

A COMPARISON OF PURCHASING'S ORGANIZATIONAL ROLES AND RESPONSIBILITIES IN THE PUBLIC AND PRIVATE SECTOR

P. Fraser Johnson, Michiel R. Leenders and Clifford McCue*

ABSTRACT. This research focuses on a comparison of public and private sector supply organizations in terms of organizational structure, supply chain responsibilities, the chief purchasing officer (CPO) and reporting line, teaming and involvement in major organizational activities. A unique opportunity to identify similarities and differences was presented in 2000 when the National Institute of Governmental Purchasing Research (NIGP) and Florida Atlantic University replicated in the public sector a study that the Center for Advanced Purchasing Studies (CAPS) conducted in the private sector in 1995. Significant differences and similarities are identified and are discussed in this paper.

INTRODUCTION

The mission of the supply function, whether in the public or private sector, is to manage the delivery of goods and services through the supply chain in a cost effective manner. However, it is well recognized that there are a number of unique aspects in public sector procurement. For example, public procurement is characterized by high levels of public disclosure and a heavy reliance on the bid process compared to

** P. Fraser Johnson, Ph.D., and Michiel R. Leenders, Ph.D., are an Assistant Professor, and Purchasing Management Association of Canada Professor of Purchasing Management, respectively, Richard Ivey School of Business, The University of Western Ontario. Dr. Johnson's research interests are in organizational issues in supply and reverse logistics. Dr. Leenders' research interests are in organizational issues in supply and supplier development. Clifford McCue, Ph.D., is an Associate Professor, School of Public Administration, Florida Atlantic University. His research interest is in public finance, budgeting and procurement.*

private sector organizations (Osborne & Pastrik, 1997). Notwithstanding these differences, there are also many commonalities between public and private sector groups. Benchmarking by the Center for Advanced Purchasing Studies (CAPS) found a common trend toward using automated purchasing systems to process transactions and track purchasing activities and an increased use of multi-year contracts (Center for Advanced Purchasing Studies, 1999).

One area of substantial research interest in the public and private sectors has been an examination of organizational issues in the supply area. The first large-scale North American research effort concerning private sector supply organizations was by Fearon (1988), who surveyed 297 large U.S. firms. Since that time, other work by Cavinato (1991), Pooley and Dunn (1994), Telgen, Zomer and de Boer (1997), Johnson, Leenders and Fearon (1998a), Johnson, Leenders, and Fearon (1998b), Harland, Gibbs and Sutton. (2000), and Leenders and Johnson (2000) have examined a range of organizational factors in private sector organizations. Fearon's original 1988 survey was replicated in 1995, providing the basis for a longitudinal examination of the trends and changes in large North American supply organizations (Fearon & Leenders, 1995).

Despite the interest in organizational issues in supply, absent from the literature is research that identifies organizational similarities and differences between public and private sector organizations. Moreover, existing research (e.g., Muller, 1991) has failed to identify meaningful differences between the two groups. Consequently, the purpose of this research is to compare large private and public sector North American purchasing organizations. In doing so, the following research questions will be addressed:

1. What differences exist between large public and private sector purchasing organizations with respect to organizational structure and supply chain responsibilities?
2. To what extent does the use of team-based purchasing activities differ between private and public sector organizations?
3. What differences exist between the chief purchasing officer's background in the public and private sectors?

4. How does purchasing's involvement in major organizational activities differ between the private and public sectors?

By developing an understanding of these issues, this research will clarify how purchasing's organizational roles and responsibilities differ between private and public sector organizations.

PREVIOUS RESEARCH

A number of research efforts have investigated organizational issues in public sector organizations. The 1999 CAPS benchmarking study collected data from 40 state and county governmental organizations. It found high levels of centralization within public sector supply organizations, with 57.5 percent of respondents describing their organizations as centralized, while 37.5 percent used a hybrid structure (Center for Advanced Purchasing Studies, 1999). This research also provided findings with respect to chief purchasing officer reporting and supply chain responsibilities. Purchasing reported to administration at 25 percent of the respondents, to finance in 17.5 percent, and other in 55 percent. The most common supply chain responsibilities were scrap and surplus disposal (58 percent of respondents), fixed asset management (33 percent of respondents), building construction (25 percent of respondents), receiving and warehousing (25 percent of respondents) and consultants and professional services (15 percent of respondents).

