocess	documentnegotiationprocess
SM	Maintaininventory		
	designinternaldistributechannel		
	establishwarehouseshippingprocess		
	disposesurplusequipmaterials	disposesurplusequipmaterials	disposesurplusequipmaterials
		selectmethdisposalequipmaterial	selectmethdisposalequipmaterial
SP	Conductbusinessanalyses	conductbusinessanalyses	conductbusinessanalyses
	analyzeeconmictrendcondition	analyzeeconmictrendcondition	analyzeeconmictrendcondition
	conductcostbenefitacquisition	conductcostbenefitacquisition	conductcostbenefitacquisition
	implementprocessimproveplan	implementprocessimproveplan	planimplementprocurestrategy
	planimplementprocurestrategy	planimplementprocurestrategy	
		monitorlegislativetrendslaws	
CA	Monitorsuppliercompliance		monitorsuppliercompliance
	Modifycontracts	modifycontracts	Modifycontracts
	remediatesuppliernoncompliance	remediatesuppliernoncompliance	remediatesuppliernoncompliance
	Resolvedisputes	resolvedisputes	Resolvedisputes
	Terminatecontracts	terminatecontracts	Terminatecontracts
		conductcloseoutactivities	conductcloseoutactivities

Note. SU = Sourcing, SO = Solicitation NG = Negotiations, SM = Supply Management, SP = Strategic Procurement Planning, CA = Contract Administration, OF = Other Factor not identifiable.

It is not surprising that job tasks managed or both performed and managed by Buyers do not share relationships with common latent variables. Buyers, consisting of both intermediate and entry-level buyers, would be expected to engage job tasks that require simpler, more immediate and direct actions to be taken, as opposed to more complex roles and responsibilities that involves managing. The perform factor analysis for Buyers indicates what job tasks these may consist of, where five factors are loaded by job tasks.

The job tasks of modify contracts, remediate supplier noncompliance, resolve disputes, terminate contracts, and conduct closeout activities, all load one factor; these job tasks loaded a *contract administration* factor in the baseline analysis across all practitioners. It is interesting to note that when comparing the

perform factor analysis of job tasks for the Buyer job position to all practitioners, the job task of monitor suppliers' compliance loads *contract administration* for all practitioners but not in the Buyer-only perform factor analysis, indicating a limited scope of roles and responsibilities in this area for Buyers as compared to all public procurement practitioners.

The job tasks of select method of disposal for obsolete machinery and dispose of obsolete materials load a factor for the Buyer perform factor analysis, where these job tasks load the *supply management* factor for the factor analysis of job tasks performed by all practitioners. However, when comparing to all practitioners, the Buyer assumes a limited role considering that the perform factor analysis of all practitioners includes loading of the additional job tasks maintain inventory, design internal distribution channels, and establish warehouse shipping procedures. Again, it appears that Buyers engage a more limited role in both contract administration and supply management as compared to the baseline of all public procurement practitioners. The implications are that Buyers are specialized in a certain area of performing job tasks. Consider that job tasks performed are less prevalent than job tasks managed across all practitioners, and at the same time Buyers are more specialized in certain job tasks performed in contract administration and supply management. The implication is that Buyers actually perform some of these contract administration and supply management tasks, to a degree that they are specialized in what they perform in regards to these two areas, which is expected given the scope of an entry-level or intermediate buyer, where that actual act of purchasing appears to

be most specific and narrow. Buyers are also ranked lower than all job positions except Procurement Assistant (Steinfeld et al., 2016), so it is intuitive that Buyers would focus on a limited scope of job tasks and that focus would consist of performing.

Differently, in some areas of public procurement the Buyer performs as many or more job tasks than the baseline of all practitioners. For example, the job tasks prepare negotiations strategies, conduct negotiations, and document negotiations process load a factor for the factor analysis of job tasks performed by Buyers, which is identical to the results of the factor analysis of job tasks performed by all practitioners. Even though it would seem that negotiations are an integral part of performing job tasks related to buying as in the case of Buyer job position, the job tasks related to negotiations likely involve some higher level components such as technical job tasks or more senior practitioners for decision making.

Furthermore, the job tasks of monitor legislative trends and laws, conduct business analyses, analyze economic trends and conditions, conduct cost-benefit analysis, implement process improvement plan, and plan and implement procurement strategy, all load a factor for Buyers' performing job tasks, which includes one additional job task (monitor legislative trends and laws) than was loaded on this *strategic procurement planning* factor for factor analysis of job tasks performed by all public procurement practitioners. At a glance, it would appear that Buyers need to perform some of these job tasks as part of a decision to purchase, such as analyze economic trends and conditions, conduct cost-

benefit analysis, and plan and implement procurement strategy, yet these job tasks are not performed to a greater extent as compared to all practitioners which may be explained by the broader cost and value implications of these job tasks which could require managing of job tasks or involvement by more senior practitioners.

Lastly, the fifth factor for the job tasks performed by Buyers loads the job tasks of identify source of supplies, select method of procurement, develop solicitation document, review solicitation document, select contract type, solicit competitive quote, solicit competitive bid, solicit competitive proposal, ensure transparent procurement, identify evaluation methodology, conduct pre-bid conferences, prepare and issue addenda, analyze and evaluate solicitation responses, prepare recommendation award, and prepare contracts. When looking at these job tasks for the factor analysis of job tasks performed by all practitioners, it is evident that Buyers perform two additional job tasks in this grouping: identify source of supplies and select method of procurement. These findings demonstrate Buyers' specialty in the area of *solicitation*, which appears to be, given the loaded job tasks on this factor, especially important to the roles and responsibilities associated with a Buyer in terms of finding vendors who can deliver products and services for an eventual purchase to take shape.

### **Procurement Analysts**

Next, the Procurement Analyst position is of focus. Please refer to Tables 13 and 14 for illustration of results for comparison of job tasks managed, and both performed and managed, respectively. The factor analysis of job tasks

performed by Procurement Analysts shows that the job tasks of procurement compliance and law, conduct market research, use historical information for decision making, identify source of supplies, and select method of procurement, load a factor (see Appendix G). For the perform factor analysis dealing with all practitioners, these job tasks consisted of the *sourcing* factor (Appendix B). In that analysis the job tasks that loaded the *sourcing* factor included those loading this factor for Procurement Analysts but also included: utilize automated procurement systems and uphold and promote mission, vision, and values of the department. The job task utilize automated procurement systems has to do with operations and the mission, vision, and values deals with broad overall strategy and planning, two job tasks that appear to be beyond the scope of what would be expected of a technically-oriented Procurement Analyst.

Table 13 shows the results of the factor analyses for job tasks managed by all practitioners surveyed and according to job positions. Table 14 shows the results of the factor analyses for job tasks both performed and managed by all practitioners surveyed and according to job positions.

Table 13

*Factor Analyses of Job Tasks Managed by Job Position*

F	All respondents	Procurement analyst	Procurement manager	CPO
SU	Utilizeautomprocure mentsystem Conductmarketresea rch Usehistoricalinfoford ecisions Identifysourceofsupp lies Selectmethodofproc urement selectcontracttype			

(table continues)

Table 13 (continued)



F	All respondents	Procurement analyst	Procurement manager	CPO
SO	Developsolicitationdocument Solicitcompetitivequote Solicitcompetitivebids Solicitcompetitiveproposals Ensuretransparentprocesses Identifyevaluationmethodology Conductprebidconferences Prepareandissueaddenda Analyzeevaluatesolicitations Preparerecommendationaward	solicitcompetitivequote solicitcompetitivebids solicitcompetitiveproposals ensuretransparentprocesses	Solicitcompetitivequote Solicitcompetitivebids Solicitcompetitiveproposals Ensuretransparentprocesses Identifyevaluationmethodology Conductprebidconferences Prepareandissueaddenda Analyzeevaluatesolicitations Preparerecommendationaward Selectpaymentmethod Reviewsuppliersamples Preparecontracts Modifycontracts Remediatesuppliernoncompliance	Developsolicitationdocument Solicitcompetitivequote Solicitcompetitivebids Solicitcompetitiveproposals Ensuretransparentprocesses Identifyevaluationmethodology Conductprebidconferences Prepareandissueaddenda Analyzeevaluatesolicitations Preparerecommendationaward Preparecontracts Selectmethodofprocurement
NG	Preparenegotiationstrategy conductnegotiations Documentnegotiationprocess Selectnegotiationmembers		Preparenegotiationstrategy Conductnegotiations Documentnegotiationprocess Selectnegotiationmembers	
SM	maintaininventory Designinternaldistributechannel Establishwarehouseshipprocess Disposesurplusequipmaterials accountforassets Followupandexpediteorders Resolvedeliveryreceivingprobs Selectmethdisposalequipmaterial Facilitatemovementofgoods	designinternaldistributechannel disposesurplusequipmaterials	maintaininventory** designinternaldistributechannel** establishwarehouseshipprocess** disposesurplusequipmaterials* followupandexpediteorders**	Maintaininventory designinternaldistributechannel establishwarehouseshipprocess Disposesurplusequipmaterials Accountforassets Resolvedeliveryreceivingprobs selectmethdisposalequipmaterial Facilitatemovementofgoods
SP	Conductbusinessanalyses Analyzeeconmictrendcondition	analyzeeconmictrendcondition	Conductbusinessanalyses Analyzeeconmictrendcondition	Conductbusinessanalyses Analyzeeconmictrendcondition

(table continues)

Table 13 (continued)

F	All respondents	Procurement analyst	Procurement manager	CPO
	Conductcostbenefitacq quisition Implementprocessim proveplan Planimplementprocu restrategy Conductvalueanalys es Implementgoalobject ivemeasures Formprocureconting encyplan	conductcostbenefitacqui sition implementprocessimpro veplan planimplementprocurestr ategy	Conductcostbenefitacq uisition Implementprocessimprov eplan Planimplementprocurestr ategy  Monitorlegislativetrends laws	Conductcostben efitacquisition Implementproce ssimproveplan Planimplementpr ocurestrategy  Formprocurecont ingencyplan Monitorlegislativ etrends laws
CA	Monitorsuppliercomp liance Evaluatesupplierperf ormance	Monitorsuppliercompliance  Modifycontracts Preparenegotiationstrate gy  Conductnegotiations documentnegotiationpro cess remediatesuppliernonco mpliance  Resolvedisputes		
OF			Upholdpromotmissionvisi onvalues	Conductpostawar dconference Evaluatesupplier performance Monitorsupplierc ompliance Conductcloseout activities

Note. SU = Sourcing, SO = Solicitation NG = Negotiations, SM = Supply Management, SP = Strategic Procurement Planning, CA = Contract Administration, OF = Other Factor not identifiable.

\*Job tasks load their own SM factor \*\*Job tasks load a second SM factor.

Table 14

*Factor Analyses of Job Tasks Both Performed and Managed by Job Position*

F	All respondents	Procurement analyst	Procurement manager	CPO
SU		procurementcompliance andlaw recommendbuydecision usehistoricalinfofordecisions identifysourceofsuppliers		
SO	developsolicitationdocu ment reviewsolicitationdocu ment  Selectcontracttype	developsolicitationdocu ment reviewsolicitationdocu ment  selectcontracttype		Developsolicitationdocu ment  Selectcontracttype

(table continues)

Table 14 (continued)

F	All respondents	Procurement analyst	Procurement manager	CPO
	Solicitcompetitivequote	solicitcompetitivequote		Solicitcompetitivequote
	Solicitcompetitivebids	solicitcompetitivebids	solicitcompetitivebids	Solicitcompetitivebids
	solicitcompetitiveproposals	solicitcompetitiveproposals	solicitcompetitiveproposals	Solicitcompetitiveproposals
	ensuretransparentprocesses	ensuretransparentprocesses		Ensuretransparentprocesses
	identifyevaluationmethodology	identifyevaluationmethodology	identifyevaluationmethodology	Identifyevaluationmethodology
	conductprebidconferences	conductprebidconferences	conductprebidconferences	conductprebidconferences
	prepareandissueaddenda	prepareandissueaddenda	prepareandissueaddenda	prepareandissueaddenda
	analyzeevaluatesolicitations	analyzeevaluatesolicitations	analyzeevaluatesolicitations	analyzeevaluatesolicitations
	preparerecommendationaward	preparerecommendationaward	preparerecommendationaward	preparerecommendationaward
	selectmethodofprocurement	selectmethodofprocurement		selectmethodofprocurement
	Identifysourceofsupplies			Identifysourceofsupplies
		respondprotestsandinquries		
		preparecontracts	preparecontracts	
		conductpostawarddebrief	conductpostawarddebrief	
			mitigateriskthru terms conditions	
				Selectpaymentmethod
NG		selectnegotiationmembers	selectnegotiationmembers	
		preparenegotiationstrategy	preparenegotiationstrategy	
		conductnegotiations	conductnegotiations	
		documentnegotiationprocess		
			conductpostawardconference	
SM	designinternaldistributechannel	designinternaldistributechannel	terminatecontracts	
	establishwarehouse	establishwarehouse	designinternaldistributechannel**	
	shipprocess	shipprocess	establishwarehouseshipprocess**	
	disposesurplusequipmaterials	disposesurplusequipmaterials	disposesurplusequipmaterials**	disposesurplusequipmaterials*
	Accountforassets		accountforassets**	
	selectmethdisposal equipmaterial	selectmethdisposal equipmaterial	selectmethdisposal equipmaterial**	selectmethdisposal equipmaterial*
	facilitatemovement ofgoods	facilitatemovement ofgoods	facilitatemovement ofgoods**	
		maintaininventory	maintaininventory**	
			followupandexpedite orders*	followupandexpedite orders**
				resolvedeliveryreceivingprobs**
SP	conductbusinessanalyses	conductbusinessanalyses	conductbusinessanalyses	conductbusinessanalyses

(table continues)

Table 14 (continued)

F	All respondents	Procurement analyst	Procurement manager	CPO
	analyzeeconomic trend condition conduct cost benefit acquisition implement process improve plan plan implement procurement strategy Conduct value analyses implement goal objective measures form procure contingency plan monitor legislative trends laws develop staff succession plan establish mission vision values uphold promote mission vision values monitors supplier compliance	analyze economic trend condition conduct cost benefit acquisition implement process improve plan plan implement procurement strategy conduct value analyses implement goal objective measures form procure contingency plan monitor legislative trends laws develop staff succession plan	analyze economic trend condition conduct cost benefit acquisition implement process improve plan plan implement procurement strategy conduct value analyses implement goal objective measures form procure contingency plan monitor legislative trends laws establish mission vision values	analyze economic trend condition conduct cost benefit acquisition implement process improve plan plan implement procurement strategy implement goal objective measures form procure contingency plan monitor legislative trends laws develop staff succession plan modify contracts remediate supplier non compliance resolved disputes terminate contracts evaluate supplier performance conduct post award conference conduct closeout activities select negotiation members prepare negotiation strategy conduct negotiations document negotiation process conduct closeout activities
CA	Modify contracts remediate supplier non compliance Resolved disputes Terminate contracts evaluate supplier performance conduct post award conference conduct closeout activities	modify contracts remediate supplier non compliance resolved disputes terminate contracts evaluate supplier performance		modify contracts remediate supplier non compliance resolved disputes terminate contracts
OF	implement operating work policy interpret policies and procedures manage department personnel Train purchasing personnel procurement compliance and law		implement operating work policy manage department personnel train purchasing personnel solicit competitive quote ensure transparent processes	

Note. SU = Sourcing, SO = Solicitation NG = Negotiations, SM = Supply Management, SP = Strategic Procurement Planning, CA = Contract Administration, OF = Other Factor not identifiable.

\*Job tasks load their own SM factor \*\*Job tasks load a second SM factor

For the factor analysis of job tasks both performed and managed by Procurement Analysts (see Appendix H), the *sourcing* factor loads the job task recommend buy decision and not conduct market research as is the case for the perform factor analysis. The implication is that recommend buy decision may be a higher level job task requiring some managerial capacities as opposed to the more technical job task of conduct market analysis. Also, it is somewhat surprising to note that none of the *sourcing* job tasks load a factor for the factor analysis of job tasks managed by Procurement Analysts (see Appendix I). The explanation for this could be that *sourcing* involves the type of complexity that would require Procurement Analysts' higher level involvement. Looking at the baseline, i.e. factor analysis for job tasks managed by all practitioners, the *sourcing* factor indeed loads the job tasks that are loaded on the factor analysis of the job tasks performed and the factor analysis of job tasks both performed and managed by Procurement Analysts, indicating that Procurement Analysts are not as specialized with the *sourcing* area of public procurement as compared to all practitioners surveyed.

For the job tasks related to negotiations, the findings for Procurement Analysts suggest that when moving from the factor analysis of job tasks performed to job tasks both performed and managed, the additional job task of document negotiations process loads the factor for job tasks both performed and managed, indicating that Procurement Analysts become more engaged with the negotiations process at the managing as opposed to performing level, which also reflects the broader scope of all practitioners when comparing the computed

indexes of performing and both performing and managing job tasks. Yet, when moving to the factor analysis of job tasks solely managed by Procurement Analysts, these negotiations job tasks load the *contract administration* factor, which is the case for the baseline factor analysis for job tasks both performed and managed by all practitioners. This distinction may indicate that Procurement Analysts manage negotiations when it becomes a more prevalent consideration, such as also in the contract administration area, whereas the rest of practitioners as a whole either specialize in performing negotiations or both performing and managing negotiations, hence negotiations may be considered more or less of a managerial job task depending on practitioner job position.

For job tasks related to supply management, there are differences in job tasks performed, managed, and both performed and managed by Procurement Analysts. When performing, the same two job tasks of select method of disposal for obsolete equipment and dispose of obsolete surplus materials load the *supply management* factor, which is consistent with the factor analysis of job tasks performed by all practitioners. When looking at job tasks both performed and managed by Procurement Analysts, there are five additional job tasks loaded: establish warehouse shipping procedures, select method of disposal, facilitate movement of goods, maintain inventory, and design internal distribution channels. It is evident that these job tasks require more managerial involvement, especially considering that when comparing the both performing and managing factor analysis to the solely managing factor analysis for Procurement Analysts, the job tasks of maintain inventory and establish warehouse shipping procedures

are absent, perhaps because these job tasks are higher level tasks that require managing. Furthermore, when looking at the factor analysis for all practitioners, the number of job tasks loaded on the *supply management* factor increase substantially when moving from the factor analysis of performing job tasks and the factor analysis of both performing and managing job tasks to the factor analysis of managing job tasks, whereby an additional three job tasks load the *supply management* factor: follow-up and expedite orders, resolve delivery and receiving problems, and maintain inventory. Meanwhile, these job tasks do appear to be higher level tasks that require dynamic interaction and involvement by the practitioner.

For the job tasks related to solicitation, the job tasks that load a *solicitation* factor for the factor analysis of job tasks performed and the factor analysis of job tasks both performed and managed is consistent with the respective factor analyses for all practitioners. The major differentiation involving this factor occurs when looking at the factor analysis of job tasks managed. With regards to Procurement Analysts, the job tasks develop solicitation document and review solicitation document load one single factor with no other job tasks. Furthermore, a separate factor loads the job tasks of solicit competitive quotes, solicit competitive bids, solicit competitive proposals, and ensure transparent procurement, which indicates that *solicitation* becomes more specialized as these related job tasks require solely managing. Additionally, when comparing to the baseline of all practitioners, the *solicitation* factor also becomes fragmented, whereby the job tasks of identify source of supplier, select method of

procurement, review solicitation document, and select contract type are factored under the *sourcing* factor in that analysis. The implication is that *solicitation* appears to be a job task that is managed, and only certain particular aspects of solicitation necessitate the dynamic of both performing and managing. Since the job tasks of select method of procurement and select contract type load the *sourcing* factor for the factor analysis of job tasks managed by all practitioners but do not load any factor for the factor analysis of job tasks managed by Procurement Analysts, it could be suggested that particular aspects of *solicitation* are beyond the scope of Procurement Analysts. On the other hand, some aspects of *solicitation* require the expertise of the Procurement Analyst, as evident by the factor loading only the two job tasks of develop solicitation document and review solicitation document, in addition to the factor loading only solicit competitive quotes, solicit competitive bids, solicit competitive proposals, and ensure transparent procurement.

For job tasks that load a *contract administration* factor, the job tasks of monitor supplier compliance, modify contracts, remediate suppliers' noncompliance, resolve disputes, terminate contracts, and conduct closeout activities load this factor for the factor analysis of job tasks performed by Procurement Analysts. Meanwhile, the additional job tasks of conduct post-award conference and evaluate supplier performance load this factor for the analysis of job tasks both performed and managed by Procurement Analysts. For the job tasks managed by Procurement Analysts, the *contract administration* factor does not load the job tasks of conduct post-award conference, evaluate supplier



performance, terminate contracts, or conduct closeout activities. Instead, the negotiations job tasks of prepare negotiations strategy, conduct negotiations, and document negotiations process load the *contract administration* factor in lieu of a *negotiations* factor. The implication is that contract administration is more of a managerial task, and that when managing is necessitated then the contract administration process also entails negotiations, which make the consolidated *contract administration* factor for the manage analysis more managerial and broad in scope, indicating the need for a higher level practitioner.

When comparing these findings to the baseline factor analyses of job tasks by all practitioners, it is the factor analysis of job tasks both performed and managed that fails to delineate a factor for each *negotiations* and *contract administration*, while the factor analysis of job tasks managed only loaded two job tasks for the *contract administration* factor. For the Procurement Analysts, the number of job tasks loaded on the *contract administration* factor increases when moving from performing to both performing and managing, and then negotiations becomes a part of contract administration when moving to the higher level of solely managing. Keeping in mind that the computed index means of job tasks both managed for all practitioners is less than the computed index mean of job tasks solely performed or both performed and managed, this last finding indicates that Procurement Analysts may specialize in certain aspects of *contract administration* that is specialized and beyond the scope of the baseline of practitioners.

Finally, similar to the job tasks that have loaded the *strategic procurement planning* factor for other factor analyses thus far, a *strategic procurement planning* factor is apparent here by loading the job tasks of conduct business analyses, analyze economic trends and conditions, conduct cost-benefit, and plan and implement procurement strategies for job tasks performed by Procurement Analysts. When looking at job tasks both performed and managed by Procurement Analysts, the additional job tasks that load this factor are: conduct value analysis, implement goals, objectives, and measures, monitor legal trends and laws, form procurement contingency plan, and develop staff succession plan, indicating that strategic procurement planning job tasks require more managerial capacities. For the factor analysis of managing job tasks by Procurement Analysts, only the job tasks of analyze economic trends and conditions, conduct cost-benefit, implement a process improvement plan, and plan and implement procurement strategies load the *strategic procurement planning* factor. Again, the implication is the strategic procurement planning requires more managerial capacities and is more specialized at the level of solely managing. When comparing these results to the baseline for all surveyed practitioners, there is consistency between the numbers of job tasks factored on the *strategic procurement planning* factor when moving from the performing, to both performing and managing, to solely managing factor analyses for all practitioners.

Next, the job tasks of establish mission, vision, and values, and uphold and promote mission, vision, and values load the *strategic procurement planning*

factor for the factor analysis of job tasks both performed and managed by all practitioners but are completely absent from the factor analyses of job tasks for Procurement Analysts, indicating that Procurement Analysts may be specialized to an extent that broader organizational considerations are not taken into account, even when dealing specifically with management of these job tasks. The overall implication here is that Procurement Analysts have specialization in this area with regard to the limited, yet specific job tasks performed, managed, and both performed and managed, but Procurement Analysts lack the greater roles and responsibilities that would be expected of more senior practitioners in the area of strategic procurement planning.

### **Procurement Managers**

The factor analysis of job tasks performed by Procurement Managers failed. This is not surprising considering that Procurement Managers are expected to participate in managerial roles and responsibilities that preclude more narrow execution of job tasks by means of performing. Meanwhile, the factor analysis of job tasks managed (Appendix J) and factor analysis of job tasks both performed and managed (Appendix K) do produce factors that load job tasks (see Tables 13 and 14).

It appears that Procurement Managers are more specialized than the previous three job positions studied. For example, the job task of follow-up and expedite orders loads its own factor for job tasks both performed and managed by Procurement Managers. When moving to the factor analysis of job tasks both managed by Procurement Managers, this job task loads a factor with other job

tasks that have been associated with supply management, such as maintain inventory, design internal distribution channels, and establish warehouse shipping procedures. Hence, even though the computed index mean for job tasks managed by all practitioners is less than job tasks performed and both performed and managed, Procurement Managers actually both manage more job tasks with regard to supply management, indicating substantial specialization.

Furthermore, the job tasks implement operating work policies, solicit competitive quotes, manage department personnel, and train purchasing department personnel, load their own factor for the job tasks managed by Procurement Managers, though these job tasks do not load any other factor for the baseline analysis, except in the case of the job task manage department personnel, which loads the task completion factor analysis of all practitioners. The implication is that the job task manage department personnel covers broadly implied roles and responsibilities that are not specialized with respect to task, but that the job position Procurement Manager, as the label suggests, does specialize in this job task. As mentioned, the job task solicit competitive quotes also loads this factor for the factor analysis of job tasks managed by Procurement Managers. This finding is an indication of the specialization of Procurement Managers with regard to training and managing department personnel. The implication is that Procurement Managers may be regularly training and managing personnel regarding the job tasks of solicit competitive quotes and operating work policies.

When looking at job tasks related to solicitation, the job tasks loaded on this factor are similar to those loaded by the factor analysis of job tasks both performed and managed by all practitioners with the exception that fewer job tasks load the *solicitation* factor on the factor analysis of job tasks both performed and managed by the Procurement Manager as compared to those both performed and managed by all practitioners. More specifically, the job tasks of identify source of supplies, select method of procurement, develop solicitation document, review solicitation document, select contract type, solicit competitive quote are lacking. Yet, the both perform and manage factor analysis of Procurement Managers also includes conduct post-award debriefing, mitigate risk through terms and conditions, modify contracts, and remediate suppliers' noncompliance. The implications of these findings are that Procurement Managers are more specialized in this more senior regard, by which higher ranking practitioner job positions would be expected to consider risk mitigation and would be more likely to conduct a post-award debriefing. Also, the authority to modify contracts and remediate non-compliance is also characteristic of a more senior managerial position such as Procurement Manager by which certain policies and procedures may need to be overridden.

As compared to the solely manage factor analysis of Procurement Managers' job tasks, the same job tasks load the *solicitation* factor except that select payment method replaces conduct post-award debriefing and mitigate risk through terms and conditions on the factor. Not only are these two aforementioned job tasks absent from the factor analysis of job tasks performed

by all practitioners and the factor analysis of job tasks both performed and managed by all practitioners, but the job task of select payment method, which is also absent from these factor analyses of all practitioners, loads the *solicitation* factor for the solely manage factor analysis of Procurement Managers' job tasks. This implies that Procurement Managers assume more specialized roles and responsibilities with regards to solely managing solicitation job tasks than the baseline for public procurement practitioners. It would be expected that Procurement Managers would be more specialized in solicitation as it would be desirable to have lower-level employees deal with the day-to-day communication with potential vendors in order to set-up tiered contract administration and negotiations for the procurer.

Next, the job tasks that have been dealing with contract administration also appear to be more selectively managed and both performed and managed by Procurement Managers than the baseline of all practitioners. With respect to job tasks both performed and managed, negotiations job tasks of select negotiation members, prepare negotiations strategies, conduct negotiations, and document negotiations process load a factor with the job tasks resolve disputes and terminate contracts. Hence, numerous contract administration job tasks load the factor analysis of job tasks both performed and managed by all practitioners that do not load the *contract administration* factor for the factor analysis of job tasks both performed and managed by Procurement Managers. For Procurement Managers, it appears that they manage more selective job tasks within contract administration, job tasks that may be considered more implicative and

consequential, such as resolving disputes and terminating contracts, in conjunction with the job tasks dealing with negotiations. Resolving disputes and terminating contracts often require supervisory intervention considering the ramifications of these decisions that could render a deal to be cancelled or special contingencies to be made.

While the managing of job tasks factor analysis for Procurement Managers loads the negotiations job tasks on their own *negotiations* factor, the job tasks resolve disputes and terminate contracts do not load any factors, and the job tasks modify contracts and remediate suppliers' noncompliance load the *solicitation* factor. One implication is that job tasks related to negotiations become more rudimentary and hence can be completed in isolation of contract administration job tasks. A second implication is that job tasks of modify contracts and remediate suppliers' noncompliance may be addressed through the management oversight during solicitation phase rather than being addressed later on when it is more difficult and problematic to correct in the contract administration phase. In this regard, Procurement Managers appear to manage the area of public procurement proactively, given their specialization in these particular job tasks that are indicative of their higher level seniority and hence competencies.

Furthermore, the job tasks mitigate risk through terms and conditions and conduct a post-award debriefing load the *contract administration* factor for the both performing and managing factor analysis of all practitioners, but not the performing factor analysis of all practitioners, indicating that these two job tasks

necessitate a level of managerial competency. Yet, these two job tasks load the *solicitation* factor for the both performing and managing job tasks by Procurement Managers factor analysis, implying that Procurement Managers anticipate through executing these two job tasks in what may typically be an earlier phase of the procurement process, the solicitation rather than contract administration phase, as it makes sense that solicitation often takes place prior to the contract. This distinction for Procurement Managers implies higher level of competency based on managing as opposed to performing as well as a distinction compared to the baseline of all practitioners with regards to specialization of decision making in performing as opposed to managing tasks, and in which combination of job tasks to do so for either performing or both performing and managing.

Lastly, looking at the *strategic procurement planning* factor, the job tasks that load this factor are: establish mission, vision, and values, conduct value analysis, implement goals, objectives, and measures, monitor legal trends and laws, conduct business analyses, analyze economic trends and conditions, conduct cost-benefit, implement process improvement plans, implement procurement strategy, and formulate contingency plans. As compared to the manage factor analysis of Procurement Managers, the job tasks of establish mission, vision, and values, conduct value analysis, implement goals, objectives, and measures, and formulate contingency plan do not load the *strategic procurement planning* factor. Meanwhile, the job task upholds and promotes



mission, vision, and values loads a factor all by itself on the manage factor analysis for Procurement Managers.

This finding indicates a more specialized scope of job tasks for Procurement Managers when looking at solely managing as opposed to both performing and managing job tasks. Ultimately, it may be that Procurement Managers will solely manage certain job tasks that are considered to be more to the core of the organization, such as uphold and promote mission, vision, and values, and choosing to both perform and manage certain strategic procurement planning job tasks that are absent from the solely manage factor analysis of Procurement Managers but are loaded on the *strategic procurement planning* factor for both performing and managing of job tasks by Procurement Managers. As a result, it can be said that Procurement Managers specialize in managing certain job tasks with regard to strategic procurement planning.

When comparing the strategic procurement planning job tasks managed and both performed and managed by Procurement Managers to all practitioners, it can be seen that the strategic procurement planning job tasks both performed and managed by all practitioners also includes the job tasks uphold and promote mission, vision, and values and develop staff succession plan. While at a glance it may appear that the scope of work managed by all practitioners is more extensive in the area of strategic procurement planning than that of the higher level job position of Procurement Manager, perhaps Procurement Managers feel as though the job task of establish mission, vision, and values, as opposed to uphold and promote mission, vision, and values, is indicative of a more senior

role and responsibility. For example, the process of establishing mission, vision, and values appears to require a more creative and integrated process than does upholding and promoting the mission, vision, and values already in place. Also, one would expect senior practitioners to be involved in such a strategic planning process involving the establishment of mission, vision, and values.

Additionally, the job tasks establish mission, vision, and values, uphold and promote mission, vision, and values, monitor legislative trends and laws, and develop staff succession plan load the *strategic procurement planning* factor for job tasks both performed and managed but not for job tasks solely managed by all practitioners. For the factor analysis of job tasks managed by Procurement Managers, the job tasks establish mission, vision, and values, conduct value analysis, implement goals, objectives, and measures, and formulate procurement contingency, do not load the *strategic procurement planning* factor but do load this factor for the both perform and manage factor analysis for Procurement Managers. The implication is that Procurement Managers are more specialized in this area with regards to managing, suggesting that these types of job tasks related to technically oriented and calculative analysis are completed in groupings of job tasks and require multiple practitioners. Whereas the job task of uphold and promote mission, vision, and values is afforded its own attention, in which case Procurement Managers do solely manage this very important job task, even though the factor analysis for job tasks solely managed by all practitioners failed to load the uphold and promote mission, vision, and values job task and the establish mission, vision, and values job task.

## Chief Procurement Officers (CPOs)

Appendixes L and M show the findings for factor analyses of job tasks managed and job tasks both performed and managed by CPOs. Similar to the Procurement Managers, the job tasks performed by CPOs do not load any factors, further indicating the senior status of CPOs considering that there is no relationship found between job tasks performed by CPOs, though relationships were found between job tasks and factors when looking at the baseline of all practitioners for job tasks performed, as well as the factor analysis for job tasks performed by Buyers and Procurement Analysts. For the factor analysis of job tasks both performed and managed by CPOs the job tasks of follow-up and expedite orders and resolve delivery and receiving problems load a factor and the job tasks select method of disposal for obsolete equipment and dispose of obsolete materials load another factor. These two sets of job tasks reflect relatively senior job tasks within the *supply management* factor from the baseline factor analyses and the majority of factor analyses illustrated herein. Delivery and receiving problems as well as follow-up and expedite orders as a preventative measure are critical to the goal of procurements, which is to get a good or service from the provider to the consumer. Furthermore, the method and disposal of obsolete equipment and materials has surfaced as a major environmental issue with numerous externalities, characteristic of the specialization of CPOs and higher level roles and responsibilities.

