

Supply Chain Management Perspectives in the Public and Private Sectors

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Based on a recent survey of public and private procurement professionals in the Southwest United States, this study reports perspectives on supply chain management and perceptions regarding job-related importance of key supply chain management elements between procurement professionals in the public and private sectors. A survey structured around thirty key supply chain management elements and four unique perspectives of the relation between supply chain management and purchasing was used (Larson, 2009). As this exploratory study incorporated a convenience sample, the generalizability of the study findings is limited. However, despite this limitation, important findings emerged. Procurement professionals in the public and private sectors have different perspectives on organizational approach to supply chain management. Further, differences exist in the rating of job-related importance for the thirty key supply chain management elements between public and private sector participants.

In today's globally competitive private sector environment and shrinking budgets in the public sector, supply chain management is becoming increasingly important. Supply chain management is a competitive strategy for integrating the supplier/customer relationship to efficiently manage the procurement and delivery of goods and services in a cost effective manner with the specific objective of improving responsiveness and flexibility in organizations (Gunasekaran, 2004; McCue and Pitzer, 2005). In the private sector, the acquisition of products and services accounts for more than 60% of the total operating costs for most organizations (Degraeve, Roodhooft & van Doveren, 2005). Financial activity in the public sector may account for up to 30% of the GNP in the US and as much as 14-20% of the GDP in Europe (Callendar & Matthews; Mori & Doni, 2010). Consequently, effective supply chain management can lead to significant cost savings.

The trend of looking to the private sector for supply chain management strategy and key supply chain elements for implementation in the public sector is gaining popularity in the current literature. However, a number of authors have argued that despite the interest in cross sector implementation of supply chain management, meaningful differences in the application of supply chain management between public and private procurement professionals are not identified. Specifically, research that identifies similarities and differences in organizational approaches to procurement and supply chain management between public and private sector organizations is absent from the current literature (Hawkin, Gravier & Powley, 2011; Johnson, Leenders & McCue, 2003; McCue & Prier, 2008 Muller, 1991; Zhang, Viswanathan & Henke, 2010).

A number of authors have examined organizational issues and factors tied to supply chain management in the private sector to gauge their potential for implementation in the public sector (Cavinator, 1991; Fearon, 1988; Johnson, Leenders & McCue, 2003; Murray, 2007). Pooley and Dunn (1994) found that the job duties and skills of purchasing professionals experienced statistically significant change from 1960 to 1989. Other contributions include studies that examined a range of organizational factors related to supply chain management in private sector organizations (Harland, Gibbs and Sutton, 2000; Johnson, Leenders and Fearon 1998a, 1998b; Larson, 2009; Leenders and Johnson, 2000, Telgen, Zomer and de Boer, 1996).

Cross Sector Differences in Procurement

Fundamental differences exist between the public and private sector in reporting structure, regulating bodies, funding sources and operating motives (Larson, 2009). Public procurement differs from private procurement in scope. In the private sector, procurement strategy is driven and aligned with corporate revenue and profits goals - the bottom line. Government is frequently viewed as a market regulator, sometimes encouraging markets through competition law, or restraining them through minimum wage

laws. However, government plays an increasingly important role as an active participant in the market itself (McCrudden, 2004).

In the public sector, procurement has been utilized as an important tool for achieving economic, social and other goals and objectives (Arrowsmith, 1998). Including provision of no or low cost public goods and services, the development of local contractors and manufacturers, and advance legislation and conceptions of social justice through market regulation. Finally, public sector procurement serves a broader range of stakeholders, places greater emphasis on accountability and transparency, and allows little or no flexibility for negotiation. The effect of the layers of additional scope and limited ability to negotiate sometimes yields procurement inefficiencies. These inefficiencies often lead to increased spending through increased administrative demands, additional oversight, the decentralization of work across multiple suppliers, and time delays given legislative and legal requirements. All of which contribute to delays in the delivery of goods and services.