While centralized purchasing structures have been common in state and local governments, there has been a recent trend toward decentralization as a result of efforts to improve responsiveness, eliminate bureaucratic obstacles, improve inter-departmental coordination and empower service delivery managers (Thai, 2001). McCue and Gianakis (2001) found that considerable decentralization of core purchasing functions was occurring and that front line personnel were engaged in considerable boundary spanning activities.

Muller (1991) surveyed NAPM members in the manufacturing, U.S. government, state and local government, institutional, services, retail and food sectors regarding purchasing duties in 13 areas. The results showed relatively little differences in the responsibilities of the respondents across sectors, with the exception of three areas: inventory management, material flow and special considerations for enhancing purchasing

performance. Public sector purchasers were less involved in these three areas, compared to purchasers in the private sector.

While Muller (1991) argued in favor of the similarities in public and private sector purchasing responsibilities, Harland, Gibbs and Sutton (2000) identified the features that differentiate the private and public sectors: the nature of the particular public sector being considered, the nature of the inter-organizational network, the nature of the public service being provided, factors relating the recipients of the service, the nature of the supply market, the extent of availability of private sector alternatives, the nature of accountability, regulation, government and investment cycles and influential government themes. The framework presented by Harland, Gibbs and Sutton (2000) suggested that the macro environment and the sector context contributed to differentiation between private and public sector purchasing organizations.

Private and public sector organizations react differently to scarcity of resources. In the private sector, declining industries are characterized by increased competition and shake out (Harrigan, 1980), while public sector organizations react to cutbacks by increasing inter-organizational cooperation through increased centralization to avoid duplication (Ludwig, 1993). The creation of purchasing consortia represents one organizational response in the public sector. Johnson (1999) used case studies to examine how and why public sector organizations implement purchasing consortia, and proposed a life cycle model of consortia evolution. This research found that, while price and cost reductions were the primary motivation for the creation of consortia, other factors, namely opportunities to reduce staff, product and service standardization, improved supplier management capabilities, specialization of staff, customer service, higher profile of consortium members, expanded role of purchasing and transition of products through volume categories were other reasons why public sector purchasing organizations adopted consortia.

Johnson (1999) also found high levels of organizational change in the public sector purchasing organizations studied, including a strong interest in participating in consortia buying activities. While other research has established that private sector organizations participate in purchasing consortia (Hendrick, 1997), it was expected that the public sector organizations in our study would indicate higher levels of consortia purchasing activities compared to the private sector group.

RESEARCH METHOD

In 1995 CAPS undertook its second major research project investigating purchasing's organizational roles and responsibilities (Fearon & Leenders, 1995). This research collected data from 308 large private sector North American companies using a mail questionnaire, with a 51 percent response rate. Overall, 21 different industry groups were represented with 78 percent of the respondents from manufacturing industries and only 22 percent from service industries. The research instrument collected data relating to firm size, background and information related to the chief purchasing officer (CPO), size of the purchasing organization, supply chain responsibilities, participation in various forms of purchasing teaming activities and involvement in major organizational activities.

Five years later, research sponsored by Florida Atlantic University and the National Institute of Governmental Purchasing Research Center (FAU-NIGP) replicated the CAPS survey, collecting data from 267 governmental purchasing groups in cities and counties in the United States. The response rate for the FAU-NIGP survey was 33 percent.

The data from the CAPS and FAU-NIGP surveys were used in this research to address the four research questions. Respondents in both groups were asked to identify their organization's total revenues. Recognizing that the two groups differed with respect to the total revenues, the respondent groups were purposely selected for the analysis. The FAU-NIGP group consisted of respondents that had revenues ranging from under \$1 million to greater than \$300 million. For this group, respondents with revenues in the top three categories (\$100 million to \$200 million; \$200 million to \$300 million; and, greater than \$300 million) were selected for use in the analysis, representing 117 organizations. From the CAPS group, respondents in the two lowest sales categories (under \$500 million; and, \$500 million to \$1 billion) were selected, representing 97 organizations.