Looking at the baseline of all practitioners' job tasks both performed and managed for the *supply management* factor, CPOs are more specialized in this

area and do not deal with lower-level process-oriented tasks such as design internal distribution channels, establish warehouse shipping procedures, and account for assets, though both the baseline factor analysis for job tasks both performed and managed and the CPO factor analysis for job tasks both performed and managed include select method for disposal of obsolete equipment and materials as well as dispose of obsolete materials, again demonstrating the narrative for consideration of these two job tasks as being managed by a relatively more senior job position of CPO.

When comparing managing and both performing and managing of job tasks by CPOs, the job tasks load the *supply management* factor for CPOs to a much wider extent. In fact, the job tasks that load the *supply management* factor for job tasks managed by CPOs are the same as those job tasks that load this factor for the job tasks both performed and managed by all practitioners, with the inclusion of facilitate movement of goods (and exclusion of follow-up and expedite orders as loaded with resolve delivery and receiving problems for the CPO job tasks both performed and managed factor analysis). The implication is that CPOs, the most senior public procurement job position, solely manage the job tasks that are both performed and managed by all practitioners, meaning that CPOs manage practitioners who are both performing and managing.

Next, there are 14 job tasks that load a *solicitation* factor for job tasks both performed and managed by CPOs as compared to 12 job tasks that load a *solicitation* factor for job tasks solely managed by CPOs. Identify sources of supplies, select contract type, and select payment method are not loaded on the

*solicitation* factor for job tasks managed by CPOs, yet CPOs reportedly solely managed the job task of prepare contracts, even though this job task does not load the *solicitation* factor for job tasks both perform and managed by CPOs. The implication is that CPOs are less involved in lower-level matters of solicitation or sourcing such as identify source of supplies, select payment method, or select contract type, instead leaving these job tasks to other lower-level practitioners. As evidenced thus far, CPOs solely manage a more specialized scope of job tasks than they do both perform and manage job tasks.

When looking at the baseline for job tasks both performed and managed by all practitioners, the job tasks prepare contract and review solicitation document loads the factor analysis for job tasks both performed and managed by all practitioners yet are absent from this factor for job tasks both performed and managed by CPOs. These job tasks are lower level when considering that an executive would rarely handle these documents given the presence of Procurement Managers and other practitioners to manage these job tasks. Meanwhile, select payment method loads the job tasks both performed and managed by CPOs for the *solicitation* factor but not for all practitioners. The explanation here could be that selecting the payment method is a job task that most practitioners would not be involved in since this job task is likely addressed by key decision-makers in the purchasing process, those who are in charge or have close access to the treasury.

For job tasks managed by CPOs as compared to the baseline for all practitioners surveyed, select method of procurement loads the *solicitation* factor

for CPOs but not for all practitioners, again indicating the privilege to aspects of payment and procurement method. In addition, select method of procurement, identify source of supplies, and select contract type load the *sourcing* factor for job tasks solely managed by all practitioners; sourcing as has been discussed is associated with more process-oriented job tasks and therefore lower-level practitioners. A factor that loads job tasks related to sourcing is noticeably absent from the factor analysis of job tasks solely managed by CPOs.

Next, it can be seen that CPOs reportedly both perform and manage the job tasks that have been continually factored on the *negotiations* factor throughout the factor analyses discussed thus far. Here, as is the case for the baseline of job tasks both performed and managed by all practitioners, the negotiations job tasks load with job tasks that have been associated with the *contract administration* factor. While the *contract administration* factor for the baseline of job tasks both performed and managed by all practitioners, as well as the factor analysis of job tasks both performed and managed by CPOs, includes the job tasks of modify contracts, remediate suppliers' noncompliance, resolve disputes, and terminate contracts, these job tasks are not loaded on the *contract administration* factor for job tasks solely managed by CPOs. Meanwhile, the job task conduct close-out activities load the *contract administration* factor for job tasks solely managed by CPOs but not the factor analyses for job tasks both performed and managed by CPOs or all practitioners. The implication is that job tasks not solely managed by CPOs are mid-level to the point that these issues

and measures of rectification are addressed at the mid-level, creating a hierarchy or tier underneath the highest-level practitioner, the CPO.

Also, the job tasks conduct post-award conference and conduct close-out activities load the factor analysis for job tasks managed by CPOs but not the job tasks both performed and managed by all practitioners, again implicating CPOs seniority when considering that more senior practitioners would be expected to conduct these types of follow-up or reinforcement activities.

Lastly, looking at the job tasks associated with the *strategic procurement planning* factor, the factor analysis of job tasks both performed and managed by CPOs include the job tasks of implement goals, objectives, and measures and develop staff succession plan while the factor analysis of job tasks managed by CPOs does not. Additionally, the baseline for all practitioners' both performing and managing of job tasks loads the same job tasks on the *strategic procurement planning* factor as does the factor analysis of job tasks both performed and managed by CPOs, except that the factor analysis of job tasks both performed and managed by CPOs also loads the job task implement goals, objectives, and measures. Here, the implication is that CPOs both perform and manage a larger scope of job tasks in an area of public procurement that appears to be a central planning and strategic activity for the organization. When comparing the factor analysis of the job tasks solely managed by CPOs for the *strategic procurement planning* factor to that of the same factor for job tasks managed by all practitioners, it can be seen that the job tasks conduct value analysis and implement goals, objectives, and measures load the *strategic procurement*

*planning* factor for job tasks managed by all practitioners but do not load this factor for job tasks managed by CPOs, indicating that CPOs may focus on job tasks with broader, more implicative scope to the organization within this area of public procurement.

## **Chapter Summary**

This chapter reported and discussed the findings from 15 factor analyses run according to job positions. The results from the factor analysis of each job position were compared to the baseline of all practitioners for that respective form of job task completion, such as perform, manage, or both perform and manage. Additionally, comparisons between a practitioner's performing as opposed to managing or both performing and managing of job tasks, as well as comparison of job tasks completed between job positions, was discussed.

This chapter served to analyze the results of the job task factor analyses according to job positions in drawing potential conceptual considerations that may serve as explanations for differences between levels of task specialization among practitioner job positions. The implications of the findings were discussed in an attempt to indicate how the results may connote various levels of task specialization between job positions. The discussion served to apply the findings to practice based on differences in forms of task completion such as job tasks that are either performed, managed, or both performed and managed, and according to job positions, especially with respect to the baseline of all practitioners.



The following chapter presents the findings of nine factor analyses conducted on practitioner job tasks according to organization size. Three factor analyses were run on practitioners from small organizations; one for job tasks performed, one for job tasks managed, and one for job tasks both performed and managed. The corresponding three factor analyses on job tasks were run on practitioners from medium and large organizations as well. Furthermore, the practical implications of these findings are discussed in the next chapter.

## CHAPTER 6: FACTOR ANALYSIS FOR JOB TASKS BY ORGANIZATION SIZE

This chapter reports and discusses the findings from nine factor analyses run according to organization size. The results from the factor analysis of each organization size are compared to the baseline of all practitioners for that respective form of job task completion, such as perform, manage, or both perform and manage. Additionally, comparisons between a practitioner's performing as opposed to managing or both performing and managing of job tasks, as well as comparison of job tasks completed between job positions, is discussed according to organization size.

This chapter serves to analyze the results of the job task factor analyses according to organization size in drawing potential conceptual considerations that may serve as explanations for differences between levels of task specialization according to practitioners from various organization sizes. The implications of the findings are discussed in an attempt to indicate how the results may connote various levels of task specialization between organization sizes. The discussion serves to apply the findings to practice based on differences in forms of task completion such as job tasks that are either performed, managed, or both performed and managed, and according to organization size, especially with respect to the baseline of all practitioners.

The following chapter presents the findings of nine factor analyses conducted on practitioner job tasks according to organization size. Three factor analyses were run on practitioners from small organizations; one for job tasks performed, one for job tasks managed, and one for job tasks both performed and managed. The corresponding three factor analyses on job tasks were run on practitioners from medium and large organizations as well. Furthermore, the practical implications of these findings are discussed as well.

### Small Organizations

For small organizations (1-500 employees), the factor analysis of job tasks performed and the factor analysis of job tasks managed do not produce factors that load job tasks. The factor analysis of job tasks both performed and managed, however, produces six factors that load job tasks (Appendix N). Table 15 gives the results for the comparison of the factor analyses of job tasks both performed and managed for all practitioners surveyed as compared to organization size.

Table 15  
*Factor Analyses of Job Tasks Both Performed and Managed by Organization Size*

F	All respondents	Small organizations	Large organizations
SU			
SO	developsolicitationdocument	developsolicitationdocument	developsolicitationdocument
	reviewsolicitationdocument	reviewsolicitationdocument	reviewsolicitationdocument
	Selectcontracttype	selectcontracttype	Selectcontracttype
	solicitcompetitivequote	solicitcompetitivequote	Solicitcompetitivequote
	solicitcompetitivebids	solicitcompetitivebids	Solicitcompetitivebids
	solicitcompetitiveproposals	solicitcompetitiveproposals	solicitcompetitiveproposals
	ensuretransparentprocesses	ensuretransparentprocesses	ensuretransparentprocesses

*(table continues)*

Table 15 (continued)

F	All respondents	Small organizations	Large organizations
	identifyevaluationmethodology	identifyevaluationmethodology	Identifyevaluationmethodology
	conductprebidconferences	conductprebidconferences	conductprebidconferences
	prepareandissueaddenda	prepareandissueaddenda	prepareandissueaddenda
	analyzeevaluatesolicitations	analyzeevaluatesolicitations	analyzeevaluatesolicitations
	preparerecommendationaward	preparerecommendationaward	Preparerecommendationaward
	selectmethodofprocurement	selectmethodofprocurement	selectmethodofprocurement
	identifysourceofsupplies	identifysourceofsupplies	identifysourceofsupplies
		preparecontracts	Preparecontracts Procurementcomplianceandlaw
			conductpostwarddebrief
			Modifycontracts
NG			selectnegotiationmembers
			preparenegotiationstrategy
			Conductnegotiations
			documentnegotiationprocess
			Remediateuppliernoncompliance
			Resolvedisputes
			Terminatecontracts
SM	designinternaldistributechannel	designinternaldistributechannel**	
	establishwarehouseshipprocess		
	disposesurplusequipmaterials	disposesurplusequipmaterials*	disposesurplusequipmaterials
	Accountforassets selectmethdisposalequipmaterial	selectmethdisposalequipmaterial*	Selectmethdisposalequipmaterial
	facilitatemovementofgoods	facilitatemovementofgoods**	
		followupandexpediteorders**	
		resolvedeliveryreceivingprobs	
		maintaininventory**	
SPP	conductbusinessanalyses	conductbusinessanalyses	conductbusinessanalyses
	analyzeeconmictrendcondition	analyzeeconmictrendcondition	Analyzeeconmictrendcondition
	conductcostbenefitacquisition	conductcostbenefitacquisition	conductcostbenefitacquisition
	implementprocessimproveplan	implementprocessimproveplan	Implementprocessimproveplan
	planimplementprocurestrategy	planimplementprocurestrategy	Planimplementprocurestrategy
	Conductvalueanalyses implementgoalobjectivemeasures	conductvalueanalyses	Implementgoalobjectivemeasures
	formprocurecontingencyplan	formprocurecontingencyplan	formprocurecontingencyplan
	monitorlegislativetrendslaws	monitorlegislativetrendslaws	monitorlegislativetrendslaws

(table continues)

Table 15 (continued)

F	All respondents	Small organizations	Large organizations
	developstaffsuccessionplan	developstaffsuccessionplan	developstaffsuccessionplan
	establishmissionvisionvalues upholdpromotmissionvisionvalu es	establishmissionvisionvalues	establishmissionvisionvalues
CA	monitorsuppliercompliance	monitorsuppliercompliance	monitorsuppliercompliance
	Modifycontracts remediatesuppliernoncompliance	modifycontracts remediatesuppliernoncompliance	
	Resolvedisputes	resolvedisputes	
	Terminatecontracts	terminatecontracts	
	evaluatesupplierperformance	evaluatesupplierperformance	evaluatesupplierperformance
	conductpostawarddebrief	conductpostawarddebrief	
	mitigateriskthru termsconditions	mitigateriskthru termsconditions	
	selectnegotiationmembers	selectnegotiationmembers	
	preparenegotiationstrategy	preparenegotiationstrategy	
	Conductnegotiations	conductnegotiations	
	documentnegotiationprocess	documentnegotiationprocess	
	conductpostawardconference	conductpostawardconference	
	conductcloseoutactivities	conductcloseoutactivities	conductcloseoutactivities
		respondprotestsandinquiries	
OF	implementoperatingworkpolicy	implementoperatingworkpolicy	Implementoperatingworkpolicy
	interpretpoliciesandprocedures	interpretpoliciesandprocedures	Interpretpoliciesandprocedures
	managedepartmentpersonnel	managedepartmentpersonnel	managedepartmentpersonnel
	Trainpurchasingpersonnel	trainpurchasingpersonnel	trainpurchasingpersonnel
	procurementcomplianceandlaw	procurementcomplianceandlaw	
		auditprocurementprocess	
		upholdpromotmissionvisionvalues	

Note. SU = Sourcing, SO = Solicitation NG = Negotiations, SM = Supply Management, SP = Strategic Procurement Planning, CA = Contract Administration, OF = Other Factor not identifiable.

\*Job tasks load their own SM factor \*\*Job tasks load a second SM factor

The job tasks implement operating work policies, interpret policies and procedures, audit the procurement process, manage department personnel, train purchasing department personnel, procurement compliance and law, and uphold and promote mission, vision, and values, load one factor. It is interesting to note that only the baseline factor analysis of job tasks both performed and managed for all practitioners load the interpret policies and procedures job task, the

implement operating work policies, or the audit the procurement process job task. Furthermore, when looking at the factor analysis of job tasks both performed and managed for the baseline of all practitioners, the job tasks manage department personnel and train department personnel also load this factor. One would expect that small organizations require practitioners to take a more active role in participating in job tasks related to training and managing, considering that practitioners may be required to multi-task in smaller organizations with fewer practitioners available to specialize.

Also, it is observed that the uphold and promote mission, vision, and values job tasks loads a factor with the job tasks train department personnel and manage department personnel, considering the perceived linkage between the three, such as employees may be trained with mission, vision, and values in mind, and managed in this manner as well. For the baseline factor analysis of job tasks both performed and managed by all practitioners, the job task uphold and promote mission, vision, and values loads a factor with the following job tasks establish mission, vision, and values, conduct value analysis, implement goals, objectives, and measures, monitor legislative trends and laws, conduct business analyses, analyze economic trends and conditions, conduct cost-benefit analysis, implement process improvement plan, plan and implement procurement strategies, formulate contingency planning, and develop staff succession plan. As compared to the job tasks loaded with the uphold and promote mission, vision, and values job task for the both perform and manage factor analysis of practitioners from small organizations, the job tasks that load a factor with uphold

and promote mission, vision, and values for the factor analysis of job tasks both performed and managed by all practitioners are more at a distance from the actual procurement, for example, there is less direct involvement. The reason for this may be that there are numerous specializations of practitioners within larger organizations.

Also, many of the job tasks loading this factor for the both perform and manage factor analysis for all practitioners are analytical, or technical, as opposed to administrative or process-oriented, whereby many larger organizations may emphasize mission, vision, and values for decisions with broad-based financial implication, as opposed to keeping close-watch of the process through managing job tasks such as audit the procurement process, implement operating work policies, and interpret policies and procedures.

Secondly, the factor analysis of job tasks both performed and managed by practitioners from small organizations loads a factor with job tasks that have been associated with *solicitation* from the other factor analyses. As compared to the baseline of all practitioners' job tasks both performed and managed, the identify source of supplies, select method of procurement, review solicitation document, and select contract type, all considered to be lower-level tasks that require close involvement to the process, load job tasks both performed and managed for practitioners from small organizations but not for the factor analysis of job tasks both performed and managed by all practitioners. This indicates that practitioners from small organizations have to assume a greater breadth of roles

and responsibilities and may be less specialized than practitioners at larger organizations.

Similar to the baseline both perform and manage factor analysis of all practitioners, a *contract administration* factor here loads negotiations job tasks such as select negotiations members, prepare negotiations strategy, conduct negotiations, and document the negotiations process, as well as job tasks more closely associated with administration of contracts such as conduct closeout activities, terminate contracts, resolve disputes, remediate suppliers' noncompliance, evaluate supplier performance, conduct a post-award start-up conference, mitigate risk through terms and conditions, conduct post-award debriefing, and respond to protests and inquiries. The baseline factor analysis of job tasks both performed and managed by all practitioners loads the same job tasks as the factor analyses of job tasks managed by practitioners from small organizations, except that practitioners from small organizations also both perform and manage the job task of respond to protests and inquiries, which indicates the greater involvement that the typical practitioner from a smaller organization would have with suppliers, vendors, and customers, for example, as compared to the typical practitioner from organizations of all sizes.

For the factor analysis of job tasks both performed and managed by practitioners from small organizations, a third factor loads the job tasks of follow-up and expedite orders, resolve delivery and receiving problems, maintain inventory, design internal distributions channels, and facilitate movement of goods. These job tasks have been loading on the *supply management* factor for



most of the factor analyses conducted herein. When comparing these job tasks to the both perform and manage factor analysis of all practitioners, it can be seen that practitioners from small organizations manage higher level tasks that practitioners from the baseline of all organizations do not such as follow-up and expedite orders, resolve delivery and receiving problems, maintain inventory, and facilitate movement of goods. These job tasks may be considered higher level considering that follow-up and expedite orders, resolve delivery and receiving problems, and maintain inventory, do not load a factor on the baseline of all practitioners for job tasks both performed and managed but do load a factor on the baseline of all practitioners for job tasks solely managed, indicating that these job tasks require greater practitioners' involvement through both managing, which again is indicative of practitioners in smaller organizations who need to be closer to the procurement process and attend to a breadth of activities, which indicates a lack of specialization as compared to larger organizations. Evidence that facilitate movement of goods is a high level job task, in particular, is that it is only loaded through the factor analysis of job tasks managed by all practitioners, the factor analysis of job tasks both performed and managed by Procurement Analysts, and the factor analysis of job tasks managed by CPO's.

Next, the three job tasks of account for assets, select method of disposal for obsolete equipment, and dispose of obsolete and surplus material, load a factor for the factor analysis of job tasks both performed and managed by practitioners from small organizations. These job tasks loaded the *supply management* factor for the factor analysis of job tasks both performed and

managed by all practitioners, which also loaded the job tasks of design internal distribution channels (included here with the previous factor analyzed) and establish warehouse shipping procedures (does not load any factor for small organizations). One potential explanation for the factor analysis of small organizations not loading the job task of establish warehouse shipping procedures is that smaller organizations may have smaller warehouse and distribution centers by which managing this task is not as crucial given a simpler or smaller scope warehouse operation.

Finally the job tasks establish mission, vision, and values, conduct value analysis, implement goals, measures, and objectives, monitor legislative trends and laws, conduct business analyses, analyze economic trends and conditions, conduct cost-benefit, implement process improvement plan, implement procurement strategy, formulate contingency plan, and develop staff succession plan all load a sixth factor for the factor analysis of job tasks both performed and managed by practitioners from small organizations. The job tasks that load this factor are identical with the job tasks that load a *strategic procurement planning* factor for the baseline factor analysis of job tasks managed by all practitioners except that the uphold and promote mission, vision, and values job task loads the *strategic procurement planning* factor for job tasks both performed and managed by all practitioners but not for job tasks both performed and managed by practitioners from small organizations. As mentioned, this job task loads a factor with broader job tasks such as manage department personnel and train department personnel. The fact that establish mission, vision, and values loads

the *strategic procurement planning* factor for practitioners from small organizations indicates that mission, vision, and values are also considered important for these financial, technical activities in small organizations. Yet, the job task of mission, vision, and values appears to be more specialized toward broader job tasks in small organizations, where mission, vision, and values may be considered to be “fluff” in managing department personnel and training department personnel for larger organizations, as represented by the baseline factor analysis of job tasks both performed and managed by all practitioners.

### **Medium Organizations**

For medium organizations (501-5,000 employees), the factor analysis of job tasks performed and the factor analysis of job tasks managed produce factors that load job tasks (Appendix O and Appendix P). The factor of analysis of job tasks both performed and managed fails for practitioners from medium-sized organizations. Table 16 illustrates the comparative results for job tasks performed by all practitioners surveyed and by practitioners from medium organizations. Table 17 illustrates the comparative results for job tasks managed by all practitioners surveyed and by practitioners according to organization size.

Table 16

*Factor Analyses of Job Tasks Performed by All Respondents and by Medium Organizations*

F	All respondents	Medium organizations
SU	utilizeautomprocurementsystem	
	procurementcomplianceandlaw	procurementcomplianceandlaw
	conductmarketresearch	Conductmarketresearch
	usehistoricalinfofordecisions	usehistoricalinfofordecisions
	identifysourceofsupplies	identifysourceofsupplies
	selectmethodofprocurement	selectmethodofprocurement
	upholdpromotmissionvisionvalues	
		recommendbuydecision
		developsolicitationdocument
		reviewsolicitationdocument
SO	developsolicitationdocument	
	reviewsolicitationdocument	
	selectcontracttype	
	solicitcompetitivequote	solicitcompetitivequote
	solicitcompetitivebids	solicitcompetitivebids
	solicitcompetitiveproposals	solicitcompetitiveproposals
	ensuretransparentprocesses	ensuretransparentprocesses
	identifyevaluationmethodology	identifyevaluationmethodology
	conductprebidconferences	conductprebidconferences
	prepareandissueaddenda	prepareandissueaddenda
analyzeevaluatesolicitations	analyzeevaluatesolicitations	
preparerecommendationaward	preparerecommendationaward	
preparecontracts	Preparecontracts	
NG	preparenegotiationstrategy	preparenegotiationstrategy
	conductnegotiations	conductnegotiations
	documentnegotiationprocess	documentnegotiationprocess
SM	maintaininventory	
	designinternaldistributechannel	
	establishwarehouseshipprocess	
	disposesurplusequipmaterials	disposesurplusequipmaterials
SPP	conductbusinessanalyses	conductbusinessanalyses
	analyzeeconmictrendcondition	analyzeeconmictrendcondition
	conductcostbenefitacquisition	conductcostbenefitacquisition
		selectmethdisposalequipmaterial

*(table continues)*

Table 16 (continued)

F	All respondents	Medium organizations
	implementprocessimproveplan planimplementprocurestrategy	implementprocessimproveplan planimplementprocurestrategy monitorlegislativetrendslaws
CA	monitorsuppliercompliance modifycontracts remediatesuppliernoncompliance resolvedisputes terminatecontracts	monitorsuppliercompliance Modifycontracts remediatesuppliernoncompliance Resolvedisputes terminatecontracts conductcloseoutactivities
OF		utilizeautomprocurementsystem

Note. SU = Sourcing, SO = Solicitation NG = Negotiations, SM = Supply Management, SP = Strategic Procurement Planning, CA = Contract Administration, OF = Other Factor not identifiable.

Table 17

*Factor Analyses of Job Tasks Managed by all Respondents and According to Organization Size*

F	All respondents	Medium organizations	Large organizations
SU	utilizeautomprocurementsystem conductmarketresearch usehistoricalinfofordecisions identifysourceofsupplies selectmethodofprocurement selectcontracttype	utilizeautomprocurementsystem conductmarketresearch usehistoricalinfofordecisions identifysourceofsupplies selectmethodofprocurement selectcontracttype utilizeaneprocurementsystem ensurecompliancediversity ensurecompliancesustainproc procurementcomplianceandlaw recommendbuydecision analyzeeconomicconditions	
SO	developsolicitationdocument solicitcompetitivequote solicitcompetitivebids solicitcompetitiveproposals ensuretransparentprocesses identifyevaluationmethodology conductprebidconferences	developsolicitationdocument solicitcompetitivequote solicitcompetitivebids solicitcompetitiveproposals ensuretransparentprocesses identifyevaluationmethodology conductprebidconferences	developsolicitationdocument solicitcompetitivequote solicitcompetitivebids solicitcompetitiveproposals ensuretransparentprocesses Identifyevaluationmethodology conductprebidconferences

(table continues)

Table 17 (continued)

F	All respondents	Medium organizations	Large organizations
	prepareandissueaddenda analyzeevaluatesolicitations preparerecommendationaward	prepareandissueaddenda analyzeevaluatesolicitations preparerecommendationaward	prepareandissueaddenda analyzeevaluatesolicitations Preparerecommendationaward modifycontracts conductpostwarddebrief preparecontracts selectpaymentmethod selectcontracttype analyzeeconomicconditions
NG	preparenegotiationstrategy conductnegotiations documentnegotiationprocess selectnegotiationmembers	preparenegotiationstrategy conductnegotiations documentnegotiationprocess selectnegotiationmembers evaluatesupplierperformance monitorsuppliercompliance	preparenegotiationstrategy conductnegotiations Documentnegotiationprocess selectnegotiationmembers remediatesuppliernoncompliance
SM	maintaininventory designinternaldistributechannel establishwarehouseshipprocess disposesurplusequipmaterials accountforassets followupandexpediteorders resolvedeliveryreceivingprobs selectmethdisposalequipmaterial	maintaininventory** designinternaldistributechannel** disposesurplusequipmaterials* followupandexpediteorders** resolvedeliveryreceivingprobs** selectmethdisposalequipmaterial*	maintaininventory designinternaldistributechannel establishwarehouseshipprocess Disposesurplusequipmaterials accountforassets selectmethdisposalequipmaterial
SP	facilitatemovementofgoods conductbusinessanalyses analyzeeconmictrendcondition conductcostbenefitacquisition implementprocessimproveplan planimplementprocurestrategy conductvalueanalyses implementgoalobjectivemeasures formprocurecontingencyplan	facilitatemovementofgoods* conductbusinessanalyses analyzeeconmictrendcondition conductcostbenefitacquisition implementprocessimproveplan planimplementprocurestrategy formprocurecontingencyplan	facilitatemovementofgoods conductbusinessanalyses analyzeeconmictrendcondition conductcostbenefitacquisition implementprocessimproveplan planimplementprocurestrategy conductvalueanalyses implementgoalobjectivemeasures planimplementprocurestrategy monitorlegislativetrendslaws
CA	monitorsuppliercompliance		

(table continues)

Table 17 (continued)

F	All respondents	Medium organizations	Large organizations
	evaluatesupplierperformance		trainpurchasingpersonnel
OF			

Note. SU = Sourcing, SO = Solicitation NG = Negotiations, SM = Supply Management, SP = Strategic Procurement Planning, CA = Contract Administration, OF = Other Factor not identifiable.

\*Job tasks load their own SM factor \*\*Job tasks load a second SM factor

Beginning with the factor analysis of job tasks performed by practitioners from medium organizations, it can be seen that the job tasks of utilize automated procurement systems, procurement compliance and law, conduct market research, recommend buy decisions, use historical information for decision making, identify source of supplies, and select contract type load a factor. When comparing these job tasks to those of the factor analysis for job tasks performed by all practitioners, these same job tasks load the *sourcing* factor there.

However, for that factor analysis, the job task of uphold and promote mission, vision, and values loads the *sourcing* factor there whereas it does not load any factors for this analysis of job tasks performed by practitioners from medium organizations.

The implication is that uphold and promote mission, vision, and values is a higher level job task that would be managed, as opposed to performed by practitioners. Medium organizations constitute enough practitioners to an extent that uphold and promote mission, vision, and values would not be performed as much as it would be managed, especially given the senior positions where this job task has been a point of differentiation for job positions.

With respect to a comparison of medium organizations and all practitioners, it is fitting that medium organizations mirror the *sourcing* factor for

performing job tasks considering that medium-sized organizations serve as a median point for practitioners used to collect the data, that is, the baseline of job tasks performed by all practitioners are somewhat of a median value in that small and large organizations balance each other out when grouped together, and in combination this tends to reflect the attributes of medium organizations. It is also expected that medium organizations reflect aspects of both small and large organizations to a higher degree than would a small organization reflect large ones, and otherwise.

Next, it is evident that a *solicitation* factor loads 12 job tasks surveyed. As compared to the job tasks factored on *solicitation* for job tasks performed by all practitioners, the only difference here is that the job task select contract type loads the *solicitation* factor for job tasks performed by all practitioners but loads the *sourcing* factor for job tasks performed by practitioners from medium organizations. One potential explanation for this is that select contract type, which has been discussed as a job task that is more specialized, would be more closely related to sourcing when performed at a small organization and closer related to solicitation when performed at medium organizations due to a more specialized distinction between the solicitation and sourcing areas of public procurement.

For the negotiations job tasks of prepare negotiations strategy, conduct negotiations, and document negotiations, these job tasks load their own factor for the factor analysis of job tasks performed by practitioners from medium organizations, as is the case for the factor analysis of job tasks performed by all



practitioners. Also, there are six job tasks that load what appears to be a *contract administration* factor. The job tasks performed by practitioners from medium organizations are the same as the job tasks performed by all practitioners when looking at the job tasks loading a *contract administration* factor. Again, these results are consistent with medium organizations mirroring a median sample across all practitioners, at least in the case here of performing job tasks.

Next, the job tasks of select method of disposal for obsolete equipment and dispose of obsolete surplus material load their own factor for job tasks performed by practitioners from medium organizations. As compared to all practitioners, the *supply management* factor there loads the job tasks of maintain inventory, design internal distribution channels, establish warehouse shipping procedures, and dispose of obsolete and surplus materials and equipment. Notice the absence of select method of disposal for obsolete equipment.

The job task involving selection of method, as opposed to actually disposing the equipment or materials, is considered a higher level, more specialized task. For practitioners from medium organizations, the inclusion of this job task, in addition to the specialization as reflected by having loaded only one other job task on the *supply management* factor demonstrates the more specialized focus and higher level requirement form practitioners in this area seen at medium organizations. Furthermore, consider that other than the two aforementioned job tasks, no other *supply management* tasks from the factor analysis of job tasks performed by all practitioners load the factor analysis of job tasks performed by practitioners from medium organizations. Thus, the

specialization of practitioners from medium organizations is apparent in performing supply management job tasks, as compared to all practitioners.

Lastly, a sixth factor is loaded by the job tasks of monitor legislative trends and laws, conduct business analyses, analyze economic trends and conditions, conduct cost-benefit analysis, implement process improvement plan, and plan and implement procurement strategies. The baseline for job tasks performed by all practitioners is the same for the *strategic procurement planning* factor for practitioners from medium organizations, except for the addition of the job task monitor legislative trends. This lack of specialization for practitioners from medium organizations may perhaps be explained by practitioners' tendency to specialize in managing as opposed to performing as organizations tend to get larger, as is the case for many of the organizations whose size is actually closer to the higher range of 5,000 employees for the scale, as opposed to the lower range of 500.

When looking at job tasks managed by practitioners from medium organizations, there are six factors that load the job tasks. Just as the manage factor analysis for the baseline of all practitioners, the job tasks that load the *sourcing* factor here consist of conduct market research, recommend buy decisions, use historical information for decision making, analyze economic conditions, identify sources of supplies, select method of procurement, and select contract type. However, the additional job tasks of utilize automated procurement systems, utilize e-procurement systems, ensure compliance diversity, ensure compliance with sustainable procurement, and procurement compliance and law

also load this factor for job tasks managed by practitioners from medium organizations.

The job tasks of utilize automated procurement systems and procurement compliance and law, are noticeably absent from the *sourcing* factor here, but were loaded on the solely perform factor analysis and both perform and manage factor analysis of all practitioners for the *sourcing* factor. Meanwhile, the job tasks of recommend buy decisions, analyze economic conditions, select method of procurement, and select contract type load the *sourcing* factor for the managing factor analysis but not the solely perform or both perform and manage factor analysis. There are numerous implications from the differences of job tasks loaded on this factor across respondent categories and performing vs. managing of job tasks.

First of all, the job tasks of utilize e-procurement systems, ensure compliance with sustainable procurement, and ensure compliance with diversity have not yet loaded any factors for any of the other factor analyses up to this point. As such, practitioners from medium organizations demonstrate specialization in both managing these job tasks, even though practitioners managing job tasks related to sourcing appear to be less specialized at medium organizations than from practitioners from organizations of all sizes, that is to say that practitioners from medium organizations are specialized in their both managing of these rarely managed job tasks but when attending to the area of sourcing in general, the same practitioners tend to manage a breadth of job tasks, which may be characteristic of practitioners at medium as opposed to

larger organizations since practitioners must assume a greater breadth of job tasks as organizations are smaller rather than larger.

When comparing job tasks managed by practitioners from medium organizations to job tasks solely performed by practitioners from medium organizations, the same job tasks load the *sourcing* factor for both factor analyses with the exclusion of the aforementioned three rare job tasks and the exclusion of the job task analyze economic conditions for the performing factor analysis. As compared to the technical job tasks also loaded on this factor such as conduct market research and use historical information for decision making, analyze economic conditions tends to indicate a higher level task that would be executed with broader scope, and perhaps be more likely to be managed by a practitioner.

Next, the job tasks of develop solicitation document, solicit competitive quote, solicit competitive bid, ensure transparent procurement, identify evaluation methodology, conduct pre-bid conferences, prepare and issue addenda, analyze and evaluate solicitation responses, and prepare recommendation award all load a factor appearing to be related to *solicitation*. These are the same job tasks as those loaded for this factor for the baseline of job tasks managed by all practitioners, except that the job task of prepare contracts does not load any factor for job tasks managed by practitioners from medium organizations. One potential explanation for this is that prepare contracts is a task that connotes to managing rather than performing.

Third, the negotiations job tasks of select negotiation members, prepare negotiations strategies, conduct negotiations, and document negotiations process load a factor with the job tasks of evaluate supplier performance and monitor supplier compliance. For the baseline of all practitioners for job tasks managed, only the negotiations job tasks load this factor. Instead, the job tasks of evaluate supplier performance and monitor supplier compliance load a separate factor there. At a glance, practitioners from medium organizations appear to be less specialized within the area of negotiations as compared to job tasks managed by all practitioners.