Notwithstanding these issues, the mission of the procurement function, in public and private sector organizations, is to efficiently manage the forecast, procurement and delivery of goods and services through the supply chain in a cost effective manner. Notwithstanding the great potential that the incorporation of supply chain management elements holds for public procurement, a careful exploration of the differences between public and private sector procurement is essential before cross sector implementation (Reed, Bowman & Knipper, 2005).

Research

This research pulled from the supply chain management and public procurement literature and examined the differences in supply chain management perspectives as well as differences in the rating of job-related importance for thirty key elements of supply chain management. Data collection was completed via an online survey that incorporated original and previously published questions (Larson, 2009) Participants included procurement professionals from a Fortune 500 company, and procurement professionals from a large metropolitan city in the Southwest United States. Invitations to participate in the survey were emailed, with a link to the survey, to respondents within each of the organizations.

Given the exploratory nature of the study, combined with funding limitations, a non-probability sample was selected. Thus, study findings are limited to the study population or similar group and should be approached with caution given the potential for sampling bias. Notwithstanding this limitation, the findings of this exploratory study are important as they yield new information regarding differences in supply chain management perspectives and importance of key supply chain management elements between the public and private sector that can be used as the foundation for future research with larger more representative samples This study explored the following research questions:

RQ1: Do public and private procurement professionals have different perceptions of their organizations' approach to SCM?

RQ2: Are there differences in the perceptions of the importance of key supply chain management elements between public and private procurement professionals?

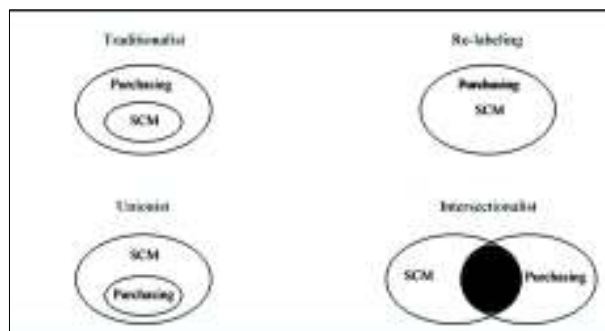
Survey and Analysis

The first section of the survey consisted of a series of questions that required the participants to report their perceptions of their organizations' perspective on supply chain management. Based on work by Larson (2009) the survey included the following descriptions about participants' perception of their organizations' approach to supply chain management. See Figure 1 below (Larson, 2009).

- Traditionalist: Supply Chain Management is positioned as a function within purchasing. Supply chain analysts report to the head of purchasing.
- Re-labeling: Entails a name change; purchasing is now SCM. "Purchasing managers" are re-titled to become "supply chain managers" with little or no change in job description Supply Chain.

- Unionist: Purchasing is a function within or a part of Supply Chain Management.
- Intersectionalist: Supply Chain Management consists of strategic, integrative elements across several functional areas, including purchasing. SCM coordinates cross-functional efforts involving multiple organizations.

Figure 1: Purchasing vs. SCM Perspectives



The second section of the survey was comprised of a list of 30 key elements related to supply chain management (Larson, 2009). Participants were asked to rate the importance of each of these items based on their assessment of the importance of each element in the context of their current professional position using a Likert scale with response choices from 1 to 5.

Findings

A convenience sample of 124 public and private procurement professionals from a Fortune 500 company and from a large metropolitan city in the Southwest United States completed the survey. The private sector corporation has annual revenue of more than \$40B and is rated as among the top 25 supply chain companies over the last 3 years. The public municipality is a large metropolitan city with an annual operating budget of \$3.5B. Overall, study participants were relatively new to supply chain management activities and had 5 or less years of experience with their current organization. Approximately half of the participants ($n = 60$, 48%) reported a bachelor's degree as their highest level of formal education. The number of participants from the public sector ($n = 66$) was slightly larger than the number of participants from the private sector ($n = 58$).