FINDINGS

As established in the research questions, data analysis involved examining differences between the two groups in the following areas: organizational structure, supply chain responsibilities, characteristics of the chief purchasing officer and reporting line, use of team-based

purchasing activities and purchasing's involvement in major organizational activities. Results indicate differences in several key areas.

Organizational Structure

Consistent with the findings of the CAPS benchmarking studies, one-half of the public sector purchasing organizations were centralized (51 percent), while virtually none were decentralized (2 percent). Approximately one-half of the respondents (47 percent) in the FAU-NIGP group had adopted a hybrid mode of organizational structure. Overall, 98 percent of the public sector organizations had some form of centralization (e.g., centralized or hybrid modes). This finding contrasts sharply with the data from the firms in the CAPS study, which reported hybrid structure in 51 percent of the firms surveyed and centralization in 27 percent of the respondents. The level of decentralization was low in the FAU-NIGP group (2 percent), compared to 22 percent in the CAPS group. Table 1 summarizes the data from the two respondent groups.

TABLE 1
Organization Structure

Organization Structure	CAPS		NIGP	
Centralized	26	27%	60	51%
Hybrid	49	51%	55	47%
Decentralized	21	22%	2	2%
Total	96	100%	117	100%

Differences with respect to the degree of centralization represents an interesting finding. In the private sector the magnitude of the spend as a percentage of total costs and the need to manage common suppliers across business units represent arguments in favor of centralized purchasing organizational structures. For example, purchased goods and services at private sector manufacturing organizations may represent 60-70 percent of the cost of sales (Heberling, Carter & Hoagland, 1992), with a significant portion related to direct materials and services. The sheer magnitude of dollars spent focuses management's attention on the

purchasing function and establishes a need for a centralized group to oversee key supply activities. Similarly, leveraging purchases across business units, or creating purchasing clout, to gain price discounts, is a common purchasing practice. Meanwhile, purchased goods and services for public organizations represent a much smaller portion of the total budget, and purchases mostly relate to indirect spending. Furthermore, substantial diversity across user groups within public sector organizations can exist. For example, requirements for municipal offices, police and public recreation departments are much different, and would, therefore, argue in favor of decentralization in order to address unique user needs. Clearly, more research is required to understand the reasons for the differences in these findings. A case-based methodology may be required to capture accurately the nature the differences and the reasons why they occur.

While the majority of public sector firms favored centralization, an interesting finding was that the two groups reported similar levels of hybrid organizational structures. Since the hybrid organizational mode can potentially offer the advantages of both centralization and decentralization, it would appear that a significant number of public sector organizations are attracted to the opportunity to decentralize some elements of their procurement activities. A major issue facing public procurement organizations is the challenge of providing improved service. Decentralization of some activities, through the adoption of the hybrid organizational mode, is considered one means of addressing this challenge (Thai, 2001).

Supply Chain Responsibilities

Significant differences were also found in supply chain responsibilities. Respondents were asked to indicate which activities were organizationally part of purchasing. Table 2 shows the differences between the two groups. Pearson Chi-Square tests were used to evaluate the differences between the two groups.

The CAPS group had greater responsibility in the areas of inbound traffic, material planning and control and outbound traffic ($p < 0.05$). There was also some evidence that the CAPS group had greater responsibility in the area of receiving ($p < 0.10$). This finding supports the research by Muller (1991), who also found differences in material flow between public and private sector groups.

The differences related to inbound and outbound transportation may be related to the types of products acquired. The private sector organizations in the CAPS study would purchase significant amounts of direct materials. Such companies carefully control the flow of materials in the supply chain, through techniques such as just-in-time delivery systems. In addition, the CAPS firms were large organizations — potentially larger than many of their suppliers. Consequently, these companies may have developed capabilities to dominate the flow of goods in the supply chain through development of logistics and transportation capabilities.

In contrast, the public sector firms in the study would acquire mainly indirect materials. In such situations the specifier may arrange delivery. Furthermore, most governmental organizations do not have delivery fleets and rely on suppliers to provide such services. As a practical matter, it is also easier for purchasers to specify delivery terms FOB destination in order to facilitate comparison of bids among suppliers.