Yet, consider that as compared to job tasks managed by practitioners from medium organizations, the evaluate supplier performance job task does not load a factor for job tasks managed at medium organizations, yet it loads the *negotiations* factor for job tasks performed at medium organizations. Keep in mind the job task evaluate supplier performance loads its own factor with monitor supplier compliance for job tasks managed by all practitioners. The implications resounding from the job task of evaluate supplier performance is that it is a specialization across the sample of all practitioners when it comes to solely managing, yet it is less of a specialization by practitioners from medium organizations, especially since it loads no factor when looking at solely managing. One explanation for this job task not being prevalent in medium organizations is that medium organizations lack the specialization of large organizations to the degree that it is a practitioners' clear responsibility, whereas smaller organizations have numerous practitioners involved in this job task.

Hence, evaluation of supplier performance may not be a formal job task assigned to practitioners at medium organizations.

Next, the job tasks of follow-up and expedite orders, resolve delivery and receiving problems, maintain inventory, and design internal distribution channels all load a factor, and the job tasks of select method of disposal for obsolete equipment, dispose of obsolete surplus materials, and facilitate movement of goods load their own factor. As compared to the baseline of job tasks managed by all practitioners, these job tasks load the single factor on the baseline factor analysis of *supply management*. Additionally, the *supply management* factor there loads the job tasks of account for assets and establish warehouse shipping procedures. Hence, the supply management area of public procurement is much more specialized for practitioners from medium organizations as compared to practitioners from organizations of all sizes when it comes to managing job tasks, considering that two factors load the supply management job tasks both performed and managed when looking at medium organizations, and two supply management job tasks are absent from loading any factors for managing by practitioners from medium organizations.

Looking at solely managing of job tasks by practitioners from medium organizations, the supply management job tasks of follow-up and expedite orders, resolve delivery and receiving problems, maintain inventory, and design internal distribution channels do not load any factors. The implication is that these aforementioned job tasks involve a level of performing to execute the job task, which makes these job tasks less specialized in that they do not involve

managing, which further supports the previous reasoning that practitioners at medium organizations are more specialized in managing supply management than practitioners from organizations of all sizes.

Lastly, the job tasks of conduct business analyses, analyze economic trends and conditions, conduct cost-benefit analysis, implement process improvement plan, plan and implement procurement strategy, and formulate contingency plan, all load a factor that deals with *strategic procurement planning*. Looking at the baseline of job tasks managed by all practitioners, the job tasks that load the *strategic procurement planning* factor there include the same aforementioned job tasks with the addition of conduct value analysis, and implement goals, objectives, and measures. It appears that practitioners from medium organizations are more specialized with regards to *strategic procurement planning* as compared to these related job tasks managed by all practitioners.

When looking at the factor analysis of job tasks managed by practitioners from medium organizations, the additional job task of monitor legislative trends and laws is loaded on the *strategic procurement planning* factor but the job task of formulate procurement contingency plan does not load this factor. The implication is that formulating procurement contingency plan requires some performing, perhaps to garner the processes involved to better understand the alternatives in contingency planning, whereas monitoring legislative trends is a job task that would tend to be managed at medium organizations, considering

that this ongoing and intermittent type of job task may be managed by a practitioner who oversees a team.

### **Large Organizations**

For large organizations (5,001 or more employees), the job tasks of implement operating work policies, interpret policies and procedures, manage department personnel, and train purchasing department personnel all load a single factor for all the factor analysis of job tasks both performed and managed and job tasks managed (Appendix Q and Appendix R). Table 15 gives the results for the comparison of the factor analyses of job tasks both performed and managed for all practitioners surveyed as compared to organization size and Table 16 illustrates results for job tasks managed by all practitioners surveyed and according to organization size. Again, it is interesting to note that none of the baseline factor analyses or job position factor analyses load the interpret policies and procedures job task and only one of those factor analyses (manage for Procurement Managers) load the operating work policies job task. Furthermore, when looking at the factor analysis of job tasks both performed and managed for the baseline of all practitioners, the job tasks manage department personnel and train department personnel are absent. However, the factor analysis of job tasks both performed and managed by practitioners from small organizations does load a similar factor with the job tasks operating work policies, interpret policies and procedures, audit the procurement process, manage department personnel, train purchasing department personnel, procurement compliance and law, and uphold and promote mission, vision, and values. As compared to job tasks both



performed and managed by practitioners from small organizations for this factor, it appears that practitioners from large organizations are more specialized. Since job tasks such as audit the procurement process, procurement compliance and law, and uphold and promote mission, vision, and values are absent from the factor analysis of job tasks both performed and managed by practitioners from large organizations, it could be that practitioners are specializing in the training and managing functions, where policies and procedures form a basis, whereas job tasks dealing with the procurement process or procurement compliance are addressed by other practitioners.

A second factor for the factor analysis of job tasks both performed and managed by practitioners from large organizations loads the job tasks procurement compliance and law, identify source of supplies, select method of procurement, develop solicitation document, review solicitation document, select contract type, solicit competitive quote, solicit competitive bid, solicit competitive proposal, ensure transparent procurement, identify evaluation methodology, conduct pre-bid conferences, prepare and issue addenda, analyze and evaluate solicitation responses, prepare recommendation award, prepare contract, and conduct post-award debriefing. These job tasks relate to solicitation. As compared to the baseline for job tasks both performed and managed by all practitioners, the *solicitation* factor here loads the same job tasks except that procurement compliance and law is added to the *solicitation* factor for practitioner from large organizations, whereas this job task loaded a factor with manage department personnel, train department personnel, implement operating work

policies, and interpret policies and procedures. For practitioners from large organizations, the inclusion of the job task procurement compliance and law with the *solicitation* factor indicates a level of specialization beyond that seen from the baseline of all practitioners, considering that the job task procurement compliance and law becomes more specified and pertinent to actual procurements when dealing with the solicitation process particularly as opposed to being a part of more general and broad job tasks such as manage department personnel and train purchasing department personnel. The same results hold true for practitioners from small organizations, whereby the job task procurement compliance and law loads a job task with implement operating work policies, interpret policies and procedures, manage department personnel, train department personnel, and the additional job task of audit the procurement process, again implying the specialization of practitioners from large organizations considering that practitioners from small organizations manage the additional job task of audit the procurement process with job task loaded on this factor.

Similar to the baseline of job tasks both performed and managed by all practitioners, the factor analysis of job tasks both performed and managed by practitioners from large organizations load the four negotiations job tasks of select negotiation members, prepare negotiations strategy, conduct negotiations, and document negotiations with some contract administration job tasks such as modify contracts, remediate supplier noncompliance, resolve disputes, and terminate contracts. However, the baseline factor analysis of job tasks both

performed and managed by all practitioners also includes the job tasks of conduct post-award debriefing, mitigate risk through terms and conditions, conduct post-award conference, evaluate supplier performance, monitor supplier compliance, and conduct closeout activities. The implication is that practitioners from large organizations are more specialized with respect to job tasks both performed and managed related to contract administration than the baseline of all practitioners. Meanwhile, for job tasks both performed and managed by practitioners from large organizations, the job tasks of evaluate supplier performance, monitor supplier compliance, and conduct close-out activities load their own separate factor, again implying the specialization of practitioners from large organizations in that these two sets of contract administration-related job tasks are loaded on two separate, distinct factors, indicating that they may be both performed and managed by different practitioners of varied specialization.

When looking at job tasks both performed and managed by practitioners from small organizations as compared to those both performed and managed by practitioners from large organizations, it can be seen that practitioners from small organizations are less specialized in that they both perform and manage numerous additional job tasks as one *contract administration* factor, including those job tasks of evaluate supplier performance, monitor supplier compliance, and conduct close-out activities, in addition to respond to protest and inquiries, conduct post-award debriefing, conduct post-award conference, and mitigate risk through terms and conditions. Hence, the *contract administration* factor for job tasks both performed and managed by practitioners from small organizations

loads job tasks from three distinct factors when looking at job tasks both performed and managed by practitioners from large organizations, including the job tasks of mitigate risk through terms and conduct a post-award conference, which did not load any factor for the job tasks managed by practitioners from large organizations. Resultantly, practitioners from large organizations are more specialized than practitioners from small organizations in subareas related to contract administration.

Next, the two job tasks of select method of disposal for obsolete machinery and dispose of obsolete and surplus materials both load a single factor. As compared to the baseline of job tasks both performed and managed by all practitioners, practitioners from large organizations appear to be more specialized considering the baseline factor analysis of job tasks both performed and managed load the additional job tasks of design internal distribution channels, account for assets, and establish warehouse shipping procedures. When looking at job tasks both performed and managed by practitioners from small organizations, the job tasks account for assets also loads a factor with the job tasks select method of disposal for obsolete equipment and dispose of obsolete and surplus material, indicating that practitioners from large organizations are more specialized in supply management. It is worth noting that supply management has been considered a more specialized are of job tasks across most factor analyses discussed thus far. Additionally, for the job tasks both performed and managed by practitioners from small organizations, the job tasks of follow-up and expedite orders, resolve delivery and receiving problems,

maintain inventory, design internal distribution channels, and facilitate movement of goods load their own factor but these job tasks do not load any factor for the job tasks both performed and managed by practitioners from large organizations. Hence, practitioners from large organizations are more specialized in the job tasks both performed and managed regarding supply management than are practitioners from small organizations who assume a greater breadth of job tasks in this regard.

Lastly, job tasks both performed and managed by practitioners from large organizations load a *strategic procurement planning* factor. The similar job tasks that load this factor for job tasks both performed and managed by large organizations load this factor for job tasks both performed and managed by the baseline of all practitioners, except that the job task of uphold and promote mission, vision, and values and conduct value analysis load the *strategic procurement planning* factor for job tasks both performed and managed by all practitioners but do not load any factors for job tasks both performed and managed by practitioners from large organizations. The implication is that there is specialization in both performing and managing of this area on behalf of practitioners from large organizations that is geared towards a more narrow view of *strategic procurement planning* that does not involve some of the broader organizational imperatives captured through the job tasks of uphold and promote mission, vision, and values and conduct value analysis.

Additionally, when looking at job tasks both performed and managed by practitioners from small organizations, the job task conduct value analysis is

loaded onto the *strategic procurement planning* factor while the job task uphold and promote mission, vision, and values, loaded a factor with the job tasks implement operating work policies, interpret policies and procedures, audit the procurement process, manage department personnel, train department personnel, and procurement compliance and law. For small organizations, uphold and promote mission, vision, and values loads with job tasks that appear to be narrow in scope and substance, as opposed to loading a factor with strategic procurement planning job tasks that deal with broader economic analysis that may be geared toward more far-reaching organizational objectives. Nonetheless, practitioners from large organizations are more specialized in both performing and managing job tasks related to strategic procurement planning than practitioners from small organizations, especially when considering the additional job tasks both performed and managed by practitioners from small organizations for this factor, and the consideration that practitioners from large organizations do not both perform and manage the two job tasks of uphold and promote mission, vision, and values and conduct value analysis. These two job tasks do not load any factors for practitioners from large organizations implying that they specialize in the more finite analysis of the strategic procurement planning area, or that there are a number of practitioners at large organizations to an extent that some practitioners can be more focused in this area.

Finally, when looking at job tasks solely managed by practitioners from large organizations, there are five factors that load job tasks. The job tasks administer e-procurement, implement standardization processes, train

purchasing department personnel, and use historical information for decision making, all load one factor. It is important to note that no other factor analysis conducted herein, whether it is for all practitioners or subgroupings of job positions or organization sizes, loads the job tasks administer e-procurement or implement standardization process. This is an initial implication that practitioners from large organizations, in terms of managing job tasks, are more specialized than practitioners from medium and small organizations, as well as public procurement practitioners more broadly.

Additionally, the job task train purchasing department personnel does not load the factor analysis of job tasks managed by the baseline of all practitioners, indicating that training is involved in the other job tasks of administer e-procurement and implement standardization process, and that practitioners from large organizations specialize in this role. It can also be surmised that use of historical information is being incorporated into these systems. As compared to job tasks both performed and managed by large organizations, the job task train purchasing department personnel loads with the job tasks implement operating work policies, interpret policies and procedures, and manage department personnel. Hence, it appears that job tasks managed by practitioners from large organizations deal with e-procurement whereas managing and training with regards to policies are both performed and managed by practitioners. For medium organizations, none of these job tasks load a factor, indicating that training and managing through policies and standardization are much more important for large, as opposed to medium organizations, which makes sense

considering that large organizations need to use processes and procedures, in addition to technology, to help manage the complexities typically presented by large organizations.

Next, the job tasks that have been loading *solicitation* factors for the majority of the factor analyses conducted also load the same factor for job tasks both managed by large organizations. These job tasks are: analyze economic conditions, select method of procurement, develop solicitation document, select contract type, solicit competitive quote, solicit competitive bid, solicit competitive proposal, ensure transparent procurement, identify evaluation methodology, conduct pre-bid conference, prepare and issue addenda, analyze and evaluate solicitation responses, prepare and make recommendation award, select payment method, prepare contracts, conduct post-award debriefing, and modify contracts. However, when looking at the baseline of job tasks managed by all practitioners, the only job tasks that load a factor there is select contract type and analyze economic conditions. This implies that practitioners from large organizations are more specialized in managing of job tasks than practitioners from all organizations, considering that this job task is absent from their scope of activities.

When looking at job tasks both performed and managed by practitioners at large organizations, the job tasks of procurement compliance and law, identify source of supplies, and review solicitation document, also load the *solicitation* factor, whereas these job tasks did not load this factor for job tasks managed by practitioners from large organizations. On the other hand, the job tasks of



analyze economic conditions and select payment method load the factor analysis of job tasks managed for the *solicitation* factor but are completely absent from being factored in the factor analysis of job tasks both performed and managed by practitioners from large organizations. These findings show the specialization of practitioners in large organizations when it comes to managing as opposed to both performing and managing job tasks. While the job tasks of procurement compliance and law, identify source of supplies, and review solicitation document have been associated with more narrowly focused tasks where the practitioner must be closer to the procurement process, these tasks are actually both performed and managed at large organizations but not solely managed. This means that public procurement practitioners at large organizations are so specialized that they only perform these more process-oriented tasks when the need to also manage arises. At the same time, tasks with more direct impact on the scope of the procurement or that are considered higher level because of the technical characteristics involved in terms of considering numerous factors in the environment and organization, such as analyze economic conditions and select payment method, are managed by practitioners from large organizations.

When looking at job tasks managed by practitioners at medium organizations, the job tasks absent from being factored include select payment method, prepare contract, and conduct post-award debriefing, meanwhile other absent job tasks such as select method of procurement, select contract type, and analyze economic conditions load a *sourcing* factor there. The implication is that practitioners from larger organizations are more specialized in *solicitation* but that

practitioners from medium organizations do have specialization in sourcing. It may be the case where sourcing is a task more commonly managed or both performed and managed at smaller organizations, considering that a *sourcing* factor loads in those two cases, but sourcing job tasks are absent from the factor analysis of job tasks managed by practitioners from large organizations.

The typical negotiations job tasks of select method of procurement, prepare negotiations strategy, conduct negotiations, and document negotiations process, along with the job task of remediate suppliers' noncompliance all load a factor for job tasks managed by practitioners from large organizations. The first four aforementioned job tasks also load a *negotiations* factor for job tasks managed by all practitioners. The addition of the job task remediate suppliers' noncompliance demonstrates a specialized aspect of the negotiations area that only practitioners from large organizations appear to solely manage.

When looking at the factor analysis of job tasks both performed and managed by practitioners from large organizations, the job tasks modify contracts, remediate suppliers' noncompliance, resolve disputes, and terminate contracts also load the same factor as the four aforementioned negotiations tasks, indicating that similar to job tasks both performed and managed by all practitioners, job tasks related to negotiations fall under the same area as job tasks related to contract administration, thereby each of these factor analyses forms a *contract administration*, rather than *negotiations* factor. Now, when looking at job tasks managed by medium organizations, the four negotiations job tasks load a factor with the job tasks of evaluate supplier performance and

monitor supplier compliance. Notice the main difference between job tasks managed by practitioners from large organizations and practitioners from medium organizations when it comes to negotiations is that practitioners from large organizations are more specialized in remediation of noncompliance, whereas practitioners from medium organizations are most specialized in evaluating supplier performance and monitoring supplier compliance. It makes sense that at larger organizations, with scope, complexity, and volume of procurements expected to be greater, then practitioners at large organizations would have less capacity to monitor and evaluate and therefore focus on remediation, whereas medium organizations can be more proactive in evaluating and monitoring to prevent a situation where remediation would have to occur.

Next, the job tasks of maintain inventory, design internal distribution channels, account for assets, establish warehouse shipping procedures, select method of disposal, dispose of obsolete and surplus materials, and facilitate movement of goods load a *supply management* factor. As compared to the factor analysis of job tasks managed by the baseline of all practitioners, these same job tasks load the *supply management* factor there with the addition of two more job tasks consisting of follow-up and expedite orders and resolve delivery and receiving problems, which do not load any factors for job tasks managed by practitioners from large organizations. As such it appears that practitioners at large organizations are more specialized with their scope of job tasks within supply management. Simultaneously, when looking at job tasks both performed and managed by practitioners from large organizations, only select method of

disposal for obsolete equipment and dispose of obsolete and surplus materials load their own factor, with the other supply management job tasks not loading any factors, which implies that the other supply management job tasks require a level of performing.

When comparing the results of the factor analysis of job tasks by practitioners at large organizations and practitioners at medium organizations, the factor analysis of job tasks managed at medium organizations loads the job tasks follow-up and expedite orders, resolve delivery and receiving problems, maintain inventory, and design internal distribution channels on one factor, and the job tasks of select method of disposal, dispose of obsolete and surplus materials, and facilitate movement of goods on another factor. Meanwhile, the job tasks account for assets and establish warehouse shipping procedures do not load any factors there. At larger organizations, there may be more emphasis and specialization with regards to accounting for assets and establish shipping procedures, in order to oversee what may be larger distribution or warehouse operations. At the same time, it appears that there is actually more specialization within supply management at medium organizations when it comes to managing job tasks. Additionally, the job tasks follow-up and expedite orders and resolve delivery and receiving problems do not load any factors for the job tasks managed at large organizations but load a *supply management* factor for job tasks managed at medium organizations. The implication here is that practitioners from large organization specialize in a more narrow scope of roles and responsibilities when it comes to the area of supply management, while the

supply management function appears to be more prevalent in medium organizations to the extent that more job tasks load the supply management factor, which is split into two distinct factors for job tasks managed by practitioners at medium organizations.

Lastly, the fifth factor loaded for job tasks managed by practitioners from large organizations deals with job tasks related to a *strategic procurement planning* factor. These job tasks are: conduct value analysis, implement goals, objectives, and measures, monitor legislative trends and laws, conduct business analysis, analyze economic trends and conditions, conduct cost-benefit, implement process improvement plan, plan and implement procurement strategy, and formulate contingency plan. As compared to the factor analysis of job tasks managed by the baseline of all practitioners, the job tasks are the same except that practitioners from large organizations also manage the job task monitor legislative trends and laws, perhaps indicating an emphasis on legal parameters to control organizational activities when organizations become large.

When comparing job tasks managed at large organizations to those both performed and managed at large organizations, the job tasks both performed and managed by large organizations include establish mission, vision, and values, and develop staff succession plan, which appear to be job tasks that are more inclined toward managing as opposed to hands-on performing. Meanwhile, the job task of conduct value analysis is absent from job tasks both performed and managed at medium organizations, indicating that more technical work is solely managed, as opposed to both performed and managed.

In addition, when looking at job tasks managed by practitioners from medium organizations, it can be seen that the job tasks of conduct value analysis, implement goals, objectives, and measures, and monitor legislative trends are absent from the *strategic procurement planning* factor for medium organizations but load this factor for practitioners from large organizations. The implication may be that medium organizations have less of a need to engage in these technical tasks while larger organizations have become more developed in their efforts toward specialization with regard to strategy and planning.

### **Chapter Summary**

This chapter reported and discussed the findings from nine factor analyses run according to organization size. The results from the factor analysis of each organization size were compared to the baseline of all practitioners surveyed for that respective form of job task completion, that is, perform, manage, and both perform and manage. Additionally, comparisons between a practitioner's performing as opposed to managing or both performing and managing of job tasks, as well as comparison of job tasks completed between across organization sizes was discussed.

This chapter served to analyze the results of the job task factor analyses according to organization size in drawing potential conceptual considerations that may serve as explanations for differences between levels of task specialization according to practitioners from various organization sizes. The implications of the findings were discussed in an attempt to indicate how the results may connote various levels of task specialization contingent upon organization sizes. The

discussion served to apply the findings to practice based on differences in forms of task completion such as job tasks that are either performed, managed, or both performed and managed, and according to organization size, especially with respect to the baseline of all practitioners.

The following chapter summarizes the major takeaways of this study. The implications for theory, research, and practice are discussed, as well as areas for future research and inquiry. The dissertation concludes with brief final thoughts.

## CHAPTER 7: CONCLUSION

This chapter summarizes the key discussion points as illustrated by the implications of findings. First, major takeaways are highlighted in order to conclude that task specialization increases for practitioners in higher ranked job positions and for practitioners in larger organizations. Task specialization is exemplified in public procurement with respect to job tasks performed, managed, and both performed and managed. Task specialization of particular job positions and organization sizes are compared to the baseline of all practitioners, as well as to other job positions and organization sizes.

Furthermore, the implications for theory and research are discussed, which link the presence of task specialization among public procurement practitioners to the theoretical discussion of professionalization in public administration. The research implications are also presented, which discuss the potential for further research to be conducted as it relates to job tasks performed, managed, and both performed and managed by public procurement practitioners. The practical implications are subsequently discussed to identify applications to the public procurement practice. In conclusion, final thoughts are presented to reflect the resounding elements abstracted from this study.

### **Major Takeaways**

The 28 factor analyses run result in implicative findings for studying the professionalization of public procurement through task specialization. First of all,



among the task completion modes of perform, manage, and both perform and manage, the act of managing job tasks is most specialized by public procurement practitioners, which is indicative of the advanced level of proficiency displayed by public procurement practitioners. While the managing of job tasks is found to be more specialized in public procurement, the performing of job tasks is considered less specialized but the job tasks performed also connote a lower-level of proficiency, as indicated by the nature of job tasks performed in this study and the lower ranked practitioners who most commonly perform, as opposed to manage or both perform and manage job tasks. These results help establish an initial baseline of professionalization with which to compare the subsequent findings.

Additionally, the act of managing is found to be the most specialized, as compared to performing, both performing and managing, or performing or managing job tasks. Higher ranked practitioners display greater incidence of managing job tasks than do lower ranked job positions, and the combination of job tasks managed is more specialized than job tasks performed, both performed and managed, or performed or managed. Furthermore, practitioners from large organizations also specialize in managing as evident by unique combinations of job tasks, indicating a relationship between task specialization and size of organization. Based on these results, both null hypotheses were rejected; essentially there is a positive relationship between increased task specialization and ascending job positions and a positive relationship between increased task specialization and increasing organization size.

Task specialization with respect to job position and organization size is evident based on results of the factor analyses executed herein. The findings showed that the three factor analyses for Procurement Assistants do not load job tasks on any factors. Thus, it can be concluded that Procurement Assistants are not very specialized because there is no consistency for combinations of job tasks being performed, managed, or both performed and managed; Procurement Assistants complete a host of tasks, many of them in isolation. The factor analyses for Buyers only loads factors for job tasks performed, indicative of a role limited to performing, a role that may be considered differentiated but not specialized as it relates to task specialization and professionalism, whereby emphases is on barriers to entry and knowledge, skills, and abilities (Christensen, 1994; Hughes, 1958; Kline, 1981). In sum, these two job positions appear to be lower level as well as less specialized.

All three of the factor analyses for Procurement Analysts load factors on job tasks implying that Procurement Analysts are more advanced practitioners who specialize in a variety of areas within public procurement as compared to Buyers and Procurement Assistants. Basically, Procurement Analysts have specialization across numerous areas where job tasks may be performed, managed, and both performed and managed, but Procurement Analysts lack the greater roles and responsibilities that would be expected of more senior practitioners in the area of strategic procurement planning.

For the more senior job positions, there is even greater instance of task specialization. Procurement Managers specialize in managing job tasks

considering that the factor analysis of job tasks performed did not load any factors. However, specialization is demonstrated by Procurement Managers in managing to a greater extent of specialization than the baseline of practitioners as well as lower ranked job positions. Finally, CPOs are found to have the most task specialization among the five job positions under study. The factor analysis for job tasks performed by CPOs did not load any factors, indicating a specialization toward the more advanced modes of managing and both performing and managing. Furthermore, CPOs demonstrated the most task specialization with regard to job tasks managed and job tasks both performed and managed as compared to other job positions, especially when looking at the unique combinations of job tasks that loaded factors and the presence of job tasks loaded on factors that rarely loaded factors for the other analyses.

When examining task specialization in public procurement according to organization size, the findings demonstrate that task specialization increases as size of organization increases, which implies a characteristic of task specialization in public procurement that connotes toward professionalization. First, by factoring job tasks for small organizations, it is concluded that these practitioners are less specialized and need to assume a greater breadth of roles and responsibilities because there are fewer practitioners to get the job done. For practitioners at medium organizations, it is concluded that these practitioners, of the three size groupings used herein, most closely reflect the baseline of all practitioners, which is not surprising given that the data from the baseline of all

practitioners tends to average out to equate to a middle-range that would be more closely related to practitioners from medium organizations.

However, practitioners from medium organizations do demonstrate specialization in certain areas of public procurement similar to practitioners from large organizations such as supply management and strategic procurement planning, as well as job tasks involving mission, vision, and values. Also, practitioners from medium organizations show specialization in other areas where practitioners from smaller organizations demonstrated specialization such as sourcing and solicitation, as well as job tasks involving training and managing. This duality for medium organizations in itself indicates a level of specialization for medium organizations that is beyond that of small organizations.

Practitioners from large organizations were the most specialized according to managing and both performing and managing job tasks as compared to practitioners from organizations of other sizes, and as compared to the baseline of all public procurement practitioners surveyed. These practitioners specialize in job tasks managed and job tasks both performed and managed, and were more specialized across areas of public procurement than smaller organizations and than the baseline of all practitioners surveyed. The implication is that public procurement practitioners are specialized to an extent that as organization size increases, the demands of the public procurement practitioner also increase to require more task specialization.

## Implications for Research and Theory

Public administration theorists have debated the essence of professionalism in public administration for decades (Denhardt, Denhardt, & Aristigueta, 2016; Follet, 1924; Gulick, 1937; Hood, 1998; Ingraham & Rosenbloom, 1989; Lowi, 1979; Niskanen, 1971; Pollitt, 1993; Simon, 1946; Stivers, 1994; Waldo, 1948; Weber, 1919; Wilson, 1887). There are also numerous criteria for which professionalism can be measured in the public sector (Christensen, 1994; Gargan, 1998; Greenwood, 1957; Kline, 1981; Parsons, 1939). This dissertation focused on task specialization as a means for gauging professionalism in public administration by examining task specialization of practitioners in the field of public procurement. Similar to public administration, scholars and practitioners have been searching to establish bases of professionalization for the field of study and practice.

Contrary to prevailing concerns regarding a lack of task specialization in public administration due to modern tenets of outsourcing, contracting, and privatization (Hood, 1998; Niskanen, 1971; Pollitt, 1983), the findings of this dissertation show that public administrators indeed demonstrate levels of task specialization to a substantial degree that task specialization varies according to practitioner job position and organization size. These conclusions suggest that a theory of task specialization can be applied to public administration and public procurement in particular, and further research into the job tasks, as well as roles and responsibilities, of practitioners is warranted.

The factor analyses techniques utilized herein open the door for a quantitative approach that allows for in-depth interpretation of results. Additional factor analyses can be applied to the data, such as an additional round of factor analysis that could reveal more specific relationships between job tasks. Also, factors from various factor analyses that were run in this study can be combined to examine differences between loadings among various practitioner job tasks performed, managed, or both performed and managed to better understand relationships between groupings of job tasks. The implications could point towards new findings regarding optimal combinations of job task performance and management, as well as the ideal make-up of practitioners according to job positions.

### **Practical Implications**

There are numerous practical implications from the conclusions drawn in this dissertation. Prior to this study, there had not been a study conducted that looks specifically at the job tasks performed, managed, and both performed and managed by public procurement practitioners. While numerous scholars and practitioners had examined the development of standards in public procurement (Buffington & Flynn, 2007; Dominick & Lunney, 2012; McCue & Pitzer, 2005; Thai, 2001), none of these studies empirically examined job tasks.

The takeaways from this study provide a foundation for public procurement that can be used as a basis for developing education and training programs, as well as for selection and promotional purposes. Additionally, understanding which job tasks are related in terms of performing, managing, and

both performing and managing can shed light on the manner in which job tasks are completed as well as better understanding the make-up of broader job areas in public procurement. With regards to education and training, programs should be developed around the job tasks that load factors in this study. For training programs, practitioners of various job positions can have programs geared towards job tasks that loaded factors for each respective job position, and performing and managing emphases can be organized around the factor loadings as well. Also, training programs can be devised according to participants coming from various organizations sizes.

Furthermore, discovering the job tasks in public procurement with respect to job positions and organization size helps to conceptualize the roles and responsibilities in public procurement by having a context (baseline of all practitioners, job position, organization size) for comparison and discussion of task specialization. Basically, when it comes to devising curricula for formal education programs, the nature and extent for which job tasks need to be studied is based on the context of the practitioner, broader organization, and setting. The way that practitioners specialize in particular job tasks is dependent on their position within the organization and how the job tasks relate to other practitioners' job tasks within the organization, especially considering that substantial amounts of public procurement job tasks are performed, managed, or both performed and managed in combinations with other job tasks. These job tasks are likely performed and managed in pursuit of broader organization objectives or at a minimum broader procurement functions or initiatives.

## Final Thoughts

This study accomplished its goal of examining the job tasks of public procurement and identifying aspects of task specialization for practitioners to develop a basis for professionalization of the practice. The study also established distinctions between job positions and expectations for task specialization with regard to organization size. This job analysis served as a starting point for studying the field of public procurement by identifying what it is that practitioners actually do, in what combinations these job tasks are completed, who it is that completes these job tasks, and whether the job tasks are typically performed, managed, or both performed and managed. From here, research can be done on how these job tasks are performed, managed, and both performed and managed. As one example, it can be studied as to how completion of these job tasks can be made neutral or political, and what the potential implications for other job tasks, practitioners, and broader organizations objectives may be based on different approaches to completing job tasks.

This dissertation also laid the framework for studies on task specialization of other subgroups of public administrators, and even practitioners in the private sector as well. The study demonstrated how a research study can be analyzed using factor analysis that enables the researcher to apply subject-matter knowledge to calculated results for the purposes of discussing implicative findings that can relate to research, theory, practice, and policy. This dissertation is also a culmination of numerous iterations that have all improved the quality of the study and the researcher's capacity to generate and analyze results in a



manner consistent with prevailing practices in public procurement and administration.

## APPENDICES

## Appendix A

### 2012 UPPCC Survey Instrument

This survey can be completed in approximately 35 minutes. A progress bar is provided at the bottom of each page to indicate the percentage of the survey you have completed. The survey consists of the following sections:

Section 1: Background & General Information

Section 2: Tasks

Section 3: Knowledge

Section 4: Recommendations for Exam Content

Section 5: Comments

Section 6: Industry Information

Each time you click the "Next Page" button, your answers will be recorded and you will be transferred automatically to the next set of items. Upon completion of the entire survey, you will be asked to click a button marked "Submit Survey". On subsequent survey pages, a "Back" button is available to assist in navigating through the survey.

#### How to Exit An Incomplete Survey And Continue Later

If you cannot finish the entire survey at one sitting, click the "Save" button. Once you have clicked "Save", the software will produce a unique URL (link) to access the survey containing your saved responses. Record this new link by copying and pasting it to a notepad or sending yourself an email to return to the survey at a later time. By using the saved link, you will NOT be able to return to the questions of your previous session, so please be sure to answer all questions on the pages before your save point. If you do not re-access the survey using the saved link, your responses will be lost and you will need to restart the survey from the beginning.

#### Screen Resolution and Survey Text Size

This website is optimized to be viewed at 800 by 600 resolution or higher. If viewed at resolutions less than 800 by 600, the survey may exceed the size of your screen. If you need assistance with this issue, please let us know. If you would like to adjust the text size, click on VIEW on your browser's menu bar, then select TEXT SIZE. You will be able to select the text size you want (large; largest; etc.).

#### Technical Assistance

If you encounter any technical difficulties with completing the survey online or have questions regarding the survey content, you may contact us. Please be sure to identify the survey you are taking (UPPCC Job Analysis Survey). Email: pnjsurvey@prometric.com or Telephone: (609) 895-5234. Please leave a voice mail message. You will receive a response within 24 hours, Monday through Friday (except holidays).

(End of Page 1)

## SECTION 1: BACKGROUND AND GENERAL INFORMATION (Items 1 to 15)

The information that you provide in this section is completely confidential and will be used for research purposes only. Please answer the following questions by selecting the response that most closely describes you or your professional activities or type in your answer as appropriate. All questions with an asterisk (\*) require a response.

\*1. Which of the following UPPCC designations do you hold?

CPPB only >>>> Skip to Page 3: \*1a. In what year did you initially earn your CPPB certification?

CPPO only >>>> Skip to Page 4: \*1b. In what year did you earn your CPPO certification?

CPPB and CPPO

None >>>> Skip to Page 5: \*2. How long have you worked in the field of public procurement?

(End of Page 2)

\*1a. In what year did you initially earn your CPPB certification?