The first research question addressed participants' perceptions about their organizations' approach to supply chain management. Statistically significant differences between the public and private sectors were found across three of the four perspectives. Confidence intervals revealed statistically significant differences between the public and private sector in the Intersectionist, Traditionalist, and Unionist perspectives ($p = .05$). Only the Re-labeling perspective did not reveal statistically significant differences between the public and private sectors $p = .05$, 95% CI [.03, .16], and [.009, .011] respectively. This non-significant may due be attributable to the low number of respondents who selected this perspective across the public ($N = 5$) and private ($N = 2$) sectors.

Confidence intervals for the Intersectionist perspective indicated statistically significant differences between the public $p = .05$, 95% CI [.25-.28] and private sectors [.71-.90]. Similarly, confidence intervals indicated statistically significant differences between the public sector $p = .05$, 95% CI [.13, .32] and the private sector [.003, .09] for the Traditionalist perspective. Statistically significant results for the Unionist perspective were also found between the public $p = .05$, 95% CI [.24, .46] and the private [.05, .22] sectors. Based on these data, the null hypothesis, that there is no difference in the perception of organizational approach to supply chain management between sectors, is rejected as the data indicate with 95% confidence that the real value for each is not included in the calculated interval for the other.

The second research question was concerned with public and private sector participants' perceptions of importance for thirty different supply chain management key elements. Based on average importance

ratings, Table 1 reports public and private sector top ten lists of key supply chain management elements. The following eight items are on both top ten lists: Ethical Issues, Legal Considerations, Purchasing and Supply Management, Risk Management, Contract Management, Relationship Building, Price and Cost Analysis, and Supply Chain Mapping. Though there was significant overlap in the top ten, as was expected, statistically significant differences were detected.

Appendix A reports mean ratings by group, and t-test results, for all 30 supply chain elements on the questionnaire. To test for possible sector differences in respondents' ratings, independent sample t-tests were conducted on all 30 elements, with public versus private sector as the grouping variable. The items are arranged in descending order of the critical p-values obtained from the t-test. While a positive t-statistic implies an item is perceived more important by public sector professionals, a negative t-statistic implies an item is more important for the private sector. A higher absolute value of t-statistic implies a greater difference between public and private sector perceptions. A p-value less than .05 (the alpha level) implies a significant difference between the public and private sector average ratings on an item.

The first six items in Appendix A were rated significantly more important by the public procurement professionals, compared to their private sector counterparts. The item with greatest significant difference was procurement cards. On average, public sector participants rated this item 3.36 (out of 5), and private sector respondents rated the item 1.95. Group differences on the next eighteen items (from conflict management to logistics and transportation) were not significant. Rather, public and private participants rated these key elements as equally important. While the remaining nine items Appendix A were rated significantly more important by private sector participants, compared to their public sector counterparts.

As expected, this finding could lead to the conclusion that supply chain management in theory, strategy and application is more highly developed and installed in the private sector than in the public sector. Certainly, it confirms that supply chain management is more important in the private sector as a governing strategy for purchasing activities. Further, it affirms the claims in the current literature that supply chain management has emerged as the discipline that guides procurement strategy in the private sector and that public procurement professionals have different perceptions on the importance of various topics, tools and techniques for SCM, compared to their counterparts in the private sector (Larson, 2009).

Table 1: Top Ten Lists of Supply Chain Management Topic Tools and Techniques by Sector

Private Sector		Public Sector	
Topic, Tools & Techniques	Mean	Topic, Tools & Techniques	Mean
Ethical Issues	4.48	Ethical Issues	4.41
Legal Considerations	4.47	Legal Considerations	4.26
Supplier Selection / Evaluation	4.33	Price and Cost Analysis	4.22
Purchasing & Supply Management	4.29	Relationship Building	4.11
Risk Management	4.24	Contract Management	4.03
Contract Management	4.21	Transparency	4.00
Relationship Building	4.16	Risk Management	3.98
Price and Cost Analysis	4.03	Purchasing and Supply Management	3.98
Supply Chain Mapping	4.00	Supply Chain Mapping	3.98
Cycle Time Reduction	3.98	Request for Quote	3.88