TABLE 2
Supply Chain Responsibilities

Responsibility	CAPS		NIGP	
Scrap and surplus disposal**	56	57%	100	86%
Material and purchasing research	57	59%	79	68%
Inbound traffic**	50	52%	15	13%
Inventory control	43	44%	41	35%
Stores and warehousing	40	41%	41	35%
Material planning and control**	41	42%	27	23%
Outbound traffic**	36	37%	10	9%
Receiving [†]	36	37%	30	26%
Quality Assurance	21	22%	29	25%
In-plant materials movement	18	19%	24	21%
Other	24	25%	26	22%

[†] p < 0.10

* p < 0.05

** p < 0.01

A surprising finding was that the FAU-NIGP group indicated higher levels of involvement in scrap and surplus disposal (86 percent) compared to the CAPS group (57 percent). While the need for efficient and responsible disposal was important to both groups, these results do not reflect Muller's (1991) findings, although his research was completed almost a decade earlier.

It is common for private sector firms to establish relationships with suppliers to handle scrap and surplus material and equipment, and frequently, it is the responsibility of the purchasing function to manage such relationships (Johnson, 1998). Whereas, the high level of purchasing involvement in scrap and surplus disposal in public sector organizations may be caused by procedural requirements, the emphasis on the tendering process for the sale and disposal of scrap and surplus equipment and materials may require the involvement of the supply function in such activities.

It may also be possible that the level of centralization influenced responses related to supply chain responsibilities. The higher level of centralization in the public sector firms may account for its control over scrap and surplus disposal, whereas many private sector firms may delegate this responsibility to individual business units or plants. Additional research is required to gain an understanding for the differences between the two groups.

Although the FAU-NIGP group also indicated a slightly greater involvement in material and purchasing research (68 percent versus 59 percent), these differences were not found to be statistically significant. Meanwhile, the respondents indicated similar levels of involvement in the other five areas: inventory control, stores and warehousing, quality and in-plant materials movement.

The Chief Purchasing Officer (CPO)

The CPOs were asked to indicate their level of education (high school, college undergraduate or post graduate). The respondents from both groups were well-educated, with 88 percent of the CAPS group and 93 percent of the FAU-NIGP group indicating completion of a university degree at some level. However, one interesting difference was the significantly higher percentage of CPOs in the FAU-NIGP group (47

percent) that indicated a postgraduate degree (Master or Ph.D. degree) compared to the CAPS group (25 percent). Table 3 summarizes the reported educational levels of the two groups. While the research could not explain the why the differences exist, one possible explanation is that education may be an important criterion used to hire senior purchasing staff in the public sector. Once again, additional research is needed to determine the reasons for the differences.

TABLE 3
CPO Education

Education	CAPS		NIGP	
High School	12	12%	8	7%
College Undergraduate	61	63%	54	46%
College Graduate	24	25%	55	47%
Total	97	100%	117	100%

There were also several important differences between the groups with respect to CPO and reporting line. Table 4 summarizes differences between CPO characteristics and Table 5 shows differences in reporting line.

CPOs from the FAU-NIGP group had spent significantly fewer years at their employer (13.4 years versus 17.4 years) but had been in their current job for a longer period (8.5 years versus 7.2 years). While the differences between the two groups was not statistically significant, it

TABLE 4
The Chief Purchasing Officer

	CAPS	NIGP
Number years in present position	7.2 years	8.5 years
Number years with present employer**	17.4 years	13.4 years
Hired as CPO (percentage)**	29%	47%

** $p < 0.01$

TABLE 5
Reporting Line

CAPS			NIGP		
	N	%		N	%
President/CEO	10	10	City/County Manager	32	27
Executive VP	8	8	Assistant City/County Manager	7	6
Senior VP/Group VP	14	14	Director of Administration	10	9
Administrative VP	6	6	Finance Director	47	40
Financial VP	14	14	Director General Services	8	7
Operations VP	22	23	Other	13	11
Logistics VP	10	10			
Engineering VP	1	1			
Other	12	12			
Total	97	100	Total	117	100

would still appear that public sector CPOs spent longer periods in their position compared to CPOs in the private sector. There are a number of possible explanations for this finding. CPOs in the public sector may have spent less time working in other functional areas, compared to their counterparts in the private sector. Alternatively, public sector CPOs may progress faster to senior management ranks.