1979\_ 1980\_ 1981\_ 1982\_ 1983\_ 1984\_ 1985\_ 1986\_ 1987\_ 1988\_ 1989\_ 1990  
 1991\_ 1992\_ 1993\_ 1994\_ 1995\_ 1996\_ 1997\_ 1998\_ 1999\_ 2000\_ 2001\_ 2002  
 2003\_ 2004\_ 2005\_ 2006\_ 2007\_ 2008\_ 2009\_ 2010\_ 2011\_ 2012

Advanced Branch: biq1 \*1. Which of the following UPPCC designations do you hold? = CPPB only; >>>> Skip to Page 5: \*2. How long have you worked in the field of public procurement?

(End of Page 3)

\*1b. In what year did you earn your CPPO certification?

1964\_ 1965\_ 1966\_ 1967\_ 1968\_ 1969\_ 1970\_ 1971\_ 1972\_ 1973\_ 1974\_ 1975  
 1976\_ 1977\_ 1978\_ 1979\_ 1980\_ 1981\_ 1982\_ 1983\_ 1984\_ 1985\_ 1986\_ 1987  
 1988\_ 1989\_ 1990\_ 1991\_ 1992\_ 1993\_ 1994\_ 1995\_ 1996\_ 1997\_ 1998\_ 1999  
 2000\_ 2001\_ 2002\_ 2003\_ 2004\_ 2005\_ 2006\_ 2007\_ 2008\_ 2009\_ 2010\_ 2011  
 2012

(End of Page 4)

\*2. How long have you worked in the field of public procurement?

Less than 1 year\_ 1 to 2 years\_ 2 to 3 years\_ 3 to 4 years\_ 4 to 5 years\_ 5 to 10 years  
 10 to 15 years\_ 15 to 20 years\_ 20 to 25 years\_ More than 25 years  
 My experience is with the private sector only

\*3. How long have you worked in the field of procurement (both public and private)?

Less than 1 year\_ 1 to 2 years\_ 2 to 3 years\_ 3 to 4 years\_ 4 to 5 years\_ 5 to 10 years  
 10 to 15 years\_ 15 to 20 years\_ 20 to 25 years\_ More than 25 years

4. How long have you worked in your current position?  
\_ Less than 1 year\_ 1 to 2 years\_ 2 to 3 years\_ 3 to 4 years\_ 4 to 5 years\_ 5 to 10 years  
\_ 10 to 15 years\_ 15 to 20 years\_ 20 to 25 years\_ More than 25 years  
\_ Not currently employed/Retired

\*5. Which of the following most closely describes your current position?

Administrative Support  
Assistant Director/Unit Supervisor  
Consultant  
Contract Administrator/Contract Management  
Director/Manager of Procurement  
Entry Level Buyer/Contract Specialist  
Executive/Senior Administrator/Chief Procurement Officer  
Finance/Accounting Administrator  
Intermediate Level Buyer/Contract Specialist  
Intern/Student  
Legal Administrator/Counsel  
Procurement Compliance Officer/Auditor  
Program Manager  
Program Supervisor  
Risk Management Administrator  
Senior Level Buyer/Contract Specialist  
Warehouse/Stores/Inventory Manager  
Warehouse/Stores/Inventory Support  
Not currently employed/Retired

\*6. Which setting best describes where you currently work?

County Government  
District of Columbia or Territorial Government  
Education (K-12)  
Federal Government  
Higher Education  
Hospital/Healthcare Facility  
Legislative or Court  
Military  
Municipal/City Government  
Non-Profit Organization  
Private Company  
Public Utility  
Special Authority  
State/Provincial Government  
Transportation  
Not currently employed/Retired

\*7. What is the size of your organization's/agency's procurement department/unit

staff, including support staff?

- \_ 1 to 5 employees\_ 6 to 10 employees\_ 11 to 20 employees\_ 21 to 50 employees
- \_ 51 to 100 employees\_ More than 100 employees

\*8. What is the size of your organization/agency?

- \_ 1 to 100 employees\_ 101 to 500 employees\_ 501 to 1,000 employees\_ 1,001 to 5,000 employees\_ 5,001 to 10,000 employees\_ More than 10,000 employees

(End of Page 5)

9. What is your highest degree attained through formal education?

- High school or equivalent
- Associate's degree or College diploma (2-3 year program)
- Bachelor's degree
- Master's degree
- Doctorate degree

10. Which of the following other industry certifications do you hold? (Select all that apply)

- None
- A.P.P. (Accredited Purchasing Practitioner)
- CCCA (Certified Construction Contract Administrator)
- CCCM (Certified Commercial Contracts Manager)
- CCPR (Certified Construction Product Representative)
- CCS (Certified Construction Specifier)
- CDT (Construction Documents Technologist)
- CFCM (Certified Federal Contracts Manager)
- CFI (Certified Fraud Investigator)
- CFPIM (Certified Fellow in Production and Inventory Management)
- CIRM (Certified in Integrated Resource Management)
- CPCM (Certified Professional Contracts Manager)
- CPCP (Certified Purchasing Card Professional)
- CPIM (Certified in Production and Inventory Management)
- CPM (Certified Public Manager)
- C.P.M. (Certified Purchasing Manager)
- CPSM (Certified Professional Supply Manager)
- CSCP (Certified Supply Chain Professional)
- CSM (Certified Supply Manager)
- PMP (Project Management Professional)
- SCMP (Supply Chain Management Professional)
- State/local procurement certification
- Other, please specify \_\_\_\_\_

11. What professional organizations do you belong to? (Select all that apply)

- None
- Association for Operations Management (APICS)
- California Association of Public Procurement Officials (CAPPO)

Florida Association of Public Procurement Officers (FAPPO)  
Institute for Supply Management (ISM)  
National Association of Educational Procurement (NAEP)  
National Association of State Procurement Officials (NASPO)  
National Contract Management Association (NCMA)  
NIGP: The Institute for Public Procurement  
National Procurement Institute (NPI)  
Public Risk Manager's Association (PRIMA)  
Purchasing Management Association of Canada (PMAC)  
State/Regional Procurement Association  
Other, please specify \_\_\_\_\_

(End of Page 6)

12. What is your current annual salary range in U.S. dollars?

Unpaid/Internship\_  Less than \$20,000\_  \$20,000 to \$29,999\_  \$30,000 to \$39,999  
 \$40,000 to \$49,999\_  \$50,000 to \$59,999\_  \$60,000 to \$69,999\_  \$70,000 to \$79,999  
 \$80,000 to \$89,999\_  \$90,000 to \$99,999\_  \$100,000 to \$124,999\_  \$125,000 to  
 \$149,999\_  \$150,000 to \$174,999\_  Over \$175,000

13. What is your age?

Under 25\_  25 to 35\_  36 to 45\_  46 to 55\_  56 to 65\_  66 or older

14. What is your gender?

Female  
 Male

\*15. Where do you currently work?

U.S./Canada >>>> Skip to Page 9: 15a. In what U.S. state / territory or  
Canadian province / territory do you work?  
 Outside of the U.S./Canada

(End of Page 7)

15a. In what country do you currently work?

Afghanistan\_  Åland Islands\_  Albania\_  Algeria\_  American Samoa\_  Andorra\_  Angola  
 Anguilla\_  Antigua and Barbuda\_  Argentina\_  Armenia\_  Aruba\_  Australia\_  Austria  
 Azerbaijan\_  Bahamas\_  Bahrain\_  Bangladesh\_  Barbados\_  Belarus\_  Belgium\_  Belize  
 Benin\_  Bermuda\_  Bhutan\_  Bolivia\_  Bosnia and Herzegovina\_  Botswana\_  Brazil  
 British Virgin Islands\_  Brunei Darussalam\_  Bulgaria\_  Burkina Faso\_  Burundi  
 Cambodia\_  Cameroon\_  Cape Verde\_  Cayman Islands\_  Central African Republic  
 Chad\_  Channel Islands\_  Chile\_  China\_  Colombia\_  Comoros\_  Congo\_  Cook Islands  
 Costa Rica\_  Cote d'Ivoire\_  Croatia\_  Cuba\_  Cyprus\_  Czech Republic  
 Democratic People's Republic of Korea\_  Democratic Republic of the Congo  
 Denmark\_  Djibouti\_  Dominica\_  Dominican Republic\_  Ecuador\_  Egypt\_  El Salvador  
 Equatorial Guinea\_  Eritrea\_  Estonia\_  Ethiopia\_  Faeroe Islands\_  Falkland Islands  
(Malvinas)\_  Fiji\_  Finland\_  France\_  French Guiana\_  French Polynesia\_  Gabon\_  Gambia  
 Georgia\_  Germany\_  Ghana\_  Gibraltar\_  Greece\_  Greenland\_  Grenada\_  Guadeloupe

\_ Guam\_ Guatemala\_ Guernsey\_ Guinea\_ Guinea-Bissau\_ Guyana\_ Haiti\_ Holy See  
 \_ Honduras\_ Hong Kong\_ Hungary\_ Iceland\_ India\_ Indonesia\_ Iran (Islamic Republic  
 of)\_ Iraq\_ Ireland\_ Isle of Man\_ Israel\_ Italy\_ Jamaica\_ Japan\_ Jersey\_ Jordan\_  
 Kazakhstan\_ Kenya\_ Kiribati\_ Kuwait\_ Kyrgyzstan\_ Lao People's Democratic  
 Republic\_ Latvia\_ Lebanon\_ Lesotho\_ Liberia\_ Libyan Arab Jamahiriya\_ Liechtenstein  
 \_ Lithuania\_ Luxembourg\_ Macao Special Administrative Region of China\_ Madagascar  
 \_ Malawi\_ Malaysia\_ Maldives\_ Mali\_ Malta\_ Marshall Islands\_ Martinique\_  
 Mauritania\_ Mauritius\_ Mayotte\_ Mexico\_ Micronesia (Federated Statesof)\_ Monaco  
 \_ Mongolia\_ Montenegro\_ Montserrat\_ Morocco\_ Mozambique\_ Myanmar\_ Namibia  
 \_ Nauru\_ Nepal\_ Netherlands\_ Netherlands Antilles\_ New Caledonia\_ New Zealand  
 \_ Nicaragua\_ Niger\_ Nigeria\_ Niue\_ Norfolk Island\_ Northern Mariana Islands  
 \_ Norway\_ Occupied Palestinian Territory\_ Oman\_ Pakistan\_ Palau\_ Panama  
 \_ Papua New Guinea\_ Paraguay\_ Peru\_ Philippines\_ Pitcairn\_ Poland\_ Portugal  
 \_ Puerto Rico\_ Qatar\_ Republic of Korea\_ Republic of Moldova\_ Réunion  
 \_ Romania\_ Russian Federation\_ Rwanda\_ Saint Helena\_ Saint Kitts and Nevis  
 \_ Saint Lucia\_ Saint Martin (French part)\_ Saint Pierre and Miquelon\_ Saint Vincent and  
 the Grenadines\_ Saint-Barthélemy\_ Samoa\_ San Marino\_ Sao Tome and Principe  
 \_ Saudi Arabia\_ Senegal\_ Serbia\_ Seychelles\_ Sierra Leone\_ Singapore\_ Slovakia  
 \_ Slovenia\_ Solomon Islands\_ Somalia\_ South Africa\_ Spain\_ Sri Lanka\_ Sudan  
 \_ Suriname\_ Svalbard and Jan Mayen Islands\_ Swaziland\_ Sweden\_ Switzerland  
 \_ Syrian Arab Republic\_ Taiwan\_ Tajikistan\_ Thailand\_ Timor-Leste\_ Togo  
 \_ Tokelau\_ Tonga\_ Trinidad and Tobago\_ Tunisia\_ Turkey\_ Turkmenistan  
 \_ Turks and Caicos Islands\_ Tuvalu\_ Uganda\_ Ukraine\_ United Arab Emirates  
 \_ United Kingdom of Great Britain and Northern Ireland\_ United Republic of Tanzania  
 \_ United States Virgin Islands\_ Uruguay\_ Uzbekistan\_ Vanuatu\_ Venezuela\_ Viet Nam  
 \_ Wallis and Futuna Islands\_ Western Sahara\_ Yemen\_ Yugoslavia\_ Zambia\_ Zimbabwe  
 (End of Page 8)

15a. In what U.S. state / territory or Canadian province / territory do you work?  
 \_ Alabama\_ Alaska\_ Alberta\_ American Samoa\_ Arizona\_ Arkansas\_ British Columbia  
 \_ California\_ Colorado\_ Connecticut\_ Delaware\_ D.C.\_ Federated States of Micronesia  
 \_ Florida\_ Georgia\_ Guam\_ Hawaii\_ Idaho\_ Illinois\_ Indiana\_ Iowa\_ Kansas\_ Kentucky  
 \_ Louisiana\_ Maine\_ Manitoba\_ Marinara Islands\_ Maryland\_ Massachusetts\_ Michigan  
 \_ Midway Islands\_ Minnesota\_ Mississippi\_ Missouri\_ Montana\_ Nebraska\_ Nevada  
 \_ Newfoundland and Labrador\_ New Brunswick\_ New Hampshire\_ New Jersey  
 \_ New Mexico\_ New York\_ Northwest Territories\_ North Carolina\_ North Dakota  
 \_ Nova Scotia\_ Nunavut\_ Ohio\_ Oklahoma\_ Ontario\_ Oregon\_ Pennsylvania  
 \_ Prince Edward Island\_ Puerto Rico\_ Quebec\_ Rhode Island\_ Saskatchewan  
 \_ South Carolina\_ South Dakota\_ Tennessee\_ Texas\_ U.S. Virgin Islands  
 \_ Utah\_ Vermont\_ Virginia\_ Washington\_ West Virginia\_ Wisconsin\_ Wyoming  
 (End of Page 9)

## SECTION 2: TASKS

The purpose of this section is to rate:

--the importance of the tasks for someone in your current role



--whether you perform or manage the task.

We are interested in obtaining information specific to your current role. While we understand that you may have experiences from previous positions, we ask that you keep your current job role in mind while answering the rating scales.

On the following pages you will see task statements that have been categorized into the six domains listed below. You will have an opportunity to provide comments when you believe statements are missing but please note that some topics may have been categorized in a different domain.

#### DOMAINS COVERED

1. Procurement Administration (13 Task Statements)
2. Sourcing (29 Task Statements)
3. Negotiation Process (4 Task Statements)
4. Contract Administration (8 Task Statements)
5. Supply Management (9 Task Statements)
6. Strategic Procurement Planning (12 Task Statements)

The rating scales you will use are:

Importance: How important is performance of the task in your current role?

Performance: Indicate whether you perform or manage the task in your current role.

0 = Of no importance 0 = I neither perform nor manage the task

1 = Of little importance 1 = I perform the task

2 = Of moderate importance 2 = I manage the task

3 = Important 3 = I both perform and manage the task

4 = Very important

(End of Page 10)

#### DOMAIN 1: PROCUREMENT ADMINISTRATION (13 Task Statements)

Importance: How important is performance of the task in your current role?

Performance: Indicate whether you perform or manage the task in your current role.

0 = Of no importance 0 = I neither perform nor manage the task

1 = Of little importance 1 = I perform the task

2 = Of moderate importance 2 = I manage the task

3 = Important 3 = I both perform and manage the task

4 = Very important

Importance

0 1 2 3 4

1. Design and maintain operational forms and templates (e.g., checklists, requisitions, solicitation boilerplate)

2. Implement an automated procurement system (e.g., integrate business processes, interfaces)

3. Administer a procurement card program (e.g., training, promoting, auditing, policies and procedures for use, implementation)
4. Administer an eprocurement (conducting all or some procurement functions over the internet) program (e.g., training, promoting, auditing, policies and procedures for use, implementation)
5. Implement a standardization process (e.g., materials, procedures, specifications)
6. Implement operating work policies, guidelines, and procedures for the control of the department's work flow (e.g., training manuals, Code of Ethics, Standard Operating Procedures [SOP], process improvement)
7. Interpret policies and procedures (e.g., apply policy situationally, respond to questions about policies and regulations)
8. Establish cooperative procurement programs with other public agencies/private organizations
9. Implement a sustainable procurement program (e.g., buy-recycled programs, green initiatives)
10. Audit the procurement process (e.g., ratification process, confirming orders, identifying illegal purchases, unauthorized commitment)
11. Prepare departmental operating budget
12. Manage purchasing department personnel (e.g., evaluate, counsel, discipline, coach)
13. Train purchasing department personnel

#### Performance

0 1 2 3

1. Design and maintain operational forms and templates (e.g., checklists, requisitions, solicitation boilerplate)
2. Implement an automated procurement system (e.g., integrate business processes, interfaces)
3. Administer a procurement card program (e.g., training, promoting, auditing, policies and procedures for use, implementation)
4. Administer an eprocurement (conducting all or some procurement functions over the internet) program (e.g., training, promoting, auditing, policies and procedures for use,

implementation)

5. Implement a standardization process (e.g., materials, procedures, specifications)
6. Implement operating work policies, guidelines, and procedures for the control of the department's work flow (e.g., training manuals, Code of Ethics, Standard Operating Procedures [SOP], process improvement)
7. Interpret policies and procedures (e.g., apply policy situationally, respond to questions about policies and regulations)
8. Establish cooperative procurement programs with other public agencies/private organizations
9. Implement a sustainable procurement program (e.g., buy-recycled programs, green initiatives)
10. Audit the procurement process (e.g., ratification process, confirming orders, identifying illegal purchases, unauthorized commitment)
11. Prepare departmental operating budget
12. Manage purchasing department personnel (e.g., evaluate, counsel, discipline, coach)
13. Train purchasing department personnel

How well do the task statements in Domain 1 cover important aspects of Procurement Administration?

\_ Very Poorly \_ Poorly \_ Adequately \_ Well \_ Very Well

What important tasks, if any, are not covered?

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(End of Page 11)

## DOMAIN 2: SOURCING (29 Task Statements)

Importance: How important is performance of the task in your current role?

Performance: Indicate whether you perform or manage the task in your current role.

0 = Of no importance 0 = I neither perform nor manage the task

1 = Of little importance 1 = I perform the task

2 = Of moderate importance 2 = I manage the task

3 = Important 3 = I both perform and manage the task

4 = Very important

## Importance

0 1 2 3 4

1. Utilize an internal automated procurement system
2. Utilize an eprocurement system
3. Ensure compliance with supplier diversity policy (e.g., minority, women, small business, socio-economic, disadvantaged)
4. Ensure compliance with sustainable procurement programs (e.g., buy-recycled programs, green initiatives)
5. Review procurement requests for compliance with established laws, policies, and procedures (e.g., bid thresholds, small business programs, completeness of specifications, available funds, appropriate approvals)
6. Conduct market research to ascertain the use/availability of commercial items and services
7. Make recommendations to requester regarding make, lease or buy decisions
8. Obtain historical information for decision making (e.g., forecast estimated demand, sourcing, procurement method)
9. Analyze economic conditions affecting specific procurements
10. Identify sources of services or supplies
11. Select method of procurement (e.g., small purchases, procurement card, competitive sealed bids, competitive proposals, cooperative purchasing)
12. Develop solicitation document (e.g., product specifications/scope of services, terms/conditions, performance period)
13. Review solicitation document (e.g., consistent language, no conflicting requirements)
14. Select contract type (e.g., blanket order, term contracts)

## Performance

0 1 2 3

1. Utilize an internal automated procurement system
2. Utilize an eprocurement system

3. Ensure compliance with supplier diversity policy (e.g., minority, women, small business, socio-economic, disadvantaged)
4. Ensure compliance with sustainable procurement programs (e.g., buy-recycled programs, green initiatives)
5. Review procurement requests for compliance with established laws, policies, and procedures (e.g., bid thresholds, small business programs, completeness of specifications, available funds, appropriate approvals)
6. Conduct market research to ascertain the use/availability of commercial items and services
7. Make recommendations to requester regarding make, lease or buy decisions
8. Obtain historical information for decision making (e.g., forecast estimated demand, sourcing, procurement method)
9. Analyze economic conditions affecting specific procurements
10. Identify sources of services or supplies
11. Select method of procurement (e.g., small purchases, procurement card, competitive sealed bids, competitive proposals, cooperative purchasing)
12. Develop solicitation document (e.g., product specifications/scope of services, terms/conditions, performance period)
13. Review solicitation document (e.g., consistent language, no conflicting requirements)
14. Select contract type (e.g., blanket order, term contracts)

Importance: How important is performance of the task in your current role?

Performance: Indicate whether you perform or manage the task in your current role.

0 = Of no importance 0 = I neither perform nor manage the task

1 = Of little importance 1 = I perform the task

2 = Of moderate importance 2 = I manage the task

3 = Important 3 = I both perform and manage the task

4 = Very important

## Importance

0 1 2 3 4

15. Solicit competitive quotes
16. Solicit competitive sealed bids/tenders
17. Solicit competitive sealed proposals
18. Ensure a transparent solicitation process that provides for open and fair competition
19. Identify evaluation methodology/criteria and select team
20. Conduct pre-bid or pre-proposal conferences
21. Prepare and issue addenda
22. Analyze and evaluate solicitation responses (e.g., responsiveness, responsibility)
23. Prepare and make recommendation for award
24. Respond to protests and inquiries (e.g., procedure, process, hearings)
25. Select payment methods and options
26. Review supplier samples or demonstrations with the buying organization management or customer departments
27. Prepare and execute contractual documents (e.g., contract, award letter, acceptance agreement, purchase order)
28. Conduct postaward respondent debriefing
29. Mitigate risk through development of terms and conditions

## Performance

0 1 2 3

15. Solicit competitive quotes
16. Solicit competitive sealed bids/tenders
17. Solicit competitive sealed proposals
18. Ensure a transparent solicitation process that provides for open and fair competition

19. Identify evaluation methodology/criteria and select team
20. Conduct pre-bid or pre-proposal conferences
21. Prepare and issue addenda
22. Analyze and evaluate solicitation responses (e.g., responsiveness, responsibility)
23. Prepare and make recommendation for award
24. Respond to protests and inquiries (e.g., procedure, process, hearings)
25. Select payment methods and options
26. Review supplier samples or demonstrations with the buying organization management or customer departments
27. Prepare and execute contractual documents (e.g., contract, award letter, acceptance agreement, purchase order)
28. Conduct post award respondent debriefing
29. Mitigate risk through development of terms and conditions

How well do the task statements in Domain 2 cover important aspects of Sourcing?

\_Very Poorly \_Poorly \_Adequately \_Well \_Very Well

What important tasks, if any, are not covered?

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(End of Page 12)

### DOMAIN 3: NEGOTIATION PROCESS (4 Task Statements)

Importance: How important is performance of the task in your current role?

Performance: Indicate whether you perform or manage the task in your current role.

0 = Of no importance 0 = I neither perform nor manage the task

1 = Of little importance 1 = I perform the task

2 = Of moderate importance 2 = I manage the task

3 = Important 3 = I both perform and manage the task

4 = Very important

Importance

0 1 2 3 4

1. Select negotiation team members and assign roles
2. Prepare negotiations strategies (e.g., goals, outcomes, tactics, positions)
3. Conduct negotiations (e.g., pricing, terms, renewals)
4. Document negotiation process and results

Performance

0 1 2 3

1. Select negotiation team members and assign roles
2. Prepare negotiations strategies (e.g., goals, outcomes, tactics, positions)
3. Conduct negotiations (e.g., pricing, terms, renewals)
4. Document negotiation process and results

How well do the task statements in Domain 3 cover important aspects of Negotiation Process?

\_ Very Poorly \_ Poorly \_ Adequately \_ Well \_ Very Well

What important tasks, if any, are not covered?

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(End of Page 13)

**DOMAIN 4: CONTRACT ADMINISTRATION (8 Task Statements)**

Importance: How important is performance of the task in your current role?

Performance: Indicate whether you perform or manage the task in your current role.

0 = Of no importance 0 = I neither perform nor manage the task

1 = Of little importance 1 = I perform the task

2 = Of moderate importance 2 = I manage the task

3 = Important 3 = I both perform and manage the task

4 = Very important



### Importance

0 1 2 3 4

1. Conduct a postaward start-up conference
2. Evaluate contractor/supplier performance (e.g., quality control)
3. Monitor contractor/supplier compliance (e.g., insurance requirements, licensing requirements, prevailing wage)
4. Modify contracts
5. Remediate contractor/supplier non-compliance (e.g., cure notice, show cause notice)
6. Resolve contract disputes
7. Terminate contracts (e.g., default, convenience, nonappropriations)
8. Conduct contract closeout activities

### Performance

0 1 2 3

1. Conduct a postaward start-up conference
2. Evaluate contractor/supplier performance (e.g., quality control)
3. Monitor contractor/supplier compliance (e.g., insurance requirements, licensing requirements, prevailing wage)
4. Modify contracts
5. Remediate contractor/supplier non-compliance (e.g., cure notice, show cause notice)
6. Resolve contract disputes
7. Terminate contracts (e.g., default, convenience, nonappropriations)
8. Conduct contract closeout activities

How well do the task statements in Domain 4 cover important aspects of Contract Administration?

\_ Very Poorly \_ Poorly \_ Adequately \_ Well \_ Very Well

What important tasks, if any, are not covered?

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(End of Page 14)

## DOMAIN 5: SUPPLY MANAGEMENT (9 Task Statements)

Importance: How important is performance of the task in your current role?

Performance: Indicate whether you perform or manage the task in your current role.

0 = Of no importance 0 = I neither perform nor manage the task

1 = Of little importance 1 = I perform the task

2 = Of moderate importance 2 = I manage the task

3 = Important 3 = I both perform and manage the task

4 = Very important

Importance

0 1 2 3 4

1. Follow-up and expedite orders
2. Resolve delivery and receiving problems
3. Maintain inventory (e.g., safety stock, stocking levels)
4. Design internal distribution channels
5. Account for assets (e.g., fixed, capital, consumable)
6. Establish warehouse shipping and receiving processes (e.g., acceptance, rejection)
7. Select method of disposal for obsolete and surplus equipment and materials
8. Dispose of obsolete and surplus equipment and materials
9. Facilitate movement of goods (e.g., transportation logistics, delivery locations)

Performance

0 1 2 3

1. Follow-up and expedite orders
2. Resolve delivery and receiving problems
3. Maintain inventory (e.g., safety stock, stocking levels)

4. Design internal distribution channels
5. Account for assets (e.g., fixed, capital, consumable)
6. Establish warehouse shipping and receiving processes (e.g., acceptance, rejection)
7. Select method of disposal for obsolete and surplus equipment and materials
8. Dispose of obsolete and surplus equipment and materials
9. Facilitate movement of goods (e.g., transportation logistics, delivery locations)

How well do the task statements in Domain 5 cover important aspects of Supply Management?

\_ Very Poorly \_ Poorly \_ Adequately \_ Well \_ Very Well

What important tasks, if any, are not covered?

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(End of Page 15)

## DOMAIN 6: STRATEGIC PROCUREMENT PLANNING (12 Task Statements)

Importance: How important is performance of the task in your current role?

Performance: Indicate whether you perform or manage the task in your current role.

0 = Of no importance 0 = I neither perform nor manage the task

1 = Of little importance 1 = I perform the task

2 = Of moderate importance 2 = I manage the task

3 = Important 3 = I both perform and manage the task

4 = Very important

Importance

0 1 2 3 4

1. Establish the mission statement, vision, and operating values of the procurement department
2. Uphold and promote the mission, vision, and values of the procurement department (e.g., ethics, diversity, professionalism, accountability)

- 3 Conduct value analysis (e.g., cost reduction, cost avoidance, total cost of ownership)
4. Implement goals, objectives, and measurement criteria for procurement department
5. Monitor professional and legislative trends and laws (e.g., rules, regulations, executive orders)
6. Conduct business analyses (e.g., outsourcing, privatization, partnering)
7. Analyze economic trends and conditions that affect procurement
8. Conduct cost/benefit analyses on future acquisitions
9. Implement a process improvement plan (e.g., stakeholder satisfaction, remediation)
10. Plan and implement procurement strategies and objectives based on forecast data, market factors, economic trends, and customer needs (e.g., strategic sourcing, staffing)
11. Formulate a procurement contingency/continuity of operations plan (e.g., disaster preparedness, supply chain)
12. Develop staff succession plan

#### Performance

0 1 2 3

1. Establish the mission statement, vision, and operating values of the procurement department
2. Uphold and promote the mission, vision, and values of the procurement department (e.g., ethics, diversity, professionalism, accountability)
- 3 Conduct value analysis (e.g., cost reduction, cost avoidance, total cost of ownership)
4. Implement goals, objectives, and measurement criteria for procurement department
5. Monitor professional and legislative trends and laws (e.g., rules, regulations, executive orders)
6. Conduct business analyses (e.g., outsourcing, privatization, partnering)
7. Analyze economic trends and conditions that affect procurement
8. Conduct cost/benefit analyses on future acquisitions
9. Implement a process improvement plan (e.g., stakeholder satisfaction, remediation)

10. Plan and implement procurement strategies and objectives based on forecast data, market factors, economic trends, and customer needs (e.g., strategic sourcing, staffing)

11. Formulate a procurement contingency/continuity of operations plan (e.g., disaster preparedness, supply chain)

12. Develop staff succession plan

How well do the task statements in Domain 6 cover important aspects of Strategic Procurement Planning?

\_ Very Poorly \_ Poorly \_ Adequately \_ Well \_ Very Well

What important tasks, if any, are not covered?

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(End of Page 16)

### SECTION 3: KNOWLEDGE

The purpose of this section is to rate:

--the importance of the knowledge for a public procurement professional

--the level of knowledge required for a professional in your current role

We are interested in obtaining information specific to your current role. While we understand that you may have experiences from previous positions, we ask that you keep your current job role in mind while answering the skill level rating scale.

DOMAINS COVERED

1. Procurement Administration (23 Knowledge Statements)

2. Sourcing (39 Knowledge Statements)

3. Negotiation Process (3 Knowledge Statements)

4. Contract Administration (9 Knowledge Statements)

5. Supply Management (5 Knowledge Statements)

6. Strategic Procurement Planning (8 Knowledge Statements)

The rating scales you will use are:

Importance: How important is the knowledge for a public procurement professional?

Skill Level: At what level does a professional in your role need to demonstrate the knowledge?

0 = Of no importance 0 = Unnecessary--not required

1 = Of little importance 1 = Basic--capable of performing basic work and is usually subject to review for adequacy by an individual at a higher level

2 = Of moderate importance 2 = Intermediate--perform effective, independent work with little or no supervision

3 = Important 3 = Expert--able to apply the knowledge to complex problems, to integrate information, and to create, synthesize and evaluate solutions  
4 = Very important  
(End of Page 17)

## DOMAIN 1: PROCUREMENT ADMINISTRATION (23 Knowledge Statements)

Importance: How important is the knowledge for a public procurement professional?

Skill level: At what level does a professional in your role need to demonstrate the knowledge?

0 = Of no importance 0 = Unnecessary--not required  
1 = Of little importance 1 = Basic--capable of performing basic work and is usually subject to review for adequacy by an individual at a higher level  
2 = Of moderate importance 2 = Intermediate--perform effective, independent work with little or no supervision  
3 = Important 3 = Expert--able to apply the knowledge to complex problems, to integrate information and to create, synthesize and evaluate solutions  
4 = Very important

Importance  
0 1 2 3 4

Knowledge of:

1. common procurement performance measurement criteria (e.g., cycle time, inventory turns, customer satisfaction, number of disputes)
2. automated procurement systems (e.g., electronic requisitioning)
3. solicitation and contract file contents
4. cooperative procurement programs
5. value analysis (e.g., cost-reduction, cost avoidance, total cost of ownership)
6. procurement audit and review processes
7. purpose for department audits and reviews
8. eprocurement programs
9. supplier diversity programs (e.g., small, disadvantaged, minority owned, women owned, socioeconomic business programs)

10. sustainable procurement initiatives

11. procurement policies and procedures

12. budgeting methods (e.g., performance based, zero based, line item)

Skill level

0 1 2 3

Knowledge of:

1. common procurement performance measurement criteria (e.g., cycle time, inventory turns, customer satisfaction, number of disputes)

2. automated procurement systems (e.g., electronic requisitioning)

3. solicitation and contract file contents

4. cooperative procurement programs

5. value analysis (e.g., cost-reduction, cost avoidance, total cost of ownership)

6. procurement audit and review processes

7. purpose for department audits and reviews

8. eprocurement programs

9. supplier diversity programs (e.g., small, disadvantaged, minorityowned, womenowned, socioeconomic business programs)

10. sustainable procurement initiatives

11. procurement policies and procedures

12. budgeting methods (e.g., performance based, zero based, line item)

Importance: How important is the knowledge for a public procurement professional?

Skill level: At what level does a professional in your role need to demonstrate the knowledge?

0 = Of no importance 0 = Unnecessary--not required

1 = Of little importance 1 = Basic--capable of performing basic work and is usually subject to review for adequacy by an individual at a higher level

2 = Of moderate importance 2 = Intermediate—perform effective, independent work with little or no supervision  
3 = Important 3 = Expert--able to apply the knowledge to complex problems, to integrate information and to create, synthesize and evaluate solutions  
4 = Very important

Importance  
0 1 2 3 4

Knowledge of:

13. impact of budget cycle (e.g., lead times, receipt of goods, payment of goods)
14. operational forms and templates (e.g., checklists, purchase orders, request for proposals boilerplate)
15. procurement card programs
16. process improvement programs (e.g., benchmarks, customer surveys)
17. standardization programs (e.g., materials, procedures, specifications)
18. procurement trends
19. procurement information resources (e.g., NIGP, Responsible Purchasing Networking)
20. professional values (e.g., ethics, guiding principles)
21. outreach methods for internal and external stakeholders (e.g., tradeshow, training, networking, social media)
22. team dynamics
23. personnel management

Skill level  
0 1 2 3

Knowledge of:

13. impact of budget cycle (e.g., lead times, receipt of goods, payment of goods)
14. operational forms and templates (e.g., checklists, purchase orders, Request for Proposals boilerplate)



15. procurement card programs
16. process improvement programs (e.g., benchmarks, customer surveys)
17. standardization programs (e.g., materials, procedures, specifications)
18. procurement trends
19. procurement information resources (e.g., NIGP, Responsible Purchasing Networking)
20. professional values (e.g., ethics, guiding principles)
21. outreach methods for internal and external stakeholders (e.g., tradeshow, training, networking, social media)
22. team dynamics
23. personnel management

How well do the knowledge statements in Domain 1 cover important aspects of Procurement Administration?