Conclusions and Importance

Consistent with the literature, this study found statistically significant differences between public and private sector participants' perceptions of their organizations' approach to supply chain management. Further, differences were also detected in the ratings of importance on the 30 key elements of supply chain management between public and private sector procurement professionals (Larson, 2009). Results indicate that participants in the private sector place greater importance on supply chain management elements than their public sector counterparts.

This exploratory study is important for several reasons. Public administrators are facing increased calls for procurement reform (Thai 2004). As public procurement is "big business" with significant impact to local, state, and national economies; efficiency in public procurement has been a policy and management concern as well as a challenge for public procurement professionals (Thai, 2005). Greater emphasis is

being placed on 'how' in addition to 'how much' money is being spent and public procurement professionals are beginning to adopt best known methods from the private sector including key supply chain management elements to manage procurement activities. This research could help to identify the supply chain elements for public procurement professionals to achieve greater efficiency in public procurement.

Supply chain management has emerged as the discipline that guides procurement strategy in the private sector. Some have suggested that public sector procurement would benefit through the adoption of best known methods and strategies as implemented in private sector supply chain management (Larson, 2009). However, notwithstanding the great potential that private sector strategy and practices hold for public procurement, the factors examined herein must be addressed in the creation and successful implementation of public procurement strategy.

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Appendix A: Independent Sample T-Tests: Public Vs. Private Sector

	Mean			
	PR	PU	T	P
Procurement Cards	1.95	3.36	7.733	< .0001*
Price and Cost Analysis	4.03	4.22	1.168	0.8775
Vendor Certification	3.63	3.51	0.657	0.2562
Outsourcing	2.76	2.89	0.624	0.7332
Partnerships / Alliances	3.50	3.62	0.598	0.7247
Transparency	3.96	4.00	0.213	0.5842
Conflict Management	3.88	3.86	-0.083	0.4669
Social Responsibility	3.78	3.76	-0.100	0.4603
Supply Chain Mapping	4.00	3.98	-0.145	0.4424
Relationship Building	4.16	4.11	-0.290	0.3816
Request for Quote	3.93	3.88	-0.307	0.3795
Ecommerce	3.18	3.11	-0.320	0.3749
Activity-based Costing	2.67	2.59	-0.413	0.3402
Sustainability	3.90	3.82	-0.428	0.3346
Ethical Issues	4.48	4.41	-0.470	0.3195
Inventory Management	3.62	3.50	-0.596	0.2761
Total Cost of Ownership	2.09	1.95	-0.627	0.266
Third-party Logistics	3.12	2.98	-0.670	0.2522
Total Quality Management	3.78	3.61	-0.846	0.1997
Contract Management	4.21	4.03	-1.055	0.1467
Just in Time	3.54	3.30	-1.234	0.1096
Enterprise Resource Planning	3.28	3.02	-1.295	0.0988
Legal Considerations	4.47	4.26	-1.308	0.0965
Logistics and Transportation	2.72	2.42	-1.504	0.0676
Risk Management	4.24	3.98	-1.702	.0457*
Purchasing and Supply Management	4.29	3.98	-1.846	.0336*
Supplier Development	3.91	3.49	-2.050	.0212*
Cycle Time Reduction	3.98	3.61	-2.075	.0201*
Single v. Multiple Supplier Sourcing	2.90	2.42	-2.128	.0177*
Forecasting	3.48	2.62	-4.076	< .0001*
Supplier Selection and Evaluation	4.33	3.11	-6.380	< .0001*
Supply Chain Management	3.74	2.50	-6.960	< .0001*
Negotiation	3.52	1.97	-7.452	< .0001*