It may also be possible that public sector organizations are more likely to hire from outside and the career progression of public sector CPOs involves movement to larger organizations in order to take advantage of increased job responsibilities and remuneration. The evidence suggests that a significantly greater percentage of public sector firms recruit CPOs from outside the organization, with 47 percent of the respondents hired as head of the purchasing department, compared to only 29 percent in the private sector group. Public sector organizations may be more willing to look outside for talent, or are required to consider external candidates for vacant positions through a process of publicly posting open positions. Additional research is also required to understand

why CPO tenure is longer in public organizations and why such a large percentage of CPOs are recruited from outside the organization.

Approximately 40 percent of the public sector CPOs reported to the finance director, while only 14 percent of CPOs in private sector group did so. This finding suggests a stronger emphasis on cost and budget control, while the private sector companies indicated a much broader range of reporting lines. The most common reporting line for the CAPS group was to operations, for nearly one-quarter of the cases.

The second most common reporting line for CPOs in the FAU-NIGP group was to the city/county manager in 27 percent of the cases. While caution should be used in drawing direct comparisons, CPOs in the CAPS group reported to the CEO, executive VP, and senior VP/group VP positions in 32 percent of the cases.

Team-Based Purchasing Activities

Each respondent was asked to rate the levels of involvement of the procurement function in nine areas of team-based purchasing techniques (1 = none and 5 = extensive). Table 6 presents the data related to team based purchasing activities.

The data indicates that the CAPS group reported statistically significantly ($p < 0.05$) higher levels of use for four of the nine forms of team-based purchasing activities (supplier councils, cross functional teams, teams involving suppliers and co-location of purchasing with end users). Meanwhile, the FAU-NIGP group indicated higher levels of involvement in teams involving customers and consortia buying.

The manufacturing orientation of the CAPS group may account for these differences. Such organizations have more extensive new product development activities, and therefore have a greater need to use cross-functional teams and supplier teams. The emphasis of public purchasers on the bid process may also affect supplier-teaming opportunities.

One interesting finding, however, was that the FAU-NIGP group indicated greater involvement in teams involving customers. This may reflect differences in the definitions of the term “customer” between the two groups. Public sector purchasers define customers as specifiers, whereas the CAPS research defined customers as external to the organization.

That the FAU-NIGP group was found to have greater involvement in consortia buying was not a great surprise. This finding supports previous research, that public sector organizations have a strong motivation to use cooperative purchasing techniques (Johnson, 1999).

It is worth recognizing that the reported scores for team-based purchasing activities were low for both groups. On a five-point scale, the highest score for the FAU-NIGP group was 3.22 for consortia buying and 3.33 for cross-functional teams for the CAPS group.

Involvement in Major Organizational Activities

Respondents were asked to rate purchasing's level of involvement in a list of major organizational activities on a five-point scale (1 = none and 5 = extensive). Statistically significant differences between the two groups were found in eight of the 11 areas of involvement in major organizational activities (see Table 6).

TABLE 6
Teaming

Form of Team	CAPS		FAU-NIGP	
	Mean	Std. Dev.	Mean	Std. Dev.
Purchasing councils	2.61	1.19	2.35	1.23
Supplier councils**	2.21	1.08	1.78	0.92
Commodity teams	2.69	1.33	2.51	1.28
Cross functional teams**	3.33	1.16	2.80	1.19
Teams involving suppliers**	2.71	1.08	1.84	0.92
Teams involving customers**	2.25	1.04	2.90	1.22
Teams involving suppliers and customers	1.93	1.04	2.09	1.38
Co-location of purchasing with users**	2.38	1.27	1.73	1.01
Consortia buying**	1.43	0.82	3.22	1.10

** p < 0.01

The data indicated statistically higher ($P < 0.01$ or $p < 0.05$) levels of involvement of the private sector group in four areas (marketing planning, environment planning, financial/cash flow planning, and international countertrade/offset planning). For new product development, risk management/hedging and outsourcing, the differences were not as pronounced ($p < 0.10$).

Although some areas have little relevance to public sector organizations, such as new product development and countertrade, the results indicate an overall lower level of involvement of public sector supply organizations in major organizational activities, compared to the public sector organizations. In many of these areas, opportunities exist for public sector purchasing organizations to play an active role in the planning process, such as financial/cash flow planning, risk management and hedging, and environmental planning. More research is required to understand the nature and causes of the differences between the two groups.