\_ Very Poorly \_ Poorly \_ Adequately \_ Well \_ Very Well

What important knowledge, if any, are not covered?

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(End of Page 18)

## DOMAIN 2: SOURCING (39 Knowledge Statements)

Importance: How important is the knowledge for a public procurement professional?

Skill level: At what level does a professional in your role need to demonstrate the knowledge?

0 = Of no importance 0 = Unnecessary--not required

1 = Of little importance 1 = Basic--capable of performing basic work and is usually subject to review for adequacy by an individual at a higher level

2 = Of moderate importance 2 = Intermediate--perform effective, independent work with little or no supervision

3 = Important 3 = Expert--able to apply the knowledge to complex problems, to integrate information and to create, synthesize and evaluate solutions

4 = Very important

Importance

0 1 2 3 4

Knowledge of:

1. product specifications, descriptions, and prices (e.g., order history)
2. scope of work for service contracts
3. benchmarking techniques and processes
4. procurement methods and techniques
5. supply and demand concepts
6. total cost of ownership concepts
7. make, lease, or buy concepts
8. market research resources
9. roles and responsibilities in the procurement process
10. special considerations for supplies (e.g., controlled goods, hazardous materials, material and inventory management, re-use and recycling)
11. requisition approval process (e.g., funds availability, appropriate authorizations)
12. laws, regulations, and ordinances
13. specification requirements (e.g., completeness, accuracy)

Skill level

0 1 2 3

Knowledge of:

1. product specifications, descriptions, and prices (e.g., order history)
2. scope of work for service contracts
3. benchmarking techniques and processes
4. procurement methods and techniques
5. supply and demand concepts
6. total cost of ownership concepts

7. make, lease, or buy concepts
8. market research resources
9. roles and responsibilities in the procurement process
10. special considerations for supplies (e.g., controlled goods, hazardous materials, material and inventory management, re-use and recycling)
11. requisition approval process (e.g., funds availability, appropriate authorizations)
12. laws, regulations, and ordinances
13. specification requirements (e.g., completeness, accuracy)

Importance: How important is the knowledge for public procurement professional?

Skill level: At what level does a professional in your role need to demonstrate the knowledge?

0 = Of no importance 0 = Unnecessary--not required

1 = Of little importance 1 = Basic--capable of performing basic work and is usually subject to review for adequacy by an individual at a higher level

2 = Of moderate importance 2 = Intermediate—perform effective, independent work with

little or no supervision

3 = Important 3 = Expert--able to apply the knowledge to complex problems, to integrate information and to create, synthesize and evaluate solutions

4 = Very important

Importance

0 1 2 3 4

Knowledge of:

14. specification types (e.g., design, performance)

15. contract types (e.g., blanket order, term contracts, incentive)

16. contract terms and conditions

17. small dollar purchases (e.g., telephone quotes, fax quotes, email, procurement cards)

18. competitive sealed bids and proposals

19. competitive negotiations
20. supplier preference programs (e.g., local, small business, minority-owned, woman-owned)
21. noncompetitive procurement (e.g., sole source, single source)
22. emergency procurement
23. cooperative procurement (e.g., joint solicitation, piggyback)
24. professional services procurement
25. construction procurement
26. presolicitation conferences

Skill level

0 1 2 3

Knowledge of:

14. specification types (e.g., design, performance)
15. contract types (e.g., blanket order, term contracts, incentive)
16. contract terms and conditions
17. small dollar purchases (e.g., telephone quotes, fax quotes, email, procurement cards)
18. competitive sealed bids and proposals
19. competitive negotiations
20. supplier preference programs (e.g., local, small business, minority-owned, woman-owned)
21. noncompetitive procurement (e.g., sole source, single source)
22. emergency procurement
23. cooperative procurement (e.g., joint solicitation, piggyback)
24. professional services procurement
25. construction procurement

## 26. presolicitation conferences

Importance: How important is the knowledge for a public procurement professional?

Skill level: At what level does a professional in your role need to demonstrate the knowledge?

0 = Of no importance 0 = Unnecessary--not required

1 = Of little importance 1 = Basic--capable of performing basic work and is usually subject to review for adequacy by an individual at a higher level

2 = Of moderate importance 2 = Intermediate--perform effective, independent work with little to no supervision

3 = Important 3 = Expert--able to apply the knowledge to complex problems, to integrate information and to create, synthesize and evaluate solutions

4 = Very important

Importance

0 1 2 3 4

Knowledge of:

27. solicitation process (e.g., issuing solicitation, addenda, solicitation openings)

28. offer evaluation (e.g., responsiveness, responsibility, price analysis, cost analysis)

29. sources of services or supplies

30. methods of payment

31. payment types (e.g., progress, advance, retainage, incentive)

32. fair and open competition concepts

33. protest processes and procedures

34. hearing processes and procedures

35. debrief processes and procedures

36. supplier requirements (e.g., space, delivery, industry standards)

37. contract document preparation

38. award recommendation process

39. contract approval process (e.g., legal, risk management, health and safety)

Skill level

0 1 2 3

Knowledge of:

27. solicitation process (e.g., issuing solicitation, addenda, solicitation openings)

28. offer evaluation (e.g., responsiveness, responsibility, price analysis, cost analysis)

29. sources of services or supplies

30. methods of payment

31. payment types (e.g., progress, advance, retainage, incentive)

32. fair and open competition concepts

33. protest processes and procedures

34. hearing processes and procedures

35. debrief processes and procedures

36. supplier requirements (e.g., space, delivery, industry standards)

37. contract document preparation

38. award recommendation process

39. contract approval process (e.g., legal, risk management, health and safety)

How well do the knowledge statements in Domain 2 cover important aspects of Sourcing?

\_ Very Poorly \_ Poorly \_ Adequately \_ Well \_ Very Well

What important knowledge, if any, are not covered?

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(End of Page 19)

### DOMAIN 3: NEGOTIATION PROCESS (3 Knowledge Statements)

Importance: How important is the knowledge for a public procurement professional?

Skill level: At what level does a professional in your role need to demonstrate the

knowledge?

0 = Of no importance 0 = Unnecessary--not required

1 = Of little importance 1 = Basic--capable of performing basic work and is usually subject to review for adequacy by an individual at a higher level

2 = Of moderate importance 2 = Intermediate--perform effective, independent work with little or no supervision

3 = Important 3 = Expert--able to apply the knowledge to complex problems, to integrate information and to create, synthesize and evaluate solutions

4 = Very important

Importance

0 1 2 3 4

Knowledge of:

1. negotiation strategies and techniques (e.g., conflict resolution)

2. problemsolving and decisionmaking techniques and processes

3. negotiation process and documentation requirements

Skill level

0 1 2 3

Knowledge of:

1. negotiation strategies and techniques (e.g., conflict resolution)

2. problemsolving and decisionmaking techniques and processes

3. negotiation process and documentation requirements

How well do the knowledge statements in Domain 3 cover important aspects of Negotiation Process?

\_ Very Poorly \_ Poorly \_ Adequately \_ Well \_ Very Well

What important knowledge, if any, are not covered?

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(End of Page 20)

#### DOMAIN 4: CONTRACT ADMINISTRATION (9 Knowledge Statements)

Importance: How important is the knowledge for a public procurement professional?

Skill level: At what level does a professional in your role need to demonstrate the

knowledge?

0 = Of no importance 0 = Unnecessary--not required

1 = Of little importance 1 = Basic--capable of performing basic work and is usually subject to review for adequacy by an individual at a higher level

2 = Of moderate importance 2 = Intermediate--perform effective, independent work with little or no supervision

3 = Important 3 = Expert--able to apply the knowledge to complex problems, to integrate information and to create, synthesize and evaluate solutions

4 = Very important

Importance

0 1 2 3 4

Knowledge of:

1. techniques to ensure supplier compliance to specifications (e.g., receipt inspection, site visits, item sampling)

2. techniques to evaluate supplier performance

3. elements of a contract

4. contract management (e.g., performance, ongoing risk)

5. contract performance deficiencies, disputes, and resolutions (e.g., notice to cure, liquidated damages)

6. contract modifications (e.g., change orders, amendments, escalation)

7. contract termination (e.g., default, convenience, nonappropriation)

8. contract renewal process

9. contract close-out (e.g., substantial completion, service transition, lien waivers)

Skill level

0 1 2 3

Knowledge of:

1. techniques to ensure supplier compliance to specifications (e.g., receipt inspection, site visits, item sampling)

2. techniques to evaluate supplier performance

3. elements of a contract



4. contract management (e.g., performance, ongoing risk)
5. contract performance deficiencies, disputes, and resolutions (e.g., notice to cure, liquidated damages)
6. contract modifications (e.g., change orders, amendments, escalation)
7. contract termination (e.g., default, convenience, nonappropriation)
8. contract renewal process
9. contract close-out (e.g., substantial completion, service transition, lien waivers)

How well do the knowledge statements in Domain 4 cover important aspects of Contract Administration?

\_ Very Poorly \_ Poorly \_ Adequately \_ Well \_ Very Well

What important knowledge, if any, are not covered?

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(End of Page 21)

## DOMAIN 5: SUPPLY MANAGEMENT (5 Knowledge Statements)

Importance: How important is the knowledge for a public procurement professional?

Skill level: At what level does a professional in your role need to demonstrate the knowledge?

0 = Of no importance 0 = Unnecessary--not required

1 = Of little importance 1 = Basic--capable of performing basic work and is usually subject to review for adequacy by an individual at a higher level

2 = Of moderate importance 2 = Intermediate—perform effective, independent work with little or no supervision

3 = Important 3 = Expert--able to apply the knowledge to complex problems, to integrate

information and to create, synthesize and evaluate solutions

4 = Very important

Importance

0 1 2 3 4

Knowledge of:

1. ordering process (e.g., route, expedite, follow-up)

2. inventory management techniques and principles (e.g., Just In

Time [JIT], min/max levels, Last In First Out [LIFO], First In First Out [FIFO])

3. disposition of obsolete and surplus equipment and materials

4. asset management

5. supply chain management

Skill level

0 1 2 3

Knowledge of:

1. ordering process (e.g., route, expedite, follow-up)

2. inventory management techniques and principles (e.g., Just In Time [JIT], min/max levels, Last In First Out [LIFO], First In First Out [FIFO])

3. disposition of obsolete and surplus equipment and materials

4. asset management

5. supply chain management

How well do the knowledge statements in Domain 5 cover important aspects of Supply Management?

\_ Very Poorly \_ Poorly \_ Adequately \_ Well \_ Very Well

What important knowledge, if any, are not covered?

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(End of Page 22)

## DOMAIN 6: STRATEGIC PROCUREMENT PLANNING (8 Knowledge Statements)

Importance: How important is the knowledge for a public procurement professional?

Skill level: At what level does a professional in your role need to demonstrate the knowledge?

0 = Of no importance 0 = Unnecessary--not required

1 = Of little importance 1 = Basic--capable of performing basic work and is usually subject to review for adequacy by an individual at a higher level

2 = Of moderate importance 2 = Intermediate--perform effective, independent work

with little or no supervision

3 = Important 3 = Expert--able to apply the knowledge to complex problems, to integrate information and to create, synthesize and evaluate solutions

4 = Very important

Importance

0 1 2 3 4

Knowledge of:

1. analytical techniques (e.g., Pareto analysis)
2. research techniques
3. forecasting techniques and strategies
4. procurement strategies based on forecast data, market factors, and economic trends
5. strategic planning
6. cost/benefit analyses on future acquisitions
7. contingency/continuity of operations planning (e.g., disaster preparedness)
8. succession planning

Skill level

0 1 2 3

Knowledge of:

1. analytical techniques (e.g., Pareto analysis)
2. research techniques
3. forecasting techniques and strategies
4. procurement strategies based on forecast data, market factors, and economic trends
5. strategic planning
6. cost/benefit analyses on future acquisitions
7. contingency/continuity of operations planning (e.g., disaster preparedness)
8. succession planning

How well do the knowledge statements in Domain 6 cover important aspects of

### Strategic Procurement Planning?

\_ Very Poorly \_ Poorly \_ Adequately \_ Well \_ Very Well

What important knowledge, if any, are not covered?

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(End of Page 23)

## SECTION 4: RECOMMENDATION FOR TEST CONTENT

Listed below are the six domains that may be covered on a CPPB or CPPO exam. What percentage should be assigned to each domain if the total score equaled 100? Please use only whole numbers (such as: 12, 20, 33, 35). If you think an area should not be represented, type 0 in the space provided. The total of all domains must equal 100%.

1. Procurement Administration \_\_\_\_\_
2. Sourcing \_\_\_\_\_
3. Negotiation Process \_\_\_\_\_
4. Contract Administration \_\_\_\_\_
5. Supply Management \_\_\_\_\_
6. Strategic Procurement Planning \_\_\_\_\_

(End of Page 24)

## SECTION 5: COMMENTS

The following question is open-ended and contains a text box for you to enter your comments. Comments are optional.

1. What additional professional development or continuing education could you use to improve your performance in your current work role?

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2. How do you expect your work role to change over the next few years? What tasks will be performed and what knowledge will be needed to meet changing job demands?

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(End of Page 25)

## SECTION 6: INDUSTRY INFORMATION

This short industry information section represents questions submitted by the National Council for Public Procurement and Contracting (NCPPC) for the UPPCC Job Analysis Survey. The NCPPC is a federation of seven public procurement organizations (California Association of Public Procurement

Officials, Florida Association of Public Procurement Officers, National Association of Educational Procurement, National Association of State Procurement Officials, National Contract Management Association and National Procurement Institute) committed to the development of partnerships and programs that benefit the respective association members while influencing and promoting the value and recognition of the profession. The information that you provide in this section is completely confidential and will be used for research purposes only. Please answer the following questions by selecting the response that most closely describes you or your professional activities.

1. Are there procurement positions within your organization that require certification at the time of hire?

Yes No

Administrative Support

Assistant Director/Unit Supervisor

Consultant

Contract Administrator/Contract Management

Director/Manager of Procurement

Entry Level Buyer/Contract Specialist

Executive/Senior Administrator/Chief Procurement Officer

Finance/Accounting Administrator

Intermediate Level Buyer/Contract Specialist

Intern/Student

Legal Administrator/Counsel

Procurement Compliance Officer/Auditor

Program Manager

Program Supervisor

Risk Management Administrator

Senior Level Buyer/Contract Specialist

Warehouse/Stores/Inventory Manager

Warehouse/Stores/Inventory Support

Not currently employed/Retired

1a. If yes, identify the position titles and salary ranges for these positions in U.S. dollars.

Less than \$40,000

\$40,001-\$55,000

\$55,001-\$70,000

\$70,001-\$85,000

\$85,001-\$100,000

More than \$100,000

Administrative Support

Assistant Director/Unit Supervisor

Consultant

Contract Administrator/Contract Management

Director/Manager of Procurement

Entry Level Buyer/Contract Specialist  
Executive/Senior Administrator/Chief Procurement Officer  
Finance/Accounting Administrator  
Intermediate Level Buyer/Contract Specialist  
Intern/Student  
Legal Administrator/Counsel  
Procurement Compliance Officer/Auditor  
Program Manager  
Program Supervisor  
Risk Management Administrator  
Senior Level Buyer/Contract Specialist  
Warehouse/Stores/Inventory Manager  
Warehouse/Stores/Inventory Support  
Not currently employed/Retired

1b. If yes, identify the specific certifications required for these positions. (Select all that apply)

C.P.M. A.P.P. CPPB CPPO CPCM State Certification  
Administrative Support  
Assistant Director/Unit Supervisor  
Consultant  
Contract Administrator/Contract Management  
Director/Manager of Procurement  
Entry Level Buyer/Contract Specialist  
Executive/Senior Administrator/Chief Procurement Officer  
Finance/Accounting Administrator  
Intermediate Level Buyer/Contract Specialist  
Intern/Student  
Legal Administrator/Counsel  
Procurement Compliance Officer/Auditor  
Program Manager  
Program Supervisor  
Risk Management Administrator  
Senior Level Buyer/Contract Specialist  
Warehouse/Stores/Inventory Manager  
Warehouse/Stores/Inventory Support  
Not currently employed/Retired

\*2. At the time of hire, does certification affect starting salary?

\_ Yes

\_ No >>>> Skip to Page 29: \*3. Is there salary consideration given once hired into a position when certification is earned?

(End of Page 26)

\*2a. If yes, identify the salary adjustment.

\_ 1% increase >>>> Skip to Page 29: \*3. Is there salary consideration given once hired into a position when certification is earned?

- \_ 2% increase >>>> Skip to Page 29: \*3. Is there salary consideration given once hired into a position when certification is earned?
- \_ 3% increase >>>> Skip to Page 29: \*3. Is there salary consideration given once hired into a position when certification is earned?
- \_ 4% increase >>>> Skip to Page 29: \*3. Is there salary consideration given once hired into a position when certification is earned?
- \_ 5% increase >>>> Skip to Page 29: \*3. Is there salary consideration given once hired into a position when certification is earned?
- \_ 6% increase >>>> Skip to Page 29: \*3. Is there salary consideration given once hired into a position when certification is earned?
- \_ 7% increase >>>> Skip to Page 29: \*3. Is there salary consideration given once hired into a position when certification is earned?
- \_ 8% increase >>>> Skip to Page 29: \*3. Is there salary consideration given once hired into a position when certification is earned?
- \_ 9% increase >>>> Skip to Page 29: \*3. Is there salary consideration given once hired into a position when certification is earned?
- \_ 10 or more% increase >>>> Skip to Page 29: \*3. Is there salary consideration given once hired into a position when certification is earned?
- \_ One time bonus  
(End of Page 27)

2b. If a one time bonus is given, what is the amount of the average bonus in U.S. dollars?

- \_ \$0 - \$100
  - \_ \$101 – \$500
  - \_ \$501 - \$1000
  - \_ \$1001 - \$5000
  - \_ \$5001 - \$10,000
  - \_ Greater than \$10,000
- (End of Page 28)

\*3. Is there salary consideration given once hired into a position when certification is earned?

- \_ Yes
- \_ No >>>> Skip to Page 32: \*4. Does your agency place equal value on all professional certifications or is there different salary adjustments based on the type of certification earned?  
(End of Page 29)

\*3a. If yes, what salary consideration is given?

- \_ 1% increase >>>> Skip to Page 32: \*4. Does your agency place equal value on all professional certifications or is there different salary adjustments based on the type of certification earned?
- \_ 2% increase >>>> Skip to Page 32: \*4. Does your agency place equal value on all professional certifications or is there different salary adjustments based on the type of certification earned?
- \_ 3% increase >>>> Skip to Page 32: \*4. Does your agency place equal value on all professional certifications or is there different salary adjustments based on the type of certification earned?
- \_ 4% increase >>>> Skip to Page 32: \*4. Does your agency place equal value on all professional certifications or is there different salary adjustments

based on the type of certification earned?

5% increase >>>> Skip to Page 32: \*4. Does your agency place equal value on all professional certifications or is there different salary adjustments based on the type of certification earned?

6% increase >>>> Skip to Page 32: \*4. Does your agency place equal value on all professional certifications or is there different salary adjustments based on the type of certification earned?

7% increase >>>> Skip to Page 32: \*4. Does your agency place equal value on all professional certifications or is there different salary adjustments based on the type of certification earned?

8% increase >>>> Skip to Page 32: \*4. Does your agency place equal value on all professional certifications or is there different salary adjustments based on the type of certification earned?

9% increase >>>> Skip to Page 32: \*4. Does your agency place equal value on all professional certifications or is there different salary adjustments based on the type of certification earned?

10 or more% increase >>>> Skip to Page 32: \*4. Does your agency place equal value on all professional certifications or is there different salary adjustments based on the type of certification earned?

One time bonus

(End of Page 30)

3b. If a one time bonus is given, what is the amount of the average bonus in U.S. dollars?

\$0 - \$100  \$101 - \$500  \$501 - \$1000  \$1001 - \$5000  \$5001 - \$10,000

Greater than \$10,000

(End of Page 31)

\*4. Does your agency place equal value on all professional certifications or is there different salary adjustments based on the type of certification earned?

Equal >>>> Skip to Page 34: 5. Are there procurement positions in your organization that require a college degree?

Different

(End of Page 32)

4a. If salary adjustments awarded by your agency differ based on the type of certification earned, please identify the salary adjustment your agency awards for each certification.

0%  1%  2%  3%  4%  5%  6%  7%  8%  9%  10 or more%  One time bonus

C.P.M.

A.P.P.

CPPB

CPPO

CPCM

State

Certification

(End of Page 33)



5. Are there procurement positions in your organization that require a college degree?

Yes No

Administrative Support

Assistant Director/Unit Supervisor

Consultant

Contract Administrator/Contract Management

Director/Manager of Procurement

Entry Level Buyer/Contract Specialist

Executive/Senior Administrator/Chief Procurement Officer

Finance/Accounting Administrator

Intermediate Level Buyer/Contract Specialist

Intern/Student

Legal Administrator/Counsel

Procurement Compliance Officer/Auditor

Program Manager

Program Supervisor

Risk Management Administrator

Senior Level Buyer/Contract Specialist

Warehouse/Stores/Inventory Manager

Warehouse/Stores/Inventory Support

Not currently employed/Retired

5a. If yes, identify these position titles and starting salary ranges in U.S. dollars.

Less than \$40,000

\$40,001-\$55,000

\$55,001-\$70,000

\$70,001-\$85,000

\$85,001-\$100,000

More than \$100,000

Administrative Support

Assistant Director/Unit Supervisor

Consultant

Contract Administrator/Contract Management

Director/Manager of Procurement

Entry Level Buyer/Contract Specialist

Executive/Senior Administrator/Chief Procurement Officer

Finance/Accounting Administrator

Intermediate Level Buyer/Contract Specialist

Intern/Student

Legal Administrator/Counsel

Procurement Compliance Officer/Auditor

Program Manager

Program Supervisor

Risk Management Administrator

Senior Level Buyer/Contract Specialist

Warehouse/Stores/Inventory Manager

Warehouse/Stores/Inventory Support  
Not currently employed/Retired

\*6. Is there salary consideration given once hired into a position when a college degree is earned, either undergraduate or graduate?

Yes

No >>>> Skip to Page 37: 7. When considering a candidate for employment within your organization, all things being equal, does certification give an applicant a hiring advantage?

(End of Page 34)

\*6a. If yes, what salary consideration is given?

1% increase >>>> Skip to Page 37: 7. When considering a candidate for employment within your organization, all things being equal, does certification give an applicant a hiring advantage?

2% increase >>>> Skip to Page 37: 7. When considering a candidate for employment within your organization, all things being equal, does certification give an applicant a hiring advantage?

3% increase >>>> Skip to Page 37: 7. When considering a candidate for employment within your organization, all things being equal, does certification give an applicant a hiring advantage?

4% increase >>>> Skip to Page 37: 7. When considering a candidate for employment within your organization, all things being equal, does certification give an applicant a hiring advantage?

5% increase >>>> Skip to Page 37: 7. When considering a candidate for employment within your organization, all things being equal, does certification give an applicant a hiring advantage?

6% increase >>>> Skip to Page 37: 7. When considering a candidate for employment within your organization, all things being equal, does certification give an applicant a hiring advantage?

7% increase >>>> Skip to Page 37: 7. When considering a candidate for employment within your organization, all things being equal, does certification give an applicant a hiring advantage?

8% increase >>>> Skip to Page 37: 7. When considering a candidate for employment within your organization, all things being equal, does certification give an applicant a hiring advantage?

9% increase >>>> Skip to Page 37: 7. When considering a candidate for employment within your organization, all things being equal, does certification give an applicant a hiring advantage?

10 or more% increase >>>> Skip to Page 37: 7. When considering a candidate for employment within your organization, all things being equal, does certification give an applicant a hiring advantage?

One time bonus

(End of Page 35)

6b. If a one time bonus is given, what is the amount of the average bonus in U.S. dollars?

\$0 - \$100  \$101 - \$500  \$501 - \$1000  \$1001 - \$5000  \$5001 - \$10,000

Greater than \$10,000  
(End of Page 36)

7. When considering a candidate for employment within your organization, all things being equal, does certification give an applicant a hiring advantage?

Yes  
 No

(End of Page 37)

#### You Are Eligible to Receive Certification/Recertification Credit and Participate in a Drawing for Completing This Survey

Because your time is valuable and your opinions are so important to us, survey participants are eligible to receive one point toward CPPO/CPPB recertification or one contact hour toward initial CPPO/CPPB certification. In addition, one participant will be selected from an optional, random drawing for an iPad.

Please note that all information you provide will be kept strictly confidential. Your name, phone number, and email will be kept separate from your survey responses and will only be utilized to document certification credit and to award the iPad. If you prefer not to participate in the drawing and do not wish to claim certification/recertification points for your participation, you do not need to provide any contact information. To be eligible, you must have completed the survey.

I would like to receive certification/recertification credit

I would like to be entered to win the iPad

Please provide your contact information

Name \_\_\_\_\_

Email Address \_\_\_\_\_

Confirm Email Address \_\_\_\_\_

(End of Survey Page 38)

## Appendix B

### Factor Analysis of Performing Job Tasks by All Practitioners

**Factor Analysis of Performing Job Tasks by All Practitioners**

	Factor					
	1	2	3	4	5	6
designmaintainopsform	.306	.094	-.225	.127	.390	.227
implementautomatedprocure	.128	.149	-.143	.127	.281	.131
administerprocurementcard	.056	.082	-.126	.184	.175	.093
administereprocurement	.155	.151	-.194	.186	.376	.173
implementstandardprocess	.264	.170	-.237	.157	.488	.297
implementoperatingworkpolicy	.200	.240	-.216	.161	.409	.243
interpretoliciesandprocedures	.440	.126	-.318	.160	.558	.415
establishcooperativeprocprogram	.196	.234	-.257	.186	.367	.285
implementsustainableprocurement	.104	.248	-.184	.245	.280	.166
auditprocurementprocess	.247	.173	-.205	.192	.479	.309
preparedepartmentbudget	-.095	.117	.035	.052	-.042	-.019
managedepartmentpersonnel	-.027	.195	-.070	.058	.062	.070
trainpurchasingpersonnel	.251	.183	-.227	.143	.440	.279
utilizeautomprocurementsystem	.405	.136	-.294	.170	<b>.616</b>	.305
utilizeaneprocurementsystem	.306	.119	-.245	.200	.513	.247
ensurecompliancediversity	.299	.192	-.269	.164	.492	.292
ensurecompliancesustainproc	.207	.261	-.252	.272	.421	.211
procurementcomplianceandlaw	.593	.115	-.362	.209	<b>.685</b>	.446
conductmarketresearch	.458	.209	-.355	.204	<b>.648</b>	.450
recommendbuydecision	.405	.234	-.326	.236	.595	.378
usehistoricalinfofordecisions	.476	.217	-.389	.237	<b>.705</b>	.448
analyzeeconomicconditions	.354	.332	-.385	.182	.575	.399
identifysourceofsupplies	.642	.109	-.377	.216	<b>.740</b>	.466
selectmethodofprocurement	.673	.044	-.348	.246	<b>.698</b>	.420
developsolicitationdocument	<b>.753</b>	.088	-.379	.213	.621	.485
reviewsolicitationdocument	<b>.757</b>	.116	-.398	.206	.626	.492
selectcontracttype	<b>.704</b>	.127	-.424	.281	.648	.497
solicitcompetitivequote	<b>.754</b>	.082	-.338	.327	.552	.466
solicitcompetitivebids	<b>.891</b>	.123	-.396	.194	.495	.530
solicitcompetitiveproposals	<b>.861</b>	.127	-.419	.167	.454	.518
ensuretransparentprocesses	<b>.840</b>	.064	-.380	.199	.558	.544
identifyevaluationmethodology	<b>.708</b>	.147	-.441	.131	.446	.511
conductprebidconferences	<b>.801</b>	.130	-.452	.145	.471	.561

prepareandissueaddenda	<b>.837</b>	.097	-.419	.166	.464	.547
analyzeevaluatesolicitations	<b>.831</b>	.117	-.448	.172	.488	.545
preparerecommendationaward	<b>.811</b>	.131	-.418	.174	.473	.552
respondprotestsandinquiries	.540	.241	-.417	.109	.440	.549
selectpaymentmethod	.437	.200	-.416	.228	.502	.471
reviewsuppliersamples	.503	.263	-.412	.291	.496	.511
preparecontracts	<b>.736</b>	.127	-.461	.202	.516	.574
conductpostawarddebrief	.532	.260	-.470	.122	.420	.571
mitigateriskthrutermsconditions	.474	.255	-.444	.089	.429	.534
selectnegotiationmembers	.231	.243	-.592	.125	.276	.362
preparenegotiationstrategy	.296	.272	<b>-.771</b>	.130	.318	.466
conductnegotiations	.410	.189	<b>-.892</b>	.164	.388	.513
documentnegotiationprocess	.425	.171	<b>-.844</b>	.198	.385	.517
conductpostawardconference	.347	.287	-.463	.149	.352	.558
evaluatesupplierperformance	.429	.259	-.428	.281	.409	.597
monitorsuppliercompliance	.484	.203	-.412	.231	.452	<b>.670</b>
modifycontracts	.550	.197	-.491	.179	.455	<b>.765</b>
remediatesuppliernoncompliance	.469	.247	-.480	.108	.395	<b>.792</b>
resolvedisputes	.443	.241	-.492	.151	.397	<b>.817</b>
terminatecontracts	.438	.260	-.487	.156	.409	<b>.807</b>
conductcloseoutactivities	.400	.267	-.449	.178	.377	<b>.666</b>
followupandexpediteorders	.374	.158	-.278	.421	.478	.393
resolvedeliveryreceivingprobs	.411	.181	-.313	.454	.496	.446
maintaininventory	.094	.149	-.109	<b>.624</b>	.202	.072
designinternaldistributechannel	.051	.188	-.153	<b>.604</b>	.200	.098
accountforassets	.077	.230	-.136	.508	.165	.089
establishwarehouseshipprocess	.069	.192	-.065	<b>.636</b>	.161	.052
selectmethdisposalequipmaterial	.127	.187	-.094	.582	.202	.185
disposesurplusequipmaterials	.147	.138	-.122	<b>.600</b>	.218	.193
facilitatemovementofgoods	.134	.244	-.166	.575	.260	.187
establishmissionvisionvalues	.047	.370	-.137	.157	.168	.162
upholdpromotmissionvisionvalues	.438	.323	-.387	.233	<b>.627</b>	.495
conductvalueanalyses	.294	.517	-.366	.232	.514	.429
implementgoalobjectivemeasures	.157	.520	-.212	.226	.361	.288
monitorlegislativetrendslaws	.176	.583	-.289	.202	.374	.302
conductbusinessanalyses	.062	<b>.654</b>	-.287	.216	.241	.229
analyzeeconmictrendcondition	.197	<b>.690</b>	-.313	.224	.348	.330
conductcostbenefitacquisition	.189	<b>.676</b>	-.352	.248	.349	.325
implementprocessimproveplan	.101	<b>.619</b>	-.218	.158	.236	.249
planimplementprocurestrategy	.085	<b>.678</b>	-.236	.186	.223	.238

formprocurecontingencyplan	.094	.524	-.205	.202	.204	.188
developstaffsuccessionplan	-.047	.406	-.008	.149	.030	.056

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Thirteen factors have eigenvalues above 1.0.

## Appendix C

### Factor Analysis of Job Tasks Managed by All Practitioners

#### Factor Analysis of Job Tasks Managed by All Practitioners

	Factor					
	1	2	3	4	5	6
designmaintainopsform	.355	.269	.267	-.254	.484	-.117
implementautomatedprocure	.297	.235	.239	-.237	.466	-.144
administerprocurementcard	.327	.323	.305	-.264	.508	-.205
administereprocurement	.370	.333	.289	-.272	.549	-.275
implementstandardprocess	.343	.263	.342	-.311	.554	-.106
implementoperatingworkpolicy	.198	.191	.315	-.255	.508	-.007
interpretoliciesandprocedures	.121	.104	.282	-.176	.421	.053
establishcooperativeprocprogram	.328	.287	.296	-.277	.517	-.208
implementsustainableprocurement	.386	.384	.294	-.280	.562	-.302
auditprocurementprocess	.293	.256	.329	-.224	.533	-.079
preparedepartmentbudget	.088	.209	.271	-.190	.330	-.013
managedepartmentpersonnel	.159	.164	.230	-.154	.396	.054
trainpurchasingpersonnel	.209	.220	.239	-.230	.489	-.013
utilizeautomprocurementsystem	.398	.378	.304	-.324	<b>.600</b>	-.242
utilizeaneprocurementsystem	.363	.347	.250	-.306	.581	-.230
ensurecompliancediversity	.443	.407	.323	-.313	.570	-.334
ensurecompliancesustainproc	.469	.438	.276	-.284	.597	-.357
procurementcomplianceandlaw	.433	.304	.314	-.315	.583	-.138
conductmarketresearch	.470	.428	.353	-.321	<b>.651</b>	-.335
recommendbuydecision	.405	.407	.362	-.333	<b>.628</b>	-.264
usehistoricalinfofordecisions	.454	.383	.358	-.297	<b>.625</b>	-.300
analyzeeconomicconditions	.472	.397	.399	-.289	<b>.602</b>	-.339
identifysourceofsupplies	.554	.428	.351	-.363	<b>.648</b>	-.283
selectmethodofprocurement	.561	.411	.321	-.349	<b>.612</b>	-.209
developsolicitationdocument	<b>.643</b>	.370	.336	-.425	.599	-.159
reviewsolicitationdocument	.477	.304	.333	-.327	.537	-.057
selectcontracttype	.574	.430	.315	-.361	<b>.611</b>	-.290
solicitcompetitivequote	<b>.777</b>	.451	.328	-.344	.502	-.397
solicitcompetitivebids	<b>.905</b>	.424	.342	-.368	.497	-.345
solicitcompetitiveproposals	<b>.880</b>	.389	.325	-.398	.462	-.296
ensuretransparentprocesses	<b>.708</b>	.317	.340	-.366	.491	-.123
identifyevaluationmethodology	<b>.659</b>	.313	.338	-.516	.492	-.217
conductprebidconferences	<b>.740</b>	.320	.358	-.509	.473	-.241

prepareandissueaddenda	<b>.796</b>	.371	.345	-.499	.499	-.320
analyzeevaluatesolicitations	<b>.758</b>	.308	.317	-.492	.460	-.225
preparerecommendationaward	<b>.685</b>	.272	.303	-.465	.414	-.200
respondprotestsandinquiries	.359	.144	.304	-.386	.268	.015
selectpaymentmethod	.539	.411	.387	-.469	.480	-.359
reviewsuppliersamples	.468	.394	.354	-.452	.453	-.352
preparecontracts	.599	.308	.325	-.488	.443	-.141
conductpostawarddebrief	.554	.388	.381	-.532	.494	-.276
mitigateriskthrutermsconditions	.440	.256	.339	-.426	.378	-.072
selectnegotiationmembers	.353	.269	.315	<b>-.651</b>	.350	-.223
preparenegotiationstrategy	.332	.288	.355	<b>-.735</b>	.351	-.183
conductnegotiations	.338	.252	.337	<b>-.716</b>	.350	-.140
documentnegotiationprocess	.474	.315	.387	<b>-.721</b>	.434	-.246
conductpostawardconference	.363	.389	.354	-.461	.383	-.564
evaluatesupplierperformance	.311	.362	.292	-.475	.324	<b>-.665</b>
monitorsuppliercompliance	.400	.366	.325	-.520	.387	<b>-.651</b>
modifycontracts	.517	.311	.365	-.555	.398	-.388
remediatesuppliernoncompliance	.429	.305	.408	-.574	.382	-.347
resolvedisputes	.341	.221	.371	-.555	.254	-.215
terminatecontracts	.434	.211	.374	-.566	.269	-.244
conductcloseoutactivities	.407	.428	.392	-.480	.400	-.589
followupandexpediteorders	.363	<b>.624</b>	.313	-.262	.391	-.486
resolvedeliveryreceivingprobs	.338	<b>.632</b>	.300	-.290	.398	-.479
maintaininventory	.229	<b>.761</b>	.247	-.195	.321	-.277
designinternaldistributechannel	.212	<b>.751</b>	.253	-.192	.328	-.188
accountforassets	.231	<b>.706</b>	.284	-.227	.356	-.221
establishwarehouseshipprocess	.214	<b>.737</b>	.270	-.187	.328	-.169
selectmethdisposalequipmaterial	.317	<b>.729</b>	.291	-.234	.347	-.157
disposesurplusequipmaterials	.339	<b>.735</b>	.270	-.219	.355	-.211
facilitatemovementofgoods	.257	<b>.749</b>	.265	-.211	.301	-.251
establishmissionvisionvalues	.125	.111	.469	-.266	.256	.081
upholdpromotmissionvisionvalues	.176	.126	.467	-.259	.274	.069
conductvalueanalyses	.327	.333	<b>.621</b>	-.401	.437	-.136
implementgoalobjectivemeasures	.170	.188	<b>.617</b>	-.314	.330	.059
monitorlegislativetrendslaws	.155	.182	.595	-.282	.302	-.011
conductbusinessanalyses	.268	.281	<b>.651</b>	-.333	.349	-.181
analyzeeconmictrendcondition	.247	.275	<b>.708</b>	-.280	.394	-.184
conductcostbenefitacquistion	.312	.334	<b>.682</b>	-.336	.393	-.280
implementprocessimproveplan	.233	.302	<b>.720</b>	-.305	.332	-.133
planimplementprocurestrategy	.278	.301	<b>.716</b>	-.314	.357	-.169



formprocurecontingencyplan	.266	.321	<b>.643</b>	-.315	.354	-.122
developstaffsuccessionplan	.147	.261	.585	-.253	.279	-.073

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Eleven factors have eigenvalues above 1.0.

## Appendix D

### Factor Analysis of Job Tasks Both Performed and Managed by

#### All Practitioners

#### Factor Analysis of Job Tasks Both Performed and Managed by All Practitioners

	Factor					
	1	2	3	4	5	6
Designmaintainopsform	.335	.277	-.201	-.236	.042	.486
implementautomatedprocure	.170	.296	-.179	-.205	-.026	.476
Administerprocurementcard	.132	.183	-.211	-.129	-.020	.329
Administereprocurement	.220	.210	-.207	-.229	.092	.443
Implementstandardprocess	.332	.355	-.198	-.294	.071	.556
implementoperatingworkpolicy	.230	.470	-.147	-.283	-.117	<b>.645</b>
interpretoliciesandprocedures	.326	.426	-.114	-.354	.003	<b>.640</b>
establishcooperativeprocprogram	.332	.348	-.177	-.356	-.036	.443
implementsustainableprocurement	.220	.313	-.272	-.276	.112	.416
Auditprocurementprocess	.289	.389	-.243	-.313	.052	.581
Preparedepartmentbudget	.063	.445	-.114	-.201	-.246	.437
managedepartmentpersonnel	.191	.497	-.060	-.263	-.212	<b>.631</b>
Trainpurchasingpersonnel	.221	.420	-.111	-.272	-.074	<b>.636</b>
utilizeautomprocurementsystem	.336	.262	-.216	-.263	.179	.503
utilizeaneprocurementsystem	.296	.229	-.165	-.272	.135	.446
Ensurecomplianceanddiversity	.312	.277	-.226	-.308	.219	.441
ensurecomplianceandproc	.266	.314	-.291	-.252	.226	.441
procurementcomplianceandlaw	.573	.342	-.210	-.439	.181	<b>.636</b>
Conductmarketresearch	.496	.326	-.293	-.423	.360	.474
Recommendbuydecision	.450	.394	-.312	-.438	.299	.521
usehistoricalinfofordecisions	.509	.385	-.270	-.430	.311	.568
Analyzeeconomicconditions	.424	.442	-.281	-.424	.295	.479
Identifysourceofsupplies	<b>.606</b>	.293	-.355	-.449	.397	.560
selectmethodofprocurement	<b>.695</b>	.267	-.245	-.461	.291	.586
developsolicitationdocument	<b>.763</b>	.256	-.180	-.508	.198	.499
Reviewsolicitationdocument	<b>.728</b>	.322	-.149	-.483	.104	.554
Selectcontracttype	<b>.727</b>	.266	-.224	-.521	.288	.521
Solicitcompetitivequote	<b>.748</b>	.123	-.303	-.417	.368	.304
Solicitcompetitivebids	<b>.879</b>	.197	-.193	-.512	.198	.329
Solicitcompetitiveproposals	<b>.879</b>	.243	-.148	-.553	.122	.346

ensuretransparentprocesses	<b>.816</b>	.286	-.171	-.513	.159	.463
identifyevaluationmethodology	<b>.744</b>	.302	-.143	-.581	.121	.339
Conductprebidconferences	<b>.813</b>	.277	-.177	-.619	.131	.319
Prepareandissueaddenda	<b>.868</b>	.233	-.152	-.580	.163	.299
Analyzeevaluatesolicitations	<b>.860</b>	.257	-.168	-.589	.134	.342
preparerecommendationaward	<b>.792</b>	.295	-.154	-.592	.139	.338
respondprotestsandinquiries	.537	.477	-.076	-.564	-.076	.458
Selectpaymentmethod	.537	.359	-.282	-.526	.250	.372
Reviewsuppliersamples	.549	.306	-.318	-.507	.280	.358
Preparecontracts	<b>.713</b>	.275	-.167	-.589	.114	.371
Conductpostwarddebrief	.610	.369	-.170	<b>-.643</b>	.154	.301
mitigateriskthruconditions	.547	.471	-.125	<b>-.620</b>	-.001	.422
Selectnegotiationmembers	.420	.401	-.142	<b>-.661</b>	-.013	.297
Preparenegotiationstrategy	.405	.422	-.094	<b>-.709</b>	-.027	.299
Conductnegotiations	.478	.437	-.116	<b>-.738</b>	-.011	.360
documentnegotiationprocess	.527	.375	-.156	<b>-.749</b>	.044	.319
conductpostawardconference	.410	.272	-.244	<b>-.632</b>	.248	.222
evaluatesupplierperformance	.382	.241	-.348	<b>-.618</b>	.331	.257
Monitorsuppliercompliance	.490	.222	-.327	<b>-.649</b>	.323	.284
Modifycontracts	.567	.291	-.162	<b>-.756</b>	.152	.324
remediatesuppliernoncompliance	.494	.354	-.178	<b>-.810</b>	.099	.337
Resolvedisputes	.476	.426	-.150	<b>-.832</b>	.019	.367
Terminatecontracts	.474	.439	-.132	<b>-.805</b>	-.010	.369
Conductcloseoutactivities	.462	.304	-.263	<b>-.693</b>	.282	.254
Followupandexpediteorders	.363	.138	-.531	-.319	.534	.234
resolvedeliveryreceivingprobs	.351	.150	-.553	-.326	.551	.248
Maintaininventory	.093	.156	-.598	-.145	.308	.147
designinternaldistributechannel	.149	.294	<b>-.608</b>	-.252	.288	.230
Accountforassets	.152	.245	<b>-.600</b>	-.235	.184	.259
establishwarehouseshipprocess	.092	.275	<b>-.609</b>	-.194	.194	.217
selectmethdisposalequipmaterial	.229	.265	<b>-.821</b>	-.202	-.167	.370
disposesurplusequipmaterials	.223	.219	<b>-.835</b>	-.185	-.147	.331
Facilitatemovementofgoods	.212	.247	<b>-.665</b>	-.264	.293	.230
establishmissionvisionvalues	.141	<b>.701</b>	-.148	-.316	-.255	.509
upholdpromotmissionvisionvalues	.328	<b>.639</b>	-.184	-.420	-.050	.574
Conductvalueanalyses	.324	<b>.649</b>	-.270	-.437	.125	.444
implementgoalobjectivemeasures	.247	<b>.761</b>	-.176	-.387	-.087	.573
monitorlegislativetrendslaws	.211	<b>.743</b>	-.212	-.374	-.078	.469
Conductbusinessanalyses	.203	<b>.775</b>	-.230	-.378	.006	.357
analyzeeconmictrendcondition	.247	<b>.816</b>	-.267	-.403	.056	.401

conductcostbenefitacquisition	.277	<b>.764</b>	-.276	-.415	.109	.370
implementprocessimproveplan	.205	<b>.765</b>	-.192	-.382	-.004	.398
planimplementprocurestrategy	.246	<b>.784</b>	-.215	-.404	.037	.425
formprocurecontingencyplan	.194	<b>.739</b>	-.173	-.351	-.087	.415
Developstaffsuccessionplan	.086	<b>.704</b>	-.156	-.274	-.175	.412

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Twelve factors have eigenvalues above 1.0.

## Appendix E

### Factor Analysis of Job Tasks Performed or Managed by All Practitioners (Task Completion)

**Factor Analysis of Job Tasks Performed Or Managed (Task Completion)**

	Factor					
	1	2	3	4	5	6
designmaintainopsform	.146	.167	.126	.356	.058	-.067
implementautomatedprocure	.136	.228	.166	.474	.135	-.071
administerprocurementcard	.088	.292	.111	.389	.143	-.068
administereprocurement	.125	.160	.174	.393	.193	-.073
implementstandardprocess	.144	.171	.182	.436	.126	-.131
implementoperatingworkpolicy	.103	.213	.191	.534	.043	-.123
interpretoliciesandprocedures	.162	.041	.179	.255	.018	-.178
establishcooperativeprocprogram	.329	.221	.300	.438	.148	-.283
implementsustainableprocurement	.225	.290	.256	.449	.238	-.168
auditprocurementprocess	.180	.227	.126	.428	.202	-.139
preparedepartmentbudget	.048	.410	.191	.550	.143	-.109
managedepartmentpersonnel	.194	.274	.280	<b>.655</b>	.081	-.179
trainpurchasingpersonnel	.206	.118	.203	.464	.068	-.146
utilizeautomprocurementsystem	.266	.078	.124	.226	.252	-.138
utilizeaneprocurementsystem	.142	.118	.158	.208	.227	-.122
ensurecomplianceanddiversity	.196	.057	.160	.238	.198	-.171
ensurecomplianceandproc	.219	.203	.206	.347	.307	-.147
procurementcomplianceandlaw	.511	.045	.238	.270	.151	-.238
conductmarketresearch	.434	.090	.332	.252	.326	-.341
recommendbuydecision	.389	.219	.344	.354	.344	-.332
usehistoricalinfofordecisions	.412	.127	.334	.311	.323	-.333
analyzeeconomicconditions	.347	.120	.387	.398	.307	-.377
identifysourceofsupplies	.580	.114	.259	.174	.410	-.233
selectmethodofprocurement	<b>.601</b>	.088	.282	.237	.273	-.225
developsolicitationdocument	<b>.748</b>	.008	.356	.237	.141	-.366
reviewsolicitationdocument	<b>.708</b>	-.018	.345	.215	.085	-.361
selectcontracttype	<b>.646</b>	.061	.349	.236	.234	-.366
solicitcompetitivequote	.581	.192	.229	.192	.391	-.207
solicitcompetitivebids	<b>.782</b>	.026	.351	.224	.098	-.393
solicitcompetitiveproposals	<b>.751</b>	.013	.469	.290	.025	-.436
ensuretransparentprocesses	<b>.764</b>	-.010	.343	.238	.069	-.358

identifyevaluationmethodology	<b>.638</b>	-.009	.538	.298	-.006	-.463
conductprebidconferences	<b>.733</b>	-.028	.486	.259	.051	-.494
prepareandissueaddenda	<b>.772</b>	-.040	.417	.219	.014	-.491
analyzeevaluatesolicitations	<b>.778</b>	-.015	.417	.211	.062	-.460
preparerecommendationaward	<b>.761</b>	-.004	.427	.237	.101	-.448
respondprotestsandinquiries	.535	.020	.462	.322	-.019	-.482
selectpaymentmethod	.385	.159	.396	.303	.293	-.385
reviewsuppliersamples	.462	.175	.400	.286	.386	-.386
preparecontracts	<b>.631</b>	.003	.398	.196	.079	-.496
conductpostawarddebrief	.513	.018	.528	.321	.159	-.575
mitigateriskthruconditions	.488	.036	.503	.386	.037	-.525
selectnegotiationmembers	.363	.067	<b>.771</b>	.406	.094	-.479
preparenegotiationstrategy	.365	.029	<b>.880</b>	.367	.057	-.530
conductnegotiations	.397	.050	<b>.890</b>	.280	.088	-.529
documentnegotiationprocess	.376	.060	<b>.877</b>	.286	.063	-.510
conductpostawardconference	.289	.073	.477	.291	.223	-.594
evaluatesupplierperformance	.252	.154	.382	.258	.366	-.565
monitorsuppliercompliance	.347	.066	.403	.240	.212	<b>-.648</b>
modifycontracts	.486	-.040	.475	.203	.029	<b>-.710</b>
remediatesuppliernoncompliance	.424	.000	.526	.277	.036	<b>-.783</b>
resolvedisputes	.445	.013	.558	.291	.025	<b>-.776</b>
terminatecontracts	.460	.021	.533	.293	.017	<b>-.771</b>
conductcloseoutactivities	.277	.061	.452	.301	.213	<b>-.667</b>
followupandexpediteorders	.195	.350	.118	.197	<b>.672</b>	-.184
resolvedeliveryreceivingprobs	.220	.357	.163	.200	<b>.655</b>	-.234
maintaininventory	-.021	.596	.076	.284	.536	-.022
designinternaldistributechannel	.025	.566	.187	.357	.539	-.088
accountforassets	.014	.598	.150	.343	.415	-.066
establishwarehouseshipprocess	-.023	.595	.108	.331	.461	-.035
selectmethdisposalequipmaterial	.130	<b>.906</b>	.135	.407	.162	-.096
disposesurplusequipmaterials	.115	<b>.913</b>	.117	.380	.167	-.072
facilitatemovementofgoods	.081	.578	.150	.302	.506	-.133
establishmissionvisionvalues	.170	.283	.313	<b>.666</b>	.084	-.216
upholdpromotmissionvisionvalues	.284	.059	.202	.370	.111	-.217
conductvalueanalyses	.300	.186	.424	.518	.316	-.399
implementgoalobjectivemeasures	.203	.230	.296	<b>.713</b>	.173	-.253
monitorlegislativetrendslaws	.155	.160	.306	.591	.102	-.305
conductbusinessanalyses	.173	.235	.415	<b>.637</b>	.281	-.354
analyzeeconmictrendcondition	.245	.178	.402	<b>.635</b>	.292	-.419
conductcostbenefitacquisition	.240	.231	.456	.593	.352	-.396

implementprocessimproveplan	.149	.189	.392	<b>.673</b>	.202	-.372
planimplementprocurestrategy	.218	.227	.419	<b>.718</b>	.289	-.408
formprocurecontingencyplan	.179	.291	.342	<b>.680</b>	.224	-.306
developstaffsuccessionplan	.117	.355	.312	<b>.701</b>	.184	-.225

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Twenty-one factors have eigenvalues above 1.0.

## Appendix F

### Factor Analysis by Job Position

#### Perform Factor Analysis – Buyer

	Factor					
	1	2	3	4	5	6
designmaintainopsform	.243	.026	.068	-.153	-.089	.194
implementautomatedprocure	.007	.111	.105	-.105	.063	.126
administerprocurementcard	-.010	.231	.135	-.194	-.036	.121
administereprocurement	.087	.172	.172	-.100	-.040	.262
implementstandardprocess	.175	.132	.123	-.103	-.115	.328
implementoperatingworkpolicy	.099	.196	.236	-.163	-.064	.228
interpretoliciesandprocedures	.343	.025	.054	-.155	-.264	.376
establishcooperativeprocprogram	.116	.257	.187	-.265	-.216	.202
implementsustainableprocurement	.010	.280	.232	-.216	-.072	.139
auditprocurementprocess	.174	.100	.125	-.080	-.084	.310
preparedepartmentbudget	-.095	.171	.092	-.013	-.051	.038
managedepartmentpersonnel	-.040	.068	.026	-.080	-.071	-.038
trainpurchasingpersonnel	.083	.147	.157	-.169	-.124	.288
utilizeautomprocurementsystem	.409	.044	.011	-.177	-.146	.451
utilizeaneprocurementsystem	.208	.095	.094	-.155	-.118	.419
ensurecompliancediversity	.259	.126	.068	-.226	-.189	.288
ensurecompliancesustainproc	.183	.270	.230	-.285	-.085	.345
procurementcomplianceandlaw	.579	.096	.111	-.201	-.224	.543
conductmarketresearch	.442	.130	.122	-.197	-.382	.443
recommendbuydecision	.412	.208	.118	-.268	-.236	.412
usehistoricalinfofordecisions	.395	.142	.139	-.258	-.286	.452
analyzeeconomicconditions	.256	.281	.116	-.277	-.250	.327
identifysourceofsupplies	<b>.727</b>	-.109	.118	-.139	-.213	.536
selectmethodofprocurement	<b>.724</b>	-.020	.187	-.183	-.199	.549
developsolicitationdocument	<b>.736</b>	-.084	.176	-.234	-.298	.438
reviewsolicitationdocument	<b>.794</b>	-.019	.169	-.246	-.270	.379
selectcontracttype	<b>.697</b>	.068	.215	-.308	-.260	.449
solicitcompetitivequote	<b>.746</b>	.021	.225	-.190	-.312	.483
solicitcompetitivebids	<b>.909</b>	.071	.103	-.206	-.353	.213
solicitcompetitiveproposals	<b>.835</b>	.145	.100	-.284	-.353	.185
ensuretransparentprocesses	<b>.862</b>	-.019	.112	-.172	-.379	.398
identifyevaluationmethodology	<b>.582</b>	.153	.055	-.312	-.404	.255



conductprebidconferences	<b>.738</b>	.140	.078	-.268	-.485	.253
prepareandissueaddenda	<b>.826</b>	.081	.023	-.205	-.459	.301
analyzeevaluatesolicitations	<b>.803</b>	.127	.047	-.294	-.334	.351
preparerecommendationaward	<b>.789</b>	.086	.037	-.230	-.351	.332
respondprotestsandinquiries	.412	.172	.112	-.228	-.412	.230
selectpaymentmethod	.264	.251	.149	-.418	-.354	.395
reviewsuppliersamples	.440	.299	.228	-.404	-.327	.348
preparecontracts	<b>.763</b>	.135	.142	-.267	-.387	.404
conductpostawarddebrief	.452	.243	.076	-.336	-.492	.303
mitigateriskthrutermsconditions	.371	.144	.033	-.265	-.386	.217
selectnegotiationmembers	.184	.227	.078	-.548	-.389	.177
preparenegotiationstrategy	.258	.354	.088	<b>-.643</b>	-.502	.237
conductnegotiations	.364	.197	.130	<b>-.875</b>	-.407	.172
documentnegotiationprocess	.375	.224	.184	<b>-.865</b>	-.416	.185
conductpostawardconference	.260	.284	.174	-.370	-.488	.218
evaluatesupplierperformance	.314	.300	.206	-.307	-.436	.359
monitorsuppliercompliance	.403	.133	.167	-.330	-.494	.346
modifycontracts	.482	.093	.085	-.336	<b>-.661</b>	.174
remediatesuppliernoncompliance	.350	.205	.044	-.347	<b>-.718</b>	.147
resolvedisputes	.362	.189	.101	-.368	<b>-.775</b>	.249
terminatecontracts	.346	.186	.068	-.357	<b>-.810</b>	.206
conductcloseoutactivities	.239	.238	.115	-.313	<b>-.619</b>	.244
followupandexpediteorders	.397	.205	.271	-.278	-.246	.562
resolvedeliveryreceivingprobs	.408	.218	.316	-.338	-.300	.551
maintaininventory	.050	.202	.415	-.276	-.105	.370
designinternaldistributechannel	.037	.240	.384	-.320	.041	.349
accountforassets	.027	.302	.333	-.273	-.048	.235
establishwarehouseshipprocess	.038	.223	.449	-.177	.003	.290
selectmethdisposalequipmaterial	.065	.246	<b>.845</b>	-.054	-.099	.046
disposesurplusequipmaterials	.167	.177	<b>.811</b>	-.105	-.061	.076
facilitatemovementofgoods	.121	.309	.513	-.223	-.008	.359
establishmissionvisionvalues	-.009	.267	.178	-.169	-.071	.055
upholdpromotmissionvisionvalues	.326	.268	.242	-.164	-.270	.442
conductvalueanalyses	.154	.506	.195	-.254	-.302	.356
implementgoalobjectivemeasures	.050	.573	.244	-.139	-.151	.275
monitorlegislativetrendslaws	.037	<b>.672</b>	.197	-.244	-.169	.145
conductbusinessanalyses	.001	<b>.681</b>	.206	-.346	-.191	.125
analyzeeconmictrendcondition	.079	<b>.704</b>	.190	-.235	-.217	.197
conductcostbenefitacquisition	.092	<b>.682</b>	.243	-.348	-.212	.257
implementprocessimproveplan	.093	<b>.604</b>	.219	-.216	-.166	.145

planimplementprocurestrategy	-.031	<b>.674</b>	.230	-.203	-.118	.107
formprocurecontingencyplan	-.054	.565	.226	-.162	-.059	.104
developstaffsuccessionplan	.044	.395	.239	-.136	.068	.024

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Nineteen factors have eigenvalues above 1.0.

## Appendix G

### Factor Analysis by Job Position

#### Perform Factor Analysis – Procurement Analyst

	Factor					
	1	2	3	4	5	6
designmaintainopsform	.218	.085	-.171	.016	-.288	-.164
implementautomatedprocure	.082	.131	-.047	-.075	-.173	-.060
administerprocurementcard	.001	.018	-.105	-.132	-.082	-.022
administereprocurement	.112	.110	-.166	-.041	-.261	-.108
implementstandardprocess	.174	.151	-.168	-.034	-.342	-.239
implementoperatingworkpolicy	.145	.228	-.141	-.010	-.265	-.176
interpretpoliciesandprocedures	.392	.079	-.263	-.014	-.493	-.394
establishcooperativeprocprogram	.071	.207	-.179	-.144	-.273	-.183
implementsustainableprocurement	.030	.251	-.129	-.245	-.169	-.044
auditprocurementprocess	.152	.166	-.164	-.090	-.434	-.297
preparedepartmentbudget	-.104	.099	.057	-.135	.080	.088
managedepartmentpersonnel	-.032	.184	-.082	-.118	-.050	-.022
trainpurchasingpersonnel	.207	.125	-.126	-.025	-.364	-.199
utilizeautomprocurementsystem	.298	.088	-.211	-.076	-.537	-.194
utilizeaneprocurementsystem	.240	.083	-.179	-.060	-.402	-.160
ensurecomplianceanddiversity	.196	.146	-.169	-.055	-.368	-.169
ensurecomplianceandproc	.105	.291	-.157	-.192	-.294	-.057
procurementcomplianceandlaw	.527	.069	-.313	-.059	<b>-.687</b>	-.372
conductmarketresearch	.371	.237	-.303	-.121	<b>-.645</b>	-.322
recommendbuydecision	.310	.235	-.266	-.159	-.573	-.244
usehistoricalinfofordecisions	.418	.239	-.342	-.139	<b>-.724</b>	-.369
analyzeeconomicconditions	.306	.332	-.327	-.139	-.569	-.277
identifysourceofsupplies	.521	.137	-.328	-.075	<b>-.729</b>	-.414
selectmethodofprocurement	.593	.015	-.332	-.088	<b>-.701</b>	-.379
developsolicitationdocument	<b>.736</b>	.083	-.334	-.052	-.663	-.425
reviewsolicitationdocument	<b>.731</b>	.069	-.348	-.056	-.686	-.432
selectcontracttype	<b>.647</b>	.089	-.363	-.099	-.687	-.440
solicitcompetitivequote	<b>.741</b>	.144	-.317	-.116	-.513	-.415
solicitcompetitivebids	<b>.901</b>	.148	-.346	-.078	-.479	-.454
solicitcompetitiveproposals	<b>.903</b>	.125	-.361	-.043	-.440	-.446
ensuretransparentprocesses	<b>.833</b>	.101	-.342	-.025	-.502	-.486
identifyevaluationmethodology	<b>.758</b>	.119	-.374	-.023	-.436	-.423

conductprebidconferences	<b>.797</b>	.110	-.441	.014	-.475	-.494
prepareandissueaddenda	<b>.838</b>	.072	-.400	-.050	-.449	-.468
analyzeevaluatesolicitations	<b>.810</b>	.071	-.395	-.051	-.449	-.503
preparerecommendationaward	<b>.811</b>	.102	-.359	-.035	-.428	-.522
respondprotestsandinquiries	.574	.168	-.371	-.044	-.456	-.483
selectpaymentmethod	.438	.181	-.375	-.089	-.489	-.439
reviewsuppliersamples	.452	.263	-.352	-.096	-.436	-.442
preparecontracts	<b>.710</b>	.073	-.439	.013	-.461	-.534
conductpostawarddebrief	.535	.208	-.456	.003	-.428	-.507
mitigateriskthru termsconditions	.458	.179	-.399	-.021	-.416	-.517
selectnegotiationmembers	.222	.211	-.570	-.126	-.218	-.253
preparenegotiationstrategy	.285	.193	<b>-.803</b>	-.095	-.263	-.371
conductnegotiations	.374	.125	<b>-.880</b>	-.105	-.344	-.436
documentnegotiationprocess	.406	.092	<b>-.798</b>	-.068	-.352	-.448
conductpostawardconference	.342	.251	-.430	.025	-.384	-.546
evaluatesupplierperformance	.406	.236	-.392	-.061	-.355	-.595
monitorsuppliercompliance	.450	.211	-.358	-.038	-.372	<b>-.687</b>
modifycontracts	.519	.127	-.397	-.041	-.419	<b>-.761</b>
remediatesuppliernoncompliance	.457	.174	-.384	-.030	-.350	<b>-.777</b>
resolvedisputes	.418	.150	-.442	-.094	-.339	<b>-.800</b>
terminatecontracts	.423	.188	-.429	-.094	-.385	<b>-.787</b>
conductcloseoutactivities	.383	.206	-.419	.009	-.382	<b>-.636</b>
followupandexpediteorders	.277	.207	-.207	-.224	-.329	-.316
resolvedeliveryreceivingprobs	.338	.210	-.237	-.311	-.362	-.386
maintaininventory	.094	.242	-.055	-.362	-.127	.072
designinternaldistributechannel	.002	.257	-.126	-.336	-.131	-.044
accountforassets	.075	.286	-.102	-.375	-.110	.017
establishwarehouseshipprocess	.028	.224	-.053	-.375	-.029	.091
selectmethdisposalequipmaterial	.053	.127	-.112	<b>-.792</b>	-.117	-.116
disposesurplusequipmaterials	.065	.114	-.160	<b>-.840</b>	-.124	-.130
facilitatemovementofgoods	.038	.262	-.136	-.316	-.090	-.066
establishmissionvisionvalues	.039	.364	-.063	-.180	-.084	-.050
upholdpromotmissionvisionvalues	.359	.278	-.330	-.078	-.530	-.416
conductvalueanalyses	.239	.489	-.267	-.128	-.468	-.305
implementgoalobjectivemeasures	.127	.494	-.158	-.155	-.257	-.171
monitorlegislativetrendslaws	.178	.476	-.231	-.219	-.361	-.220
conductbusinessanalyses	.036	<b>.641</b>	-.192	-.159	-.219	-.115
analyzeeconmictrendcondition	.176	<b>.635</b>	-.235	-.185	-.301	-.222
conductcostbenefitacquisition	.151	<b>.640</b>	-.266	-.160	-.310	-.220
implementprocessimproveplan	.088	.566	-.175	-.140	-.215	-.195

planimplementprocurestrategy	.092	<b>.616</b>	-.164	-.178	-.201	-.150
formprocurecontingencyplan	.090	.472	-.157	-.145	-.140	-.095
developstaffsuccessionplan	-.073	.344	.049	-.188	-.012	.018

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Seventeen factors have eigenvalues above 1.0.