The only area where the public sector group indicated higher levels of involvement was in technology planning ($p < 0.01$). It is possible,

TABLE 7
Involvement in Major Organizational Activities

Activity	CAPS		FAU-NIGP	
	Mean	Std. Dev.	Mean	Std. Dev.
Corporate strategic planning	2.77	1.09	2.69	1.01
Technology planning**	2.28	1.01	2.77	0.91
Capital project/investment planning	2.65	1.22	2.50	1.04
Marketing planning*	2.13	1.00	1.85	0.96
New product development†	2.78	1.20	2.51	1.09
Information systems planning	2.75	1.05	2.60	0.89
Environmental planning*	2.18	1.02	1.89	0.93
Financial/cash flow planning**	2.61	1.15	1.73	0.93
Risk management/hedging†	2.25	1.12	1.98	1.00
Outsourcing†	3.25	1.30	2.94	1.08
International countertrade/offset planning**	2.02	1.22	1.13	0.33

† $p < 0.10$

* $p < 0.05$

** $p < 0.01$

however, that the five-year time lag between the two studies and the prominence of Y2K planning at the time the FAU-NIGP data was collected accounts for this difference.

It is also worthy to highlight the relatively low scores from both groups in the area of involvement in major organizational activities. On a five-point scale, only outsourcing exceeded a mean of 3.0 in the CAPS group, while the FAU-NIGP group had a mean of 2.94 for this activity. Most other scores for both groups were in a disappointing low range. While the literature argues that organizations can use their supply chain to create competitive advantage, these results suggest that opportunities exist to involve the supply function in organizational strategy.

CONCLUSION

This research presents a basis for understanding the different organizational approaches to supply in the public and private sectors and provides insights regarding the roles and contributions made by the supply organization. Furthermore, it also offers useful benchmarking information that can be used to question pre-existing approaches to purchasing's roles and responsibilities for private and public sector organizations.

Results from this research provide valuable information regarding the specific commonalities and differences between the two groups, and the findings can be useful for both public and private sector purchasers and executives. The research offers useful insights concerning the career path, reporting line options and important activities involving purchasers in both sectors. Furthermore, the findings can be beneficial in establishing training and educational programs for purchasers.

The results indicated that public and private sector supply organizations differ in several important areas. Each of the five areas examined -- organizational structure, supply chain responsibilities, the CPO and reporting line, teaming and involvement in major organizational activities -- demonstrated significant areas of difference. While some research has argued that purchasing roles and responsibilities in the public and private sector are more alike than dissimilar, our findings indicate that significant differences exist.

LIMITATIONS AND OPPORTUNITIES FOR FUTURE RESEARCH

This research is limited by the characteristics of the respondents. The CAPS sample included a large percentage of manufacturing firms, while the FAU-NIGP sample consisted solely of respondents from city and county governments. For both groups, the samples were North American-based. The sample of NIGP members from city and county governments may bias the results and may not necessarily reflect broader trends in public purchasing organizations. It would also be helpful to increase the percentage of private sector service organizations in future research. Meanwhile, an opportunity still exists to compare large private sector firms with large governmental purchasing organizations, such as state and federal government agencies. Collecting data from international organizations would enhance the richness of the results by providing an opportunity to compare North American and European based organizations, for example.

The five-year time span between the two samples places limitations on the generalizability of the results. Consequently, the nature of this research should be regarded as exploratory. Nonetheless, there are a number of important research questions raised by this research. While the data indicates differences between the groups with respect to organizational structure, supply chain responsibilities, the CPO and reporting line, teaming and involvement in major organizational activities, why such differences exist is unexplained. For example: Why are public sector procurement organizations more likely to operate in the centralized mode? Is the career path for CPOs in the private sector different from those in the public sector, and why did a higher percentage of public sector CPOs have post graduate degrees? Why are public sector purchasing organizations firms more likely to report to finance when such reporting relationships are much less common in the private sector? In an era where both public sector and private sector organizations are being challenged to deliver more value, an understanding of different organizational approaches can help identify potential opportunities.

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