## Appendix H

### Factor Analysis by Job Position

#### Both Perform and Manage Factor Analysis

#### Procurement Analyst

	Factor					
	1	2	3	4	5	6
designmaintainopsform	.229	.268	-.195	.203	.157	.438
implementautomatedprocure	.113	.225	-.109	.209	.068	.365
administerprocurementcard	.072	.126	-.038	.205	.042	.294
administereprocurement	.185	.171	-.204	.175	.177	.366
implementstandardprocess	.276	.422	-.230	.210	.205	.486
implementoperatingworkpolicy	.164	.417	-.214	.186	.139	.426
interpretoliciesandprocedures	.331	.376	-.323	.174	.298	.539
establishcooperativeprocprogram	.308	.241	-.260	.239	.277	.316
implementsustainableprocurement	.177	.327	-.191	.210	.237	.396
auditprocurementprocess	.235	.395	-.203	.312	.264	.481
preparedepartmentbudget	.023	.251	-.063	.130	.041	.201
managedepartmentpersonnel	.184	.394	-.168	.179	.166	.436
trainpurchasingpersonnel	.208	.357	-.223	.194	.216	.467
utilizeautomprocurementsystem	.307	.310	-.198	.233	.219	.547
utilizeaneprocurementsystem	.280	.195	-.191	.113	.232	.432
ensurecompliancediversity	.274	.287	-.141	.137	.278	.484
ensurecompliancesustainproc	.192	.353	-.126	.192	.200	.457
procurementcomplianceandlaw	.590	.326	-.295	.164	.434	<b>.665</b>
conductmarketresearch	.414	.305	-.273	.212	.373	.561
recommendbuydecision	.430	.378	-.305	.241	.398	<b>.616</b>
usehistoricalinfofordecisions	.473	.399	-.332	.228	.425	<b>.686</b>
analyzeeconomicconditions	.383	.432	-.322	.221	.417	.598
identifysourceofsupplies	.549	.332	-.349	.297	.467	<b>.677</b>
selectmethodofprocurement	<b>.663</b>	.299	-.381	.184	.469	.657
developsolicitationdocument	<b>.760</b>	.249	-.377	.176	.475	.576
reviewsolicitationdocument	<b>.772</b>	.271	-.355	.190	.465	.597
selectcontracttype	<b>.736</b>	.278	-.398	.192	.521	.598
solicitcompetitivequote	<b>.795</b>	.154	-.306	.296	.439	.354
solicitcompetitivebids	<b>.897</b>	.226	-.369	.229	.513	.343
solicitcompetitiveproposals	<b>.894</b>	.245	-.435	.213	.521	.334
ensuretransparentprocesses	<b>.849</b>	.276	-.398	.205	.489	.425

identifyevaluationmethodology	<b>.773</b>	.292	-.525	.191	.483	.333
conductprebidconferences	<b>.809</b>	.234	-.502	.239	.581	.295
prepareandissueaddenda	<b>.867</b>	.221	-.461	.200	.550	.307
analyzeevaluatesolicitations	<b>.867</b>	.237	-.446	.218	.530	.344
preparerecommendationaward	<b>.797</b>	.286	-.461	.204	.544	.326
respondprotestsandinquiries	<b>.632</b>	.364	-.415	.190	.495	.369
selectpaymentmethod	.469	.340	-.373	.266	.442	.333
reviewsuppliersamples	.518	.302	-.372	.327	.445	.338
preparecontracts	<b>.743</b>	.274	-.454	.210	.555	.378
conductpostawarddebrief	<b>.616</b>	.316	-.454	.193	.579	.290
mitigateriskthruconditions	.571	.376	-.469	.193	.588	.314
selectnegotiationmembers	.374	.312	<b>-.778</b>	.133	.426	.233
preparenegotiationstrategy	.387	.349	<b>-.899</b>	.131	.507	.196
conductnegotiations	.486	.324	<b>-.895</b>	.158	.559	.271
documentnegotiationprocess	.498	.304	<b>-.858</b>	.190	.602	.294
conductpostawardconference	.420	.312	-.539	.252	<b>.604</b>	.270
evaluatesupplierperformance	.333	.284	-.403	.329	<b>.602</b>	.246
monitorsuppliercompliance	.452	.285	-.412	.325	<b>.682</b>	.294
modifycontracts	.592	.240	-.532	.216	<b>.813</b>	.296
remediatesuppliernoncompliance	.510	.292	-.504	.198	<b>.878</b>	.273
resolvedisputes	.526	.289	-.540	.191	<b>.887</b>	.267
terminatecontracts	.535	.333	-.537	.186	<b>.879</b>	.302
conductcloseoutactivities	.456	.378	-.469	.239	<b>.713</b>	.314
followupandexpediteorders	.329	.251	-.228	.561	.322	.280
resolvedeliveryreceivingprobs	.350	.257	-.212	.585	.354	.317
maintaininventory	.110	.221	-.131	<b>.716</b>	.159	.145
designinternaldistributechannel	.140	.344	-.195	<b>.724</b>	.205	.203
accountforassets	.146	.300	-.135	.588	.182	.234
establishwarehouseshipprocess	.090	.319	-.128	<b>.672</b>	.158	.175
selectmethdisposalequipmaterial	.200	.296	-.097	<b>.692</b>	.149	.322
disposesurplusequipmaterials	.172	.261	-.116	<b>.704</b>	.143	.266
facilitatemovementofgoods	.217	.291	-.186	<b>.713</b>	.231	.257
establishmissionvisionvalues	.147	.566	-.240	.315	.168	.272
upholdpromotmissionvisionvalues	.358	.539	-.329	.273	.389	.445
conductvalueanalyses	.321	<b>.648</b>	-.380	.326	.381	.421
implementgoalobjectivemeasures	.266	<b>.732</b>	-.308	.357	.306	.447
monitorlegislativetrendslaws	.226	<b>.665</b>	-.373	.320	.330	.341
conductbusinessanalyses	.223	<b>.773</b>	-.297	.335	.289	.343
analyzeeconmictrendcondition	.250	<b>.811</b>	-.352	.300	.332	.390
conductcostbenefitacquisition	.267	<b>.804</b>	-.332	.295	.355	.373

implementprocessimproveplan	.219	<b>.733</b>	-.341	.256	.299	.354
planimplementprocurestrategy	.245	<b>.777</b>	-.351	.245	.308	.422
formprocurecontingencyplan	.215	<b>.718</b>	-.272	.289	.243	.316
developstaffsuccessionplan	.108	<b>.606</b>	-.178	.266	.162	.280

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Fifteen factors have eigenvalues above 1.0.



## Appendix I

### Factor Analysis by Job Position

#### Manage Factor Analysis – Procurement Analyst

	Factor					
	1	2	3	4	5	6
Designmaintainopsform	.092	.193	.130	.096	.349	-.277
implementautomatedprocure	.146	.248	.071	.135	.428	-.097
Administerprocurementcard	.202	.093	.171	.181	.460	-.106
Administereprocurement	.192	.131	.123	.174	.520	-.059
Implementstandardprocess	.112	.256	.062	.083	.425	-.221
implementoperatingworkpolicy	.049	.255	.014	.091	.444	-.245
interpretpoliciesandprocedures	.061	.298	-.004	.099	.431	-.257
establishcooperativeprocprogram	.123	.156	.118	.190	.490	-.190
implementsustainableprocurement	.162	.307	.189	.143	.441	-.128
Auditprocurementprocess	.101	.242	.091	.079	.487	-.118
Preparedepartmentbudget	.075	.161	.089	.086	.368	-.213
managedepartmentpersonnel	.120	.169	.035	.099	.474	-.220
Trainpurchasingpersonnel	.257	.242	.081	.196	.513	-.166
utilizeautomprocurementsystem	.149	.158	.202	.217	.548	-.206
utilizeaneprocurementsystem	.158	.193	.122	.178	.531	-.152
Ensurecomplianceanddiversity	.111	.142	.200	.178	.479	-.220
ensurecomplianceandproc	.156	.195	.213	.224	.534	-.115
procurementcomplianceandlaw	.284	.145	.203	.244	.421	-.453
Conductmarketresearch	.237	.265	.187	.257	.441	-.436
Recommendbuydecision	.128	.310	.258	.183	.468	-.434
usehistoricalinfofordecisions	.122	.217	.080	.156	.350	-.522
analyzeeconomicconditions	.227	.104	.201	.142	.396	-.244
Identifysourceofsupplies	.395	.226	.192	.268	.479	-.379
selectmethodofprocurement	.328	.148	.207	.185	.312	-.481
developsolicitationdocument	.462	.281	.183	.305	.315	-.725
Reviewsolicitationdocument	.391	.215	.199	.241	.283	-.672
Selectcontracttype	.363	.079	.180	.183	.268	-.529
Solicitcompetitivequote	<b>.738</b>	.039	.203	.159	.265	-.162
Solicitcompetitivebids	<b>.935</b>	.055	.207	.191	.177	-.249
Solicitcompetitiveproposals	<b>.903</b>	.047	.178	.192	.218	-.248
ensuretransparentprocesses	<b>.629</b>	.040	.186	.164	.188	-.233
identifyevaluationmethodology	.476	.164	.083	.343	.298	-.301

Conductprebidconferences	.551	.154	.096	.415	.139	-.317
Prepareandissueaddenda	.599	.093	.156	.385	.219	-.215
analyzeevaluatesolicitations	.537	.133	.060	.387	.201	-.274
preparerecommendationaward	.470	.118	.063	.299	.136	-.195
respondprotestsandinquiries	.310	.174	.162	.365	.166	-.312
Selectpaymentmethod	.276	.221	.203	.349	.253	-.154
Reviewsuppliersamples	.326	.194	.114	.418	.212	-.220
Preparecontracts	.445	.089	.077	.321	.182	-.358
Conductpostawarddebrief	.259	.181	.123	.405	.161	-.365
mitigateriskthrutermsconditions	.310	.191	.237	.297	.143	-.213
Selectnegotiationmembers	.099	.101	.088	.498	.144	-.035
Preparenegotiationstrategy	.197	.271	.116	<b>.622</b>	.120	-.158
Conductnegotiations	.262	.201	.166	<b>.616</b>	.159	-.212
documentnegotiationprocess	.215	.269	.141	<b>.632</b>	.197	-.267
Conductpostawardconference	.133	.194	.122	.383	.171	-.092
Evaluatesupplierperformance	.082	.110	.101	.522	.143	-.024
Monitorsuppliercompliance	.126	.154	.124	<b>.648</b>	.153	.002
Modifycontracts	.314	.177	.163	<b>.617</b>	.167	-.159
remediatesuppliernoncompliance	.301	.151	.168	<b>.677</b>	.204	-.214
Resolvedisputes	.299	.170	.211	<b>.665</b>	.153	-.178
Terminatecontracts	.289	.201	.120	.589	.157	-.207
Conductcloseoutactivities	.212	.220	.189	.522	.211	-.131
Followupandexpediteorders	.236	.137	.410	.220	.171	-.110
resolvedeliveryreceivingprobs	.185	.138	.394	.320	.150	-.040
Maintaininventory	.116	.162	.593	.144	.136	-.085
designinternaldistributechannel	.042	.243	.613	.127	.048	-.054
Accountforassets	.062	.179	.548	.157	.148	-.108
establishwarehouseshipprocess	.111	.194	.575	.091	.221	-.119
selectmethdisposalequipmaterial	.149	.055	.767	.081	.159	-.092
disposesurplusequipmaterials	.158	.041	.747	.140	.150	-.099
Facilitatemovementofgoods	.103	.093	.644	.135	.099	-.109
establishmissionvisionvalues	.105	.566	.151	.185	.226	-.308
upholdpromotmissionvisionvalues	.101	.489	.120	.193	.254	-.227
Conductvalueanalyses	.095	.594	.190	.209	.229	-.159
implementgoalobjectivemeasures	.053	.598	.146	.225	.287	-.276
monitorlegislativetrendslaws	.167	.488	.113	.293	.246	-.184
Conductbusinessanalyses	.076	.598	.079	.220	.359	-.074
analyzeeconmictrendcondition	.071	<b>.681</b>	.109	.217	.374	.024
conductcostbenefitacquisition	.065	<b>.681</b>	.169	.237	.185	.058
implementprocessimproveplan	.026	<b>.725</b>	.196	.105	.183	-.088

planimplementprocurestrategy	.105	<b>.666</b>	.130	.173	.229	-.118
formprocurecontingencyplan	.050	.529	.103	.178	.153	-.142
developstaffsuccessionplan	-.019	.428	.146	.120	.157	-.152

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Twenty factors have eigenvalues above 1.0.

## Appendix J

### Factor Analysis by Job Position

#### Manage Factor Analysis – Procurement Manager

	Factor					
	1	2	3	4	5	6
Designmaintainopsform	.282	.155	-.197	.320	.160	.422
implementautomatedprocure	.215	.028	-.093	.214	.360	.067
administerprocurementcard	.112	.081	.137	.207	.096	.439
Administereprocurement	.229	.090	-.153	.300	.148	.284
implementstandardprocess	.340	.276	-.188	.331	.238	.555
implementoperatingworkpolicy	.252	.049	-.241	.180	.151	.559
interpretpoliciesandprocedures	.146	.010	-.038	.164	.053	.447
establishcooperativeprocprogram	.414	.156	-.276	.194	.352	.419
implementsustainableprocurement	.372	.295	-.201	.219	.222	.262
Auditprocurementprocess	.267	.175	-.215	.143	.208	.433
Preparedepartmentbudget	-.114	.084	-.019	-.007	.130	.043
managedepartmentpersonnel	.053	.166	-.048	.063	.050	.447
Trainpurchasingpersonnel	.155	.105	-.195	.108	.161	.457
utilizeautomprocurementsystem	.347	.072	-.109	.066	.280	.287
utilizeaneprocurementsystem	.252	.261	-.146	.011	.161	.227
Ensurecomplianceanddiversity	.559	.122	-.177	.316	.308	.287
ensurecompliancesustainproc	.406	.048	-.089	.236	.279	.172
procurementcomplianceandlaw	.136	-.029	-.145	.165	.071	.506
Conductmarketresearch	.412	.217	-.208	.296	.508	.364
Recommendbuydecision	.269	.031	-.345	.475	.320	.504
usehistoricalinfofordecisions	.367	.195	-.201	.288	.529	.402
analyzeeconomicconditions	.421	.156	-.142	.489	.581	.473
Identifysourceofsupplies	.366	.194	-.353	.393	.537	.498
selectmethodofprocurement	.497	.059	-.163	.408	.459	.379
developsolicitationdocument	.565	.187	-.142	.255	.371	.306
reviewsolicitationdocument	.452	.193	-.164	.198	.137	.308
Selectcontracttype	.509	.092	-.237	.382	.347	.467
Solicitcompetitivequote	<b>.654</b>	.321	-.345	.240	.420	.512
Solicitcompetitivebids	<b>.784</b>	.324	-.385	.374	.387	.442
solicitcompetitiveproposals	<b>.793</b>	.210	-.456	.367	.276	.414
ensuretransparentprocesses	<b>.640</b>	.127	-.308	.318	.151	.451
identifyevaluationmethodology	<b>.653</b>	.241	-.507	.413	.256	.233

Conductprebidconferences	<b>.702</b>	.221	-.371	.337	.230	.436
Prepareandissueaddenda	<b>.811</b>	.220	-.540	.410	.328	.384
analyzeevaluatesolicitations	<b>.750</b>	.257	-.487	.434	.339	.254
preparerecommendationaward	<b>.672</b>	.192	-.482	.493	.319	.282
respondprotestsandinquiries	.545	.013	-.283	.397	.128	.105
Selectpaymentmethod	<b>.634</b>	.158	-.420	.469	.243	.211
Reviewsuppliersamples	<b>.542</b>	.159	-.373	.414	.313	.201
Preparecontracts	<b>.622</b>	.275	-.431	.218	.159	.122
conductpostawarddebrief	.559	.199	-.541	.426	.324	.255
mitigateriskthrutermsconditions	.519	.202	-.394	.373	.109	.147
Selectnegotiationmembers	.375	.105	<b>-.707</b>	.398	.189	.282
preparenegotiationstrategy	.312	.152	<b>-.795</b>	.293	.152	.142
conductnegotiations	.308	.212	<b>-.867</b>	.239	.171	.247
documentnegotiationprocess	.351	.200	<b>-.865</b>	.229	.081	.346
conductpostawardconference	.429	.265	-.598	.332	.247	.059
evaluatesupplierperformance	.441	.117	-.410	.339	.268	.048
monitorsuppliercompliance	.545	.188	-.450	.325	.244	.219
Modifycontracts	<b>.679</b>	.233	-.555	.451	.271	.274
remediatesuppliernoncompliance	<b>.638</b>	.265	-.540	.404	.145	.273
Resolvedisputes	.503	.151	-.335	.164	-.051	.044
terminatecontracts	.548	.236	-.556	.326	.088	.089
conductcloseoutactivities	.506	.201	-.492	.334	.305	.188
followupandexpediteorders	.220	.146	-.060	.100	<b>.604</b>	.194
resolvedeliveryreceivingprobs	.204	.176	-.180	.135	.560	.196
maintaininventory	.040	.324	-.073	-.044	<b>.685</b>	-.106
designinternaldistributechannel	.083	.318	-.164	-.058	<b>.731</b>	-.056
accountforassets	.001	.520	-.108	.018	.406	-.029
establishwarehouseshipprocess	.096	.477	-.162	.181	<b>.603</b>	.165
selectmethdisposalequipmaterial	.154	<b>.899</b>	-.142	.112	.167	.128
disposesurplusequipmaterials	.202	<b>.918</b>	-.156	.098	.264	.133
facilitatemovementofgoods	.123	.280	-.267	.201	.596	.056
establishmissionvisionvalues	.229	.158	-.227	.354	-.032	.475
upholdpromotmissionvisionvalues	.298	.145	-.169	.347	.058	<b>.630</b>
conductvalueanalyses	.479	.217	-.285	.584	.065	.337
implementgoalobjectivemeasures	.191	.133	-.123	.495	.094	.494
monitorlegislativetrendslaws	.055	.054	-.110	<b>.601</b>	.158	.268
conductbusinessanalyses	.363	.046	-.188	<b>.618</b>	-.016	.101
analyzeeconmictrendcondition	.287	.099	-.222	<b>.691</b>	.204	.249
conductcostbenefitacquisition	.401	-.009	-.311	<b>.628</b>	.174	.231

implementprocessimproveplan	.376	.088	-.301	<b>.668</b>	.181	.198
planimplementprocurestrategy	.256	.131	-.370	<b>.845</b>	.145	.111
formprocurecontingencyplan	.321	.357	-.339	.435	.303	.279
developstaffsuccessionplan	.210	.163	-.203	.378	.082	.256

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Twenty-five factors have eigenvalues above 1.0.

## Appendix K

### Factor Analysis by Job Position

#### Both Perform and Manage Factor Analysis

#### Procurement Manager

	Factor					
	1	2	3	4	5	6
designmaintainopsform	.198	.217	-.146	.187	-.542	.122
implementautomatedprocure	.169	.090	-.163	.357	-.394	.254
administerprocurementcard	.107	-.103	-.225	.244	-.291	.145
administereprocurement	.290	.111	-.169	.247	-.337	.054
implementstandardprocess	.162	.121	-.179	.298	-.417	.170
implementoperatingworkpolicy	.290	.218	-.023	.370	<b>-.609</b>	.115
interpretoliciesandprocedures	.236	.151	-.007	.311	-.544	.194
establishcooperativeprocprogram	.264	.384	-.126	.248	-.360	.278
implementsustainableprocurement	.268	.207	-.237	.293	-.216	.298
auditprocurementprocess	.244	.137	-.210	.294	-.545	.219
preparedepartmentbudget	.094	-.174	-.114	.163	-.225	.021
managedepartmentpersonnel	.236	.146	.069	.305	<b>-.627</b>	.062
trainpurchasingpersonnel	.144	.140	.044	.245	<b>-.633</b>	.033
utilizeautomprocurementsystem	.191	.181	-.174	.287	-.423	.304
utilizeaneprocurementsystem	.327	.149	-.142	.251	-.306	.209
ensurecomplianceanddiversity	.248	.255	-.142	.405	-.230	.356
ensurecomplianceandproc	.212	.328	-.278	.531	-.281	.277
procurementcomplianceandlaw	.343	.329	-.267	.393	-.546	.331
conductmarketresearch	.421	.383	-.128	.475	-.346	.494
recommendbuydecision	.371	.198	-.282	.482	-.300	.440
usehistoricalinfofordecisions	.286	.389	-.073	.421	-.269	.438
analyzeeconomicconditions	.241	.310	-.142	.481	-.187	.544
identifysourceofsupplies	.332	.347	-.352	.404	-.529	.530
selectmethodofprocurement	.270	.429	-.210	.227	-.525	.473
developsolicitationdocument	.421	.590	-.208	.255	-.388	.397
reviewsolicitationdocument	.421	.518	-.153	.322	-.503	.205
selectcontracttype	.468	.473	-.122	.256	-.511	.494
solicitcompetitivequote	.409	.411	-.349	.058	<b>-.654</b>	.561
solicitcompetitivebids	.497	<b>.722</b>	-.170	.080	-.614	.411
solicitcompetitiveproposals	.487	<b>.754</b>	-.084	.074	-.574	.344
ensuretransparentprocesses	.444	.561	-.114	.265	<b>-.672</b>	.320

identifyevaluationmethodology	.554	<b>.724</b>	-.180	.138	-.366	.325
conductprebidconferences	.438	<b>.760</b>	-.155	.110	-.456	.426
prepareandissueaddenda	.475	<b>.809</b>	-.153	.143	-.566	.413
analyzeevaluatesolicitations	.432	<b>.798</b>	-.138	.111	-.480	.420
preparerecommendationaward	.477	<b>.748</b>	-.189	.206	-.442	.381
respondprotestsandinquiries	.359	.598	-.097	.429	-.322	.160
selectpaymentmethod	.467	.505	-.328	.318	-.285	.474
reviewsuppliersamples	.304	.593	-.362	.282	-.363	.508
preparecontracts	.475	<b>.686</b>	-.158	.230	-.313	.200
conductpostawarddebrief	.496	<b>.698</b>	-.157	.373	-.230	.338
mitigateriskthruconditions	.433	<b>.645</b>	-.058	.410	-.216	.149
selectnegotiationmembers	<b>.705</b>	.405	-.186	.321	-.219	.273
preparenegotiationstrategy	<b>.878</b>	.347	-.048	.217	-.177	.132
conductnegotiations	<b>.975</b>	.343	-.023	.191	-.225	.094
documentnegotiationprocess	<b>.912</b>	.423	-.089	.274	-.240	.131
conductpostawardconference	.409	.493	-.312	.265	-.110	.300
evaluatesupplierperformance	.357	.440	-.258	.258	-.150	.499
monitorsuppliercompliance	.437	.555	-.239	.254	-.146	.435
modifycontracts	.501	<b>.615</b>	-.153	.372	-.272	.361
remediatesuppliernoncompliance	.579	<b>.731</b>	-.104	.373	-.261	.289
resolvedisputes	.615	<b>.661</b>	-.080	.422	-.139	.153
terminatecontracts	<b>.627</b>	.622	-.059	.403	-.118	.139
conductcloseoutactivities	.434	.574	-.283	.340	-.188	.307
followupandexpediteorders	.199	.179	-.438	.251	-.303	<b>.657</b>
resolvedeliveryreceivingprobs	.241	.224	-.445	.328	-.205	.575
maintaininventory	-.117	.012	<b>-.614</b>	.062	.122	.291
designinternaldistributechannel	.173	.034	<b>-.601</b>	.154	-.070	.441
accountforassets	.035	.064	<b>-.641</b>	.128	.086	.317
establishwarehouseshipprocess	.057	-.026	<b>-.728</b>	.065	-.041	.179
selectmethdisposalequipmaterial	.140	.089	<b>-.890</b>	.182	-.239	-.044
disposesurplusequipmaterials	.135	.087	<b>-.917</b>	.137	-.203	.008
facilitatemovementofgoods	.173	.127	<b>-.713</b>	.178	-.081	.342
establishmissionvisionvalues	.357	.068	-.228	<b>.638</b>	-.373	-.018
upholdpromotmissionvisionvalues	.413	.214	-.140	.521	-.571	.212
conductvalueanalyses	.286	.143	-.223	<b>.632</b>	-.371	.330
implementgoalobjectivemeasures	.340	.170	-.223	<b>.692</b>	-.580	.171
monitorlegislativetrendslaws	.196	.116	-.277	<b>.728</b>	-.348	.254
conductbusinessanalyses	.302	.061	-.136	<b>.659</b>	-.178	.185
analyzeeconmictrendcondition	.239	.168	-.098	<b>.698</b>	-.259	.386
conductcostbenefitacquisition	.349	.186	-.276	<b>.672</b>	-.370	.379



implementprocessimproveplan	.308	.164	-.152	<b>.658</b>	-.342	.105
planimplementprocurestrategy	.289	.226	-.127	<b>.728</b>	-.257	.242
formprocurecontingencyplan	.343	.234	-.062	<b>.621</b>	-.386	.075
developstaffsuccessionplan	.336	.231	-.217	.583	-.318	.153

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Seventeen factors have eigenvalues above 1.0.

## Appendix L

### Factor Analysis by Job Position

#### Manage Factor Analysis – CPO

	Factor					
	1	2	3	4	5	6
designmaintainopsform	.421	.202	.170	.257	.439	-.095
implementautomatedprocure	.326	.119	.127	.244	.439	-.032
administerprocurementcard	.281	.203	.220	.304	.422	-.046
administereprocurement	.387	.249	.187	.367	.496	-.181
implementstandardprocess	.402	.185	.234	.314	.534	-.025
implementoperatingworkpolicy	.243	.183	.257	.178	.587	.070
interpretpoliciesandprocedures	.182	.146	.252	.112	.487	.081
establishcooperativeprocprogram	.324	.190	.203	.288	.418	-.104
implementsustainableprocurement	.371	.328	.168	.409	.494	-.222
auditprocurementprocess	.300	.129	.264	.177	.513	-.056
preparedepartmentbudget	.074	.127	.245	.062	.385	.227
managedepartmentpersonnel	.117	.079	.131	-.025	.397	.082
trainpurchasingpersonnel	.186	.168	.128	.113	.547	.031
utilizeautomprocurementsystem	.397	.275	.238	.372	.520	-.079
utilizeaneprocurementsystem	.391	.272	.175	.432	.526	-.121
ensurecomplianceanddiversity	.413	.278	.206	.407	.419	-.206
ensurecomplianceandproc	.478	.365	.161	.460	.473	-.322
procurementcomplianceandlaw	.481	.221	.271	.329	.548	-.056
conductmarketresearch	.468	.298	.254	.465	.499	-.348
recommendbuydecision	.411	.317	.214	.383	.511	-.240
usehistoricalinfofordecisions	.485	.267	.274	.389	.492	-.321
analyzeeconomicconditions	.460	.242	.338	.381	.427	-.298
identifysourceofsupplies	.587	.355	.262	.436	.498	-.258
selectmethodofprocurement	<b>.610</b>	.370	.263	.392	.535	-.120
developsolicitationdocument	<b>.698</b>	.251	.257	.365	.505	-.002
reviewsolicitationdocument	.486	.251	.310	.228	.515	-.021
selectcontracttype	.579	.378	.214	.422	.496	-.201
solicitcompetitivequote	<b>.728</b>	.284	.228	.454	.316	-.242
solicitcompetitivebids	<b>.851</b>	.280	.218	.421	.346	-.181
solicitcompetitiveproposals	<b>.831</b>	.273	.216	.407	.304	-.088
ensuretransparentprocesses	<b>.689</b>	.183	.274	.273	.416	-.028

identify evaluation methodology	<b>.723</b>	.200	.246	.437	.392	-.038
conduct pre bid conferences	<b>.790</b>	.177	.284	.413	.351	.014
Prepare and issue addenda	<b>.817</b>	.238	.239	.490	.359	-.064
analyze evaluate solicitations	<b>.829</b>	.199	.222	.399	.361	-.058
prepare recommendation award	<b>.718</b>	.133	.188	.367	.314	-.002
respond protests and inquiries	.376	.035	.260	.107	.192	.259
Select payment method	.557	.294	.285	.521	.366	-.032
Review suppliers samples	.447	.330	.264	.484	.324	-.117
Prepare contracts	<b>.610</b>	.178	.271	.357	.361	.116
Conduct post award debrief	.590	.293	.310	.483	.397	.005
mitigate risk thru terms conditions	.448	.157	.301	.244	.356	.141
Select negotiation members	.414	.172	.256	.433	.307	.270
Prepare negotiation strategy	.387	.202	.304	.438	.330	.274
Conduct negotiations	.406	.175	.324	.415	.341	.201
document negotiation process	.548	.182	.329	.526	.334	.161
conduct post award conference	.358	.307	.265	<b>.681</b>	.254	-.109
evaluate supplier performance	.311	.316	.170	<b>.770</b>	.207	-.092
Monitor supplier compliance	.421	.303	.201	<b>.759</b>	.305	-.119
Modify contracts	.505	.141	.227	.500	.303	.121
remediate supplier non compliance	.420	.188	.362	.455	.333	.176
Resolved disputes	.354	.128	.395	.331	.219	.329
Terminate contracts	.473	.083	.320	.357	.203	.284
Conduct close out activities	.361	.354	.296	<b>.738</b>	.213	-.081
Follow up and expedite orders	.272	.548	.195	.493	.189	-.106
resolved delivery receiving probs	.261	<b>.604</b>	.184	.479	.236	-.129
Maintain inventory	.157	<b>.773</b>	.157	.243	.209	-.035
design internal distribute channel	.129	<b>.754</b>	.132	.177	.224	-.045
Account for assets	.161	<b>.671</b>	.198	.282	.239	-.059
establish warehouse ship process	.095	<b>.728</b>	.146	.161	.174	.037
select method dispose equip material	.218	<b>.649</b>	.212	.171	.204	-.067
dispose surplus equip materials	.226	<b>.653</b>	.162	.215	.203	-.158
Facilitate movement of goods	.127	<b>.755</b>	.143	.233	.109	-.100
establish mission vision values	.075	.006	.376	-.024	.182	.327
uphold promote mission vision values	.166	.057	.425	.040	.190	.331
Conduct value analyses	.316	.234	.549	.260	.387	.206
implement goal objective measures	.170	.080	.591	.044	.264	.394
monitor legislative trends laws	.150	.104	<b>.602</b>	.121	.264	.267
Conduct business analyses	.248	.205	<b>.639</b>	.250	.197	.046
analyze economic trend condition	.242	.163	<b>.673</b>	.211	.241	-.071
conduct cost benefit acquisition	.328	.237	<b>.665</b>	.358	.234	-.113

implementprocessimproveplan	.193	.182	<b>.675</b>	.183	.225	.091
planimplementprocurestrategy	.246	.203	<b>.688</b>	.203	.231	.033
formprocurecontingencyplan	.211	.190	<b>.643</b>	.183	.236	.094
developstaffsuccessionplan	.061	.142	.589	.088	.162	.223

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Sixteen factors have eigenvalues above 1.0.

## Appendix M

### Factor Analysis by Job Position

#### Both Perform and Manage Factor Analysis – CPO

	Factor					
	1	2	3	4	5	6
designmaintainopsform	.439	.187	.279	-.139	.186	.354
implementautomatedprocure	.190	.112	.241	-.206	.115	.319
administerprocurementcard	.209	.115	.332	-.174	.195	.297
administereprocurement	.270	.052	.304	-.127	.288	.422
implementstandardprocess	.410	.119	.180	-.200	.212	.426
implementoperatingworkpolicy	.182	.253	.240	-.185	.057	.597
interpretpoliciesandprocedures	.171	.198	.108	-.157	.071	.480
establishcooperativeprocprogram	.307	.257	.256	-.263	.097	.376
implementsustainableprocurement	.222	.204	.308	-.183	.341	.378
auditprocurementprocess	.266	.193	.287	-.207	.197	.504
preparedepartmentbudget	.012	.304	.217	-.220	-.061	.397
managedepartmentpersonnel	.069	.208	.095	-.159	-.126	.473
trainpurchasingpersonnel	.138	.196	.124	-.143	.054	.517
utilizeautomprocurementsystem	.343	.142	.224	-.192	.235	.357
utilizeaneprocurementsystem	.301	.149	.258	-.210	.246	.397
ensurecomplianceanddiversity	.290	.192	.228	-.240	.308	.377
ensurecomplianceandproc	.290	.213	.263	-.177	.400	.396
procurementcomplianceandlaw	.469	.164	.289	-.256	.274	.454
conductmarketresearch	.534	.281	.281	-.314	.449	.386
recommendbuydecision	.453	.283	.272	-.295	.412	.377
usehistoricalinfofordecisions	.519	.276	.284	-.213	.352	.414
analyzeeconomicconditions	.422	.462	.339	-.284	.292	.378
identifysourceofsupplies	<b>.634</b>	.120	.330	-.244	.491	.345
selectmethodofprocurement	<b>.694</b>	.085	.307	-.248	.403	.390
developsolicitationdocument	<b>.722</b>	.122	.243	-.333	.235	.305
reviewsolicitationdocument	.558	.144	.191	-.204	.129	.317
selectcontracttype	<b>.663</b>	.135	.290	-.301	.405	.384
solicitcompetitivequote	<b>.691</b>	.107	.297	-.321	.504	.184
solicitcompetitivebids	<b>.840</b>	.134	.318	-.381	.343	.225
solicitcompetitiveproposals	<b>.833</b>	.170	.274	-.422	.220	.194
ensuretransparentprocesses	<b>.705</b>	.199	.265	-.341	.252	.310
identifyevaluationmethodology	<b>.693</b>	.214	.179	-.467	.292	.198

conductprebidconferences	<b>.770</b>	.265	.283	-.532	.245	.222
prepareandissueaddenda	<b>.807</b>	.206	.275	-.495	.256	.196
analyzeevaluatesolicitations	<b>.798</b>	.183	.292	-.509	.226	.225
preparerecommendationaward	<b>.696</b>	.217	.222	-.502	.248	.217
respondprotestsandinquiries	.254	.321	.125	-.421	-.055	.314
selectpaymentmethod	<b>.614</b>	.283	.295	-.444	.432	.287
reviewsuppliersamples	.508	.202	.268	-.354	.469	.262
preparecontracts	.571	.182	.207	-.469	.190	.215
conductpostawarddebrief	.497	.309	.194	-.570	.272	.178
mitigateriskthrutermsconditions	.375	.388	.174	-.451	.068	.307
selectnegotiationmembers	.363	.293	.182	<b>-.669</b>	.131	.188
preparenegotiationstrategy	.284	.299	.141	<b>-.647</b>	.091	.215
conductnegotiations	.335	.324	.166	<b>-.678</b>	.098	.254
documentnegotiationprocess	.454	.302	.204	<b>-.701</b>	.187	.207
conductpostawardconference	.340	.243	.252	-.530	.418	.207
evaluatesupplierperformance	.386	.118	.328	-.553	.557	.200
monitorsuppliercompliance	.472	.109	.391	-.511	.524	.221
modifycontracts	.423	.285	.205	<b>-.652</b>	.246	.242
remediatesuppliernoncompliance	.311	.316	.245	<b>-.724</b>	.198	.241
resolvedisputes	.233	.399	.233	<b>-.759</b>	.072	.261
terminatecontracts	.262	.391	.210	<b>-.702</b>	.033	.239
conductcloseoutactivities	.384	.266	.262	<b>-.625</b>	.480	.180
followupandexpediteorders	.431	.089	.375	-.277	<b>.723</b>	.168
resolvedeliveryreceivingprobs	.375	.076	.392	-.212	<b>.743</b>	.155
maintaininventory	.199	.165	.467	-.178	.562	.140
designinternaldistributechannel	.238	.274	.473	-.260	.523	.234
accountforassets	.223	.183	.514	-.250	.440	.244
establishwarehouseshipprocess	.160	.251	.473	-.217	.464	.229
selectmethdisposalequipmaterial	.271	.185	<b>.913</b>	-.186	.248	.250
disposesurplusequipmaterials	.311	.131	<b>.897</b>	-.181	.289	.246
facilitatemovementofgoods	.273	.233	.514	-.284	.583	.187
establishmissionvisionvalues	.028	.577	.141	-.252	-.136	.328
upholdpromotmissionvisionvalues	.163	.534	.198	-.279	-.009	.274
conductvalueanalyses	.315	.537	.200	-.319	.157	.244
implementgoalobjectivemeasures	.120	<b>.639</b>	.092	-.307	-.034	.355
monitorlegislativetrendslaws	.091	<b>.632</b>	.149	-.214	.019	.228
conductbusinessanalyses	.143	<b>.708</b>	.151	-.348	.061	.171
analyzeeconmictrendcondition	.161	<b>.786</b>	.237	-.278	.144	.188
conductcostbenefitacquisition	.239	<b>.701</b>	.189	-.333	.189	.146
implementprocessimproveplan	.100	<b>.707</b>	.107	-.293	.107	.171

planimplementprocurestrategy	.174	<b>.728</b>	.159	-.312	.118	.183
formprocurecontingencyplan	.079	<b>.652</b>	.102	-.268	.014	.218
developstaffsuccessionplan	-.113	<b>.611</b>	.089	-.183	-.035	.185

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Sixteen factors have eigenvalues above 1.0.

## Appendix N

### Factor Analysis by Organization Size

#### Both Perform and Manage Factor Analysis

#### Small Organizations

	Factor					
	1	2	3	4	5	6
designmaintainopsform	.405	-.287	.358	-.216	.228	.507
implementautomatedprocure	.264	-.247	.262	-.160	.176	.437
administerprocurementcard	.188	-.297	.246	-.162	.136	.308
administereprocurement	.295	-.313	.361	-.245	.295	.449
implementstandardprocess	.388	-.233	.307	-.243	.210	.537
implementoperatingworkpolicy	.291	-.240	.434	-.306	.041	<b>.728</b>
interpretoliciesandprocedures	.304	-.177	.435	-.346	.083	<b>.662</b>
establishcooperativeprocprogram	.404	-.204	.322	-.290	.139	.426
implementsustainableprocurement	.282	-.334	.326	-.269	.319	.444
auditprocurementprocess	.343	-.302	.457	-.354	.162	<b>.601</b>
preparedepartmentbudget	.143	-.283	.408	-.278	-.030	.494
managedepartmentpersonnel	.203	-.208	.411	-.283	-.058	<b>.678</b>
trainpurchasingpersonnel	.203	-.201	.369	-.278	.051	<b>.627</b>
utilizeautomprocurementsystem	.346	-.227	.230	-.224	.240	.426
utilizeaneprocurementsystem	.355	-.249	.339	-.291	.267	.450
ensurecomplianceanddiversity	.305	-.293	.334	-.353	.293	.376
ensurecomplianceandproc	.308	-.319	.330	-.260	.324	.458
procurementcomplianceandlaw	.593	-.303	.393	-.442	.313	<b>.609</b>
conductmarketresearch	.493	-.314	.461	-.434	.396	.395
recommendbuydecision	.495	-.364	.498	-.404	.400	.484
usehistoricalinfofordecisions	.526	-.288	.478	-.406	.333	.452
analyzeeconomicconditions	.414	-.251	.514	-.387	.354	.377
identifysourceofsupplies	<b>.623</b>	-.402	.390	-.427	.528	.469
selectmethodofprocurement	<b>.727</b>	-.320	.330	-.482	.386	.480
developsolicitationdocument	<b>.794</b>	-.244	.371	-.539	.280	.477
reviewsolicitationdocument	<b>.749</b>	-.202	.377	-.483	.212	.497
selectcontracttype	<b>.729</b>	-.279	.393	-.546	.358	.462
solicitcompetitivequote	<b>.723</b>	-.362	.261	-.430	.505	.264
solicitcompetitivebids	<b>.894</b>	-.315	.355	-.552	.258	.321
solicitcompetitiveproposals	<b>.925</b>	-.261	.363	-.568	.218	.336
ensuretransparentprocesses	<b>.793</b>	-.266	.312	-.529	.242	.441



identifyevaluationmethodology	<b>.666</b>	-.232	.427	-.662	.161	.310
conductprebidconferences	<b>.767</b>	-.345	.380	-.676	.238	.255
prepareandissueaddenda	<b>.867</b>	-.262	.326	-.601	.218	.280
analyzeevaluatesolicitations	<b>.841</b>	-.304	.336	-.653	.223	.372
preparerecommendationaward	<b>.799</b>	-.303	.436	-.673	.214	.383
respondprotestsandinquiries	.545	-.215	.438	<b>-.626</b>	.040	.462
selectpaymentmethod	.465	-.300	.364	-.540	.324	.277
reviewsuppliersamples	.516	-.329	.330	-.492	.400	.298
preparecontracts	<b>.738</b>	-.301	.307	-.581	.249	.386
conductpostawarddebrief	.569	-.229	.446	<b>-.637</b>	.241	.250
mitigateriskthruconditions	.512	-.234	.465	<b>-.616</b>	.117	.398
selectnegotiationmembers	.446	-.236	.463	<b>-.723</b>	.158	.316
preparenegotiationstrategy	.378	-.214	.458	<b>-.789</b>	.088	.287
conductnegotiations	.448	-.254	.537	<b>-.779</b>	.124	.366
documentnegotiationprocess	.526	-.290	.457	<b>-.774</b>	.117	.333
conductpostawardconference	.396	-.226	.348	<b>-.658</b>	.240	.142
evaluatesupplierperformance	.369	-.332	.342	<b>-.615</b>	.443	.187
monitorsuppliercompliance	.503	-.318	.298	<b>-.610</b>	.395	.207
modifycontracts	.568	-.211	.288	<b>-.745</b>	.218	.313
remediatesuppliernoncompliance	.476	-.234	.342	<b>-.784</b>	.214	.290
resolvedisputes	.432	-.261	.384	<b>-.813</b>	.189	.318
terminatecontracts	.497	-.246	.461	<b>-.805</b>	.134	.395
conductcloseoutactivities	.413	-.283	.383	<b>-.667</b>	.275	.192
followupandexpediteorders	.372	-.485	.174	-.296	<b>.796</b>	.179
resolvedeliveryreceivingprobs	.336	-.462	.183	-.272	<b>.826</b>	.189
maintaininventory	.100	-.501	.210	-.150	<b>.660</b>	.064
designinternaldistributechannel	.146	-.517	.349	-.283	<b>.646</b>	.148
accountforassets	.140	-.652	.388	-.269	.544	.194
establishwarehouseshipprocess	.122	-.540	.335	-.211	.564	.149
selectmethdisposalequipmaterial	.285	<b>-.960</b>	.300	-.277	.456	.317
disposesurplusequipmaterials	.306	<b>-.918</b>	.249	-.251	.487	.277
facilitatemovementofgoods	.237	-.585	.294	-.274	<b>.708</b>	.193
establishmissionvisionvalues	.231	-.264	<b>.647</b>	-.383	.098	.636
upholdpromotmissionvisionvalues	.389	-.329	.585	-.454	.267	<b>.626</b>
conductvalueanalyses	.315	-.391	<b>.719</b>	-.416	.235	.461
implementgoalobjectivemeasures	.282	-.328	<b>.725</b>	-.374	.157	.653
monitorlegislativetrendslaws	.261	-.298	<b>.670</b>	-.411	.165	.504
conductbusinessanalyses	.293	-.314	<b>.772</b>	-.401	.109	.343
analyzeeconmictrendcondition	.335	-.308	<b>.812</b>	-.488	.210	.342
conductcostbenefitacquisition	.342	-.385	<b>.802</b>	-.433	.230	.380

implementprocessimproveplan	.196	-.235	<b>.782</b>	-.338	.142	.445
planimplementprocurestrategy	.280	-.247	<b>.775</b>	-.448	.223	.405
formprocurecontingencyplan	.227	-.255	<b>.725</b>	-.394	.149	.423
developstaffsuccessionplan	.133	-.228	<b>.651</b>	-.338	.055	.493

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Twelve factors have eigenvalues above 1.0.

## Appendix O

### Factor Analysis by Organization Size

#### Perform Factor Analysis

#### Medium Organizations

	Factor					
	1	2	3	4	5	6
designmaintainopsform	.411	.117	-.214	-.109	-.305	.229
implementautomatedprocure	.257	.163	-.086	-.159	-.184	.103
administerprocurementcard	.166	.055	-.135	-.238	-.103	.071
administereprocurement	.346	.144	-.179	-.170	-.152	.138
implementstandardprocess	.479	.186	-.237	-.184	-.254	.302
implementoperatingworkpolicy	.410	.244	-.222	-.147	-.251	.243
interpretoliciesandprocedures	.574	.125	-.283	-.136	-.455	.389
establishcooperativeprocprogram	.349	.228	-.233	-.208	-.224	.311
implementsustainableprocurement	.243	.218	-.173	-.282	-.141	.169
auditprocurementprocess	.444	.163	-.171	-.231	-.229	.295
preparedepartmentbudget	-.060	.153	.039	-.086	.095	-.018
managedepartmentpersonnel	.015	.165	-.044	-.097	.061	.054
trainpurchasingpersonnel	.410	.205	-.237	-.139	-.253	.294
utilizeautomprocurementsystem	<b>.606</b>	.143	-.284	-.155	-.402	.275
utilizeaneprocurementsystem	.493	.106	-.222	-.195	-.303	.206
ensurecompliancediversity	.453	.232	-.212	-.167	-.252	.287
ensurecompliancesustainproc	.414	.293	-.249	-.286	-.208	.232
procurementcomplianceandlaw	<b>.695</b>	.132	-.344	-.216	-.545	.393
conductmarketresearch	<b>.648</b>	.254	-.364	-.246	-.393	.368
recommendbuydecision	<b>.606</b>	.232	-.353	-.251	-.413	.354
usehistoricalinfofordecisions	<b>.701</b>	.215	-.368	-.258	-.464	.387
analyzeeconomicconditions	.583	.323	-.381	-.201	-.406	.370
identifysourceofsupplies	<b>.746</b>	.129	-.391	-.205	-.653	.426
selectmethodofprocurement	<b>.727</b>	.068	-.393	-.214	-.674	.415
developsolicitationdocument	<b>.669</b>	.104	-.399	-.218	-.706	.466
reviewsolicitationdocument	<b>.662</b>	.133	-.428	-.215	-.713	.467
selectcontracttype	<b>.693</b>	.161	-.424	-.252	-.649	.459
solicitcompetitivequote	.573	.132	-.369	-.259	<b>-.787</b>	.445
solicitcompetitivebids	.502	.159	-.429	-.185	<b>-.940</b>	.505
solicitcompetitiveproposals	.454	.166	-.439	-.169	<b>-.887</b>	.511
ensuretransparentprocesses	.574	.132	-.438	-.166	<b>-.891</b>	.549

identifyevaluationmethodology	.498	.183	-.452	-.156	<b>-713</b>	.536
conductprebidconferences	.519	.160	-.460	-.152	<b>-761</b>	.552
prepareandissueaddenda	.517	.139	-.428	-.170	<b>-806</b>	.521
analyzeevaluatesolicitations	.541	.129	-.469	-.171	<b>-815</b>	.528
preparerecommendationaward	.500	.144	-.446	-.133	<b>-781</b>	.545
respondprotestsandinquiries	.472	.234	-.416	-.156	-.489	.522
selectpaymentmethod	.495	.225	-.378	-.187	-.326	.491
reviewsuppliersamples	.550	.296	-.411	-.280	-.449	.517
preparecontracts	.537	.155	-.505	-.138	<b>-705</b>	.565
conductpostawarddebrief	.451	.229	-.459	-.093	-.475	.573
mitigateriskthruconditions	.461	.250	-.426	-.133	-.408	.501
selectnegotiationmembers	.250	.224	-.542	-.124	-.223	.301
preparenegotiationstrategy	.253	.244	<b>-712</b>	-.104	-.270	.419
conductnegotiations	.320	.177	<b>-921</b>	-.165	-.363	.469
documentnegotiationprocess	.305	.147	<b>-855</b>	-.163	-.374	.474
conductpostawardconference	.350	.217	-.428	-.086	-.349	.556
evaluatesupplierperformance	.409	.258	-.434	-.173	-.382	.587
monitorsuppliercompliance	.440	.198	-.417	-.153	-.504	<b>.675</b>
modifycontracts	.411	.168	-.485	-.178	-.496	<b>.769</b>
remediatesuppliernoncompliance	.357	.222	-.451	-.105	-.461	<b>.764</b>
resolvedisputes	.351	.216	-.482	-.172	-.427	<b>.812</b>
terminatecontracts	.376	.254	-.472	-.142	-.402	<b>.813</b>
conductcloseoutactivities	.342	.269	-.382	-.085	-.393	<b>.650</b>
followupandexpediteorders	.474	.169	-.263	-.298	-.355	.358
resolvedeliveryreceivingprobs	.490	.200	-.309	-.399	-.401	.423
maintaininventory	.167	.167	-.078	-.415	-.082	.050
designinternaldistributechannel	.186	.155	-.108	-.400	-.018	.052
accountforassets	.150	.230	-.088	-.416	-.058	.074
establishwarehouseshipprocess	.148	.200	-.026	-.454	-.055	.025
selectmethdisposalequipmaterial	.176	.233	-.136	<b>-809</b>	-.147	.197
disposesurplusequipmaterials	.178	.187	-.184	<b>-828</b>	-.169	.235
facilitatemovementofgoods	.222	.253	-.139	-.450	-.064	.142
establishmissionvisionvalues	.142	.391	-.153	-.161	-.019	.107
upholdpromotmissionvisionvalues	.590	.378	-.386	-.241	-.397	.480
conductvalueanalyses	.487	.583	-.391	-.197	-.284	.436
implementgoalobjectivemeasures	.356	.559	-.236	-.210	-.189	.257
monitorlegislativetrendslaws	.332	<b>.629</b>	-.297	-.257	-.189	.315
conductbusinessanalyses	.259	<b>.686</b>	-.252	-.218	-.050	.239
analyzeeconmictrendcondition	.323	<b>.703</b>	-.283	-.205	-.175	.352
conductcostbenefitacquisition	.302	<b>.693</b>	-.331	-.225	-.143	.298

implementprocessimproveplan	.223	<b>.620</b>	-.221	-.215	-.117	.250
planimplementprocurestrategy	.211	<b>.661</b>	-.195	-.256	-.120	.259
formprocurecontingencyplan	.210	.560	-.140	-.233	-.125	.164
developstaffsuccessionplan	.025	.418	-.019	-.176	.019	.052

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Fifteen factors have eigenvalues above 1.0.

## Appendix P

### Factor Analysis by Organization Size

#### Manage Factor Analysis

#### Medium Organizations

	Factor					
	1	2	3	4	5	6
designmaintainopsform	.427	-.238	.266	.480	-.343	-.141
implementautomatedprocure	.300	-.177	.182	.425	-.234	-.105
administerprocurementcard	.318	-.185	.257	.484	-.260	-.169
administereprocurement	.325	-.203	.275	.528	-.351	-.239
implementstandardprocess	.329	-.164	.306	.517	-.258	-.070
implementoperatingworkpolicy	.216	-.120	.286	.477	-.181	-.098
interpretoliciesandprocedures	.139	-.069	.278	.380	-.112	-.071
establishcooperativeprocprogram	.339	-.204	.264	.482	-.307	-.132
implementsustainableprocurement	.334	-.283	.218	.572	-.356	-.331
auditprocurementprocess	.348	-.208	.305	.529	-.273	-.076
preparedepartmentbudget	.076	-.151	.241	.299	-.173	-.153
managedepartmentpersonnel	.170	-.168	.197	.338	-.099	-.082
trainpurchasingpersonnel	.244	-.192	.227	.461	-.230	-.091
utilizeautomprocurementsystem	.428	-.267	.281	<b>.639</b>	-.374	-.225
utilizeaneprocurementsystem	.352	-.253	.221	<b>.619</b>	-.357	-.214
ensurecomplianceanddiversity	.495	-.384	.306	<b>.650</b>	-.438	-.327
ensurecomplianceandproc	.436	-.389	.226	<b>.646</b>	-.366	-.372
procurementcomplianceandlaw	.432	-.309	.288	<b>.600</b>	-.291	-.091
conductmarketresearch	.474	-.333	.299	<b>.697</b>	-.388	-.373
recommendbuydecision	.411	-.337	.305	<b>.650</b>	-.371	-.320
usehistoricalinfofordecisions	.432	-.327	.301	<b>.641</b>	-.285	-.297
analyzeeconomicconditions	.454	-.296	.346	<b>.649</b>	-.329	-.309
identifysourceofsupplies	.548	-.365	.320	<b>.675</b>	-.384	-.263
selectmethodofprocurement	.533	-.337	.277	<b>.617</b>	-.322	-.250
developsolicitationdocument	<b>.659</b>	-.302	.262	.562	-.415	-.139
reviewsolicitationdocument	.514	-.280	.340	.508	-.343	-.142
selectcontracttype	.579	-.369	.293	<b>.653</b>	-.377	-.315
solicitcompetitivequote	<b>.769</b>	-.393	.295	.501	-.403	-.300
solicitcompetitivebids	<b>.883</b>	-.405	.280	.488	-.387	-.271
solicitcompetitiveproposals	<b>.859</b>	-.348	.261	.439	-.387	-.203
ensuretransparentprocesses	<b>.690</b>	-.290	.299	.463	-.281	-.112

identifyevaluationmethodology	<b>.682</b>	-.227	.307	.492	-.511	-.162
conductprebidconferences	<b>.733</b>	-.229	.285	.475	-.483	-.144
prepareandissueaddenda	<b>.788</b>	-.267	.281	.500	-.505	-.162
analyzeevaluatesolicitations	<b>.750</b>	-.262	.270	.444	-.455	-.126
preparerecommendationaward	<b>.694</b>	-.234	.242	.399	-.451	-.095
respondprotestsandinquiries	.352	-.123	.339	.275	-.299	.027
selectpaymentmethod	.565	-.282	.385	.497	-.521	-.258
reviewsuppliersamples	.507	-.303	.368	.490	-.485	-.337
preparecontracts	.591	-.230	.305	.478	-.459	-.113
conductpostawarddebrief	.553	-.265	.357	.525	-.527	-.261
mitigateriskthruconditions	.432	-.241	.324	.435	-.339	-.066
selectnegotiationmembers	.396	-.189	.263	.360	<b>-.718</b>	-.193
preparenegotiationstrategy	.347	-.180	.311	.343	<b>-.711</b>	-.120
conductnegotiations	.342	-.161	.233	.321	<b>-.685</b>	-.080
documentnegotiationprocess	.453	-.198	.360	.456	<b>-.695</b>	-.138
conductpostawardconference	.313	-.248	.319	.392	-.554	-.397
evaluatesupplierperformance	.291	-.233	.241	.336	<b>-.601</b>	-.440
monitorsuppliercompliance	.389	-.237	.280	.423	<b>-.637</b>	-.422
modifycontracts	.494	-.271	.298	.403	-.592	-.235
remediatesuppliernoncompliance	.400	-.229	.361	.373	-.538	-.138
resolvedisputes	.329	-.142	.366	.219	-.508	.001
terminatecontracts	.420	-.188	.356	.288	-.556	-.061
conductcloseoutactivities	.350	-.215	.350	.379	-.591	-.473
followupandexpediteorders	.389	-.430	.329	.419	-.349	<b>-.639</b>
resolvedeliveryreceivingprobs	.333	-.442	.284	.365	-.335	<b>-.651</b>
maintaininventory	.218	-.535	.258	.319	-.216	<b>-.654</b>
designinternaldistributechannel	.253	-.517	.258	.342	-.188	<b>-.637</b>
accountforassets	.246	-.592	.272	.370	-.238	-.491
establishwarehouseshipprocess	.205	-.569	.237	.318	-.171	-.547
selectmethdisposalequipmaterial	.308	<b>-.928</b>	.273	.335	-.209	-.278
disposesurplusequipmaterials	.322	<b>-.916</b>	.246	.337	-.213	-.341
facilitatemovementofgoods	.251	<b>-.625</b>	.221	.300	-.203	-.591
establishmissionvisionvalues	.107	-.060	.400	.201	-.143	.003
upholdpromotmissionvisionvalues	.153	-.098	.359	.241	-.154	-.062
conductvalueanalyses	.324	-.248	.568	.383	-.370	-.178
implementgoalobjectivemeasures	.147	-.123	.598	.256	-.222	-.041
monitorlegislativetrendslaws	.113	-.106	.563	.228	-.163	-.072
conductbusinessanalyses	.275	-.227	<b>.674</b>	.354	-.313	-.163
analyzeeconmictrendcondition	.245	-.222	<b>.673</b>	.361	-.250	-.169
conductcostbenefitacquisition	.329	-.253	<b>.637</b>	.383	-.380	-.236

implementprocessimproveplan	.236	-.223	<b>.717</b>	.301	-.303	-.141
planimplementprocurestrategy	.262	-.249	<b>.677</b>	.314	-.276	-.127
formprocurecontingencyplan	.249	-.292	<b>.628</b>	.307	-.245	-.154
developstaffsuccessionplan	.112	-.187	.568	.229	-.205	-.144

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Fourteen factors have eigenvalues above 1.0.



## Appendix Q

### Factor Analysis by Organization Size

#### Both Perform and Manage Factor Analysis

#### Large Organizations

	Factor					
	1	2	3	4	5	6
designmaintainopsform	.248	.231	-.142	-.141	-.531	.060
implementautomatedprocure	.075	.294	-.159	-.163	-.482	.049
administerprocurementcard	.075	.180	-.306	-.037	-.314	.156
administereprocurement	.192	.119	-.164	-.126	-.435	.201
implementstandardprocess	.329	.283	-.241	-.219	-.580	.184
implementoperatingworkpolicy	.158	.415	-.264	-.271	<b>-.616</b>	-.072
interpretoliciesandprocedures	.307	.343	-.192	-.319	<b>-.625</b>	.075
establishcooperativeprocprogram	.242	.294	-.202	-.341	-.393	.166
implementsustainableprocurement	.192	.304	-.274	-.234	-.319	.179
auditprocurementprocess	.236	.331	-.291	-.241	-.493	.220
preparedepartmentbudget	-.071	.369	-.118	-.116	-.343	-.123
managedepartmentpersonnel	.179	.462	-.044	-.249	<b>-.610</b>	-.019
trainpurchasingpersonnel	.211	.372	-.143	-.236	<b>-.655</b>	.044
utilizeautomprocurementsystem	.329	.302	-.213	-.283	-.543	.255
utilizeaneprocurementsystem	.293	.184	-.148	-.263	-.431	.247
ensurecomplianceanddiversity	.372	.320	-.191	-.325	-.438	.362
ensurecomplianceandproc	.286	.319	-.267	-.229	-.355	.285
procurementcomplianceandlaw	<b>.602</b>	.325	-.194	-.404	-.562	.350
conductmarketresearch	.576	.301	-.196	-.420	-.403	.499
recommendbuydecision	.441	.401	-.213	-.465	-.422	.453
usehistoricalinfofordecisions	.555	.315	-.204	-.407	-.534	.472
analyzeeconomicconditions	.461	.353	-.186	-.354	-.371	.450
identifysourceofsupplies	<b>.615</b>	.279	-.185	-.416	-.490	.519
selectmethodofprocurement	<b>.672</b>	.274	-.166	-.360	-.555	.436
developsolicitationdocument	<b>.752</b>	.194	-.127	-.420	-.465	.330
reviewsolicitationdocument	<b>.715</b>	.273	-.149	-.434	-.547	.258
selectcontracttype	<b>.727</b>	.246	-.110	-.431	-.461	.450
solicitcompetitivequote	<b>.787</b>	.095	-.158	-.310	-.245	.459
solicitcompetitivebids	<b>.861</b>	.120	-.078	-.370	-.177	.397
solicitcompetitiveproposals	<b>.858</b>	.142	-.080	-.476	-.239	.325
ensuretransparentprocesses	<b>.836</b>	.216	-.079	-.465	-.383	.343

identifyevaluationmethodology	<b>.747</b>	.233	-.099	-.465	-.306	.303
conductprebidconferences	<b>.808</b>	.227	-.121	-.510	-.296	.355
prepareandissueaddenda	<b>.872</b>	.155	-.066	-.497	-.187	.379
analyzeevaluatesolicitations	<b>.841</b>	.189	-.053	-.439	-.254	.335
preparerecommendationaward	<b>.797</b>	.255	-.076	-.449	-.269	.343
respondprotestsandinquiries	.493	.434	-.100	-.508	-.343	.206
selectpaymentmethod	.578	.345	-.192	-.404	-.266	.395
reviewsuppliersamples	.527	.307	-.210	-.381	-.223	.483
preparecontracts	<b>.728</b>	.257	-.089	-.525	-.297	.308
conductpostawarddebrief	<b>.626</b>	.305	-.204	-.515	-.219	.405
mitigateriskthruconditions	.539	.436	-.122	-.562	-.295	.220
selectnegotiationmembers	.352	.445	-.108	<b>-.710</b>	-.290	.115
preparenegotiationstrategy	.377	.404	-.066	<b>-.826</b>	-.270	.132
conductnegotiations	.465	.396	-.083	<b>-.857</b>	-.334	.110
documentnegotiationprocess	.523	.342	-.141	<b>-.841</b>	-.285	.210
conductpostawardconference	.406	.245	-.272	-.573	-.194	.536
evaluatesupplierperformance	.390	.193	-.294	-.416	-.200	<b>.620</b>
monitorsuppliercompliance	.488	.188	-.234	-.397	-.248	<b>.667</b>
modifycontracts	<b>.620</b>	.290	-.115	-.605	-.232	.447
remediatesuppliernoncompliance	.525	.317	-.216	<b>-.665</b>	-.231	.487
resolvedisputes	.526	.422	-.159	<b>-.745</b>	-.277	.379
terminatecontracts	.512	.405	-.122	<b>-.708</b>	-.222	.441
conductcloseoutactivities	.572	.280	-.275	-.555	-.205	<b>.652</b>
followupandexpediteorders	.380	.094	-.335	-.234	-.200	.560
resolvedeliveryreceivingprobs	.374	.141	-.389	-.209	-.219	.565
maintaininventory	.090	.082	-.404	.005	-.116	.328
designinternaldistributechannel	.113	.269	-.582	-.128	-.240	.250
accountforassets	.108	.233	-.579	-.115	-.258	.250
establishwarehousehipprocess	-.016	.097	-.536	.004	-.104	.117
selectmethdisposalequipmaterial	.061	.210	<b>-.881</b>	-.178	-.241	.055
disposesurplusequipmaterials	.061	.150	<b>-.887</b>	-.129	-.152	.038
facilitatemovementofgoods	.137	.135	-.579	-.083	-.168	.337
establishmissionvisionvalues	-.009	<b>.666</b>	-.102	-.321	-.358	-.156
upholdpromotmissionvisionvalues	.265	.581	-.165	-.395	-.489	.084
conductvalueanalyses	.350	.574	-.233	-.405	-.395	.290
implementgoalobjectivemeasures	.198	<b>.693</b>	-.133	-.397	-.473	.093
monitorlegislativetrendslaws	.159	<b>.706</b>	-.175	-.368	-.312	.115
conductbusinessanalyses	.179	<b>.788</b>	-.234	-.326	-.334	.100
analyzeeconmictrendcondition	.218	<b>.827</b>	-.207	-.348	-.302	.200
conductcostbenefitacquisition	.281	<b>.762</b>	-.225	-.404	-.285	.246

implementprocessimproveplan	.189	<b>.756</b>	-.179	-.344	-.323	.083
planimplementprocurestrategy	.237	<b>.784</b>	-.212	-.365	-.373	.119
formprocurecontingencyplan	.147	<b>.725</b>	-.197	-.314	-.343	.015
developstaffsuccessionplan	.011	<b>.647</b>	-.136	-.262	-.295	-.111

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Fourteen factors have eigenvalues above 1.0.

## Appendix R

### Factor Analysis by Organization Size

#### Manage Factor Analysis

#### Large Organizations

	Factor					
	1	2	3	4	5	6
designmaintainopsform	.371	.275	.309	.493	.232	-.128
implementautomatedprocure	.400	.339	.203	.536	.314	-.146
administerprocurementcard	.414	.362	.499	.558	.277	-.274
administereprocurement	.469	.350	.467	.611	.270	-.290
implementstandardprocess	.433	.402	.322	.622	.364	-.121
implementoperatingworkpolicy	.288	.332	.210	.501	.393	.062
interpretoliciesandprocedures	.217	.320	.105	.478	.271	.152
establishcooperativeprocprogram	.362	.352	.272	.518	.248	-.239
implementsustainableprocurement	.497	.419	.472	.507	.280	-.260
auditprocurementprocess	.307	.424	.339	.531	.191	-.149
preparedepartmentbudget	.166	.318	.157	.306	.268	-.017
managedepartmentpersonnel	.294	.264	.019	.586	.260	.100
trainpurchasingpersonnel	.261	.260	.080	<b>.644</b>	.260	-.013
utilizeautomprocurementsystem	.463	.350	.376	.597	.317	-.223
utilizeaneprocurementsystem	.443	.276	.438	.547	.284	-.256
ensurecomplianceanddiversity	.433	.375	.408	.438	.316	-.338
ensurecomplianceandproc	.489	.363	.434	.497	.323	-.368
procurementcomplianceandlaw	.443	.417	.289	.563	.353	-.178
conductmarketresearch	.524	.441	.428	.552	.357	-.437
recommendbuydecision	.430	.424	.361	.571	.415	-.280
usehistoricalinfofordecisions	.554	.478	.346	.631	.385	-.405
analyzeeconomicconditions	<b>.608</b>	.503	.428	.501	.365	-.452
identifysourceofsupplies	.590	.393	.377	.528	.378	-.328
selectmethodofprocurement	<b>.625</b>	.419	.462	.572	.387	-.217
developsolicitationdocument	<b>.715</b>	.414	.407	.520	.431	-.138
reviewsolicitationdocument	.528	.332	.312	.500	.241	-.021
selectcontracttype	<b>.642</b>	.371	.466	.511	.426	-.269
solicitcompetitivequote	<b>.840</b>	.374	.499	.489	.407	-.358
solicitcompetitivebids	<b>.914</b>	.448	.441	.450	.418	-.340
solicitcompetitiveproposals	<b>.901</b>	.405	.455	.426	.471	-.222
ensuretransparentprocesses	<b>.776</b>	.450	.365	.519	.442	-.057

identifyevaluationmethodology	<b>.734</b>	.411	.389	.428	.488	-.199
conductprebidconferences	<b>.814</b>	.423	.356	.430	.456	-.134
prepareandissueaddenda	<b>.863</b>	.409	.462	.418	.474	-.248
analyzeevaluatesolicitations	<b>.841</b>	.399	.420	.365	.477	-.207
preparerecommendationaward	<b>.745</b>	.393	.382	.352	.478	-.209
respondprotestsandinquiries	.463	.275	.042	.260	.247	.019
selectpaymentmethod	<b>.641</b>	.360	.462	.376	.410	-.402
reviewsuppliersamples	.505	.304	.384	.312	.417	-.423
preparecontracts	<b>.689</b>	.333	.207	.340	.422	-.125
conductpostawarddebrief	<b>.675</b>	.329	.426	.438	.469	-.280
mitigateriskthruconditions	.581	.308	.198	.367	.408	-.063
selectnegotiationmembers	.347	.382	.180	.306	<b>.666</b>	-.099
preparenegotiationstrategy	.389	.375	.271	.294	<b>.730</b>	-.066
conductnegotiations	.375	.437	.252	.315	<b>.739</b>	-.007
documentnegotiationprocess	.574	.432	.352	.357	<b>.806</b>	-.086
conductpostawardconference	.494	.394	.418	.404	.510	-.456
evaluatesupplierperformance	.403	.313	.398	.313	.520	-.542
monitorsuppliercompliance	.469	.338	.418	.337	.534	-.473
modifycontracts	<b>.627</b>	.483	.295	.420	.555	-.249
remediatesuppliernoncompliance	.565	.420	.300	.415	<b>.640</b>	-.193
resolvedisputes	.437	.354	.243	.346	.517	-.086
terminatecontracts	.499	.375	.219	.295	.570	-.079
conductcloseoutactivities	.580	.412	.485	.394	.530	-.435
followupandexpediteorders	.427	.270	.596	.273	.307	-.535
resolvedeliveryreceivingprobs	.466	.299	.570	.354	.435	-.537
maintaininventory	.334	.191	<b>.754</b>	.257	.222	-.412
designinternaldistributechannel	.299	.209	<b>.725</b>	.286	.238	-.314
accountforassets	.285	.227	<b>.696</b>	.291	.244	-.311
establishwarehouseshipprocess	.326	.276	<b>.765</b>	.192	.238	-.248
selectmethdisposalequipmaterial	.346	.315	<b>.831</b>	.276	.264	-.070
disposesurplusequipmaterials	.395	.345	<b>.799</b>	.306	.277	-.155
facilitatemovementofgoods	.360	.240	<b>.726</b>	.150	.273	-.280
establishmissionvisionvalues	.285	.407	.021	.320	.332	.282
upholdpromotmissionvisionvalues	.344	.446	.077	.329	.348	.314
conductvalueanalyses	.493	<b>.679</b>	.312	.439	.456	.021
implementgoalobjectivemeasures	.315	<b>.628</b>	.141	.364	.389	.152
monitorlegislativetrendslaws	.293	<b>.649</b>	.169	.318	.377	.090
conductbusinessanalyses	.309	<b>.739</b>	.243	.277	.410	-.021
analyzeeconmictrendcondition	.295	<b>.863</b>	.247	.410	.354	-.120
conductcostbenefitacquisition	.396	<b>.816</b>	.247	.351	.378	-.213

implementprocessimproveplan	.338	<b>.734</b>	.255	.338	.324	-.093
planimplementprocurestrategy	.458	<b>.780</b>	.306	.390	.410	-.061
formprocurecontingencyplan	.430	<b>.658</b>	.322	.334	.388	.084
developstaffsuccessionplan	.319	.502	.226	.391	.375	.084

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Twenty-two factors have eigenvalues above 1.0.

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