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Full Length Research Paper

Evaluation of the implementation of public sector supply chain management and challenges: A case study of the central district municipality, North west province, South Africa

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The study evaluates whether and to what extent supply chain management (SCM) practices in local municipalities are implemented. A case study was undertaken in the Central District Municipality and its local municipalities, North West Province, Republic of South Africa. Purposive sampling was used through which thirty (30) respondents were identified and interviewed within the six municipalities. Both primary and secondary data collection methods were employed to collect empirical data. The findings of the study revealed that (i) implementation of SCM was far from satisfactory (ii) the municipalities are faced with problems of lack of skills and capacity in the implementation and execution of SCM. Furthermore non-compliance to SCM regulations was highlighted. The study concludes by recommending (i) greater sharing of information among those tasked with the implementation of the SCM through the use of technology (ii) establishment of a structure for the implementation of SCM, and in particular structures for public-private partnerships in service delivery (iii) training of municipal employees tasked with the implementation of SCM and (iv) stricter application of the public procurement and the Municipal Finance Management Acts. For further research it is recommended that a replication of the study be done in other municipalities to obtain the situation regarding the implementation of supply chain management practices.

Key words: Supply chain management, implementation, municipality, legislation.

INTRODUCTIONS

The strategic role of supply chain management (SCM) in the South African (SA) public sector as the medium for creating and sustaining a competitive advantage can not be underscored (Ireland and Webb, 2007). Effective public sector SCM has potential benefits such as inventory reduction, improved service delivery and cost reduction across the supply chain (Daugherty et al., 2005; Attaran, 2004). However, despite these benefits, the SA public sector continues to encounter challenges in the supply chain (Hendricks and Singhal, 2003). Some of the challenges of supply chain management include poor implementation of SCM practices; lack of skills and capacity in the implementation and execution of SCM; quality of services and products in the supply chain, and poor collaborative planning. Other barriers are conflict of interest in the composition of tender committees, complexity of the preferential procurement policy framework act (Act No 5 of 2000) (PPPFA) and its associated regulations. These costly burdens result in government failure to meet customer demand (Hendricks and Singhal, 2005). This notwithstanding, research that demystifies SCM implementation practices in local municipalities within the Central District of North West province, SA is lacking. Hence, knowing and understanding why the implementation of SCM in these municipalities has not been successful would not only be of interest to the government but also to municipal managers that face the challenge to making SCM a reality. Due to the cited challenges, the implementation of SCM currently occupies centre stage in the financial management reform process

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in the public sector in South Africa (Mkhize, 2004). The emphasis of these financial management reforms is on the way in which financial resources are allocated, managed and reported on in the public sector (Mkhize, 2004). Thus, the South African government has adopted integrated SCM in its public procurement policy (OGC, 2005). Integrated SCM aims to add value at each stage of the process from demand of goods or services to their acquisition, managing the logistics process and finally, after use, to their disposal. In doing so, it addresses deficiencies in current practices related to procurement, contract management, inventory and asset control as well as obsolescence planning (SA, 2003d; Holmberg, 2000).

The purpose of this paper was to conduct a survey with a view to understand SCM implementation practices in the local municipalities within the Central District of North West province, South Africa. We argue that for successful supply chain management, managers must not focus on one particular inhibitor or facilitator, but rather consider the barriers and bridges in combination. This will allow them to capitalize on the added benefits of SCM. Our arguments begin with a review of the salient theory and literature of SCM followed by the research method used, then data presentation and discussion of the results.

LITERATURE REVIEW

In this section, we present the theoretical framework and the related South African public sector literature on SCM.

Theoretical framework

Numerous theories have been used by researchers to understand why some supply chains succeed in creating value while others do not. Although perspectives of and prescription to SCM vary, a common idea among researchers is that competitive success for a strategic supply chain is contingent on management's ability to recognize changes in the competitive environment and then direct and coordinate action within and across organizations to utilize resources effectively and meet the demands of the environment (Stonebraker and Afifi, 2004). This is attributed to the contingency theory.

A second theory that helps explain how supply chains can create value is Lewin's (1951) force field theory. According to the Force field theory, the ability to scan the environment for the forces driving SCM, to identify the potential barriers (or resisting forces), and to implement bridges enables SCM actors to maintain competitive success in changing environments and markets. The contingency model is driven by technological innovation, management skills across departments and organizational functions, and integration vertically and horizontally across industry (Stonebraker and Afifi, 2004).

However, implementation of a successful supply chain may encounter resisting forces that include lack of SCM actor's support, inadequate measurement and information systems, and organizational culture. Thus, successful supply chains can create value contingent on their ability to overcome resisting forces through various mechanisms. Figure 1 shows a contingency framework for understanding SCM implementation.

SCM in the public sector

Public sector SCM is a concept that offers a reference framework for the composition of Public sector Supply Chains and multilevel networks. Actors in public sector supply chain comprise (1) private firms which receive orders from public sector agents, (2) accounting officers and (3) policy-makers. The SCM in the public sector not only concentrates on the question, which institutions cooperate in goods and services, but also how these enterprises are involved with enterprises operating at other levels. Thus, analyses of intra-network-relationships as well as analyses of inter-network-relationship are essentially necessary elements of the concept.

SCM in the public sector differs from government sector-to-sector. In the health sector, for example, the focus may be more on logistics and the effective movement of goods and services in and out of hospitals whereas SCM in the education sector may focus on streamlining the chain through which teaching materials are delivered to students. The shape of the supply chain and the supply chain management processes employed will therefore vary considerably depending on a range of different considerations (OGC, 2005).

Public supply chain may be inbound into the public sector that is, an operational requirement for internal customers and may be outbound from the public sector to deliver wider organizational objectives to provide services for delivery to citizens, or a combination of both. Supply chain is inbound to the public sector where suppliers deliver goods and services into the public sector departments to support their operational objectives e.g. office furniture provision. While it is outbound from the public sector – directly supporting the needs of the public e.g. suppliers delivering training services for public sector funded projects.

SCM in the South African public sector

For about two decades now, the South African public sector supply chain has undergone transformation through the introduction of procurement reforms. The procurement reforms started in 1995 and were directed at two broad focus areas, namely the promotion of principles of good governance and the introduction of a preference system to address socio-economic objectives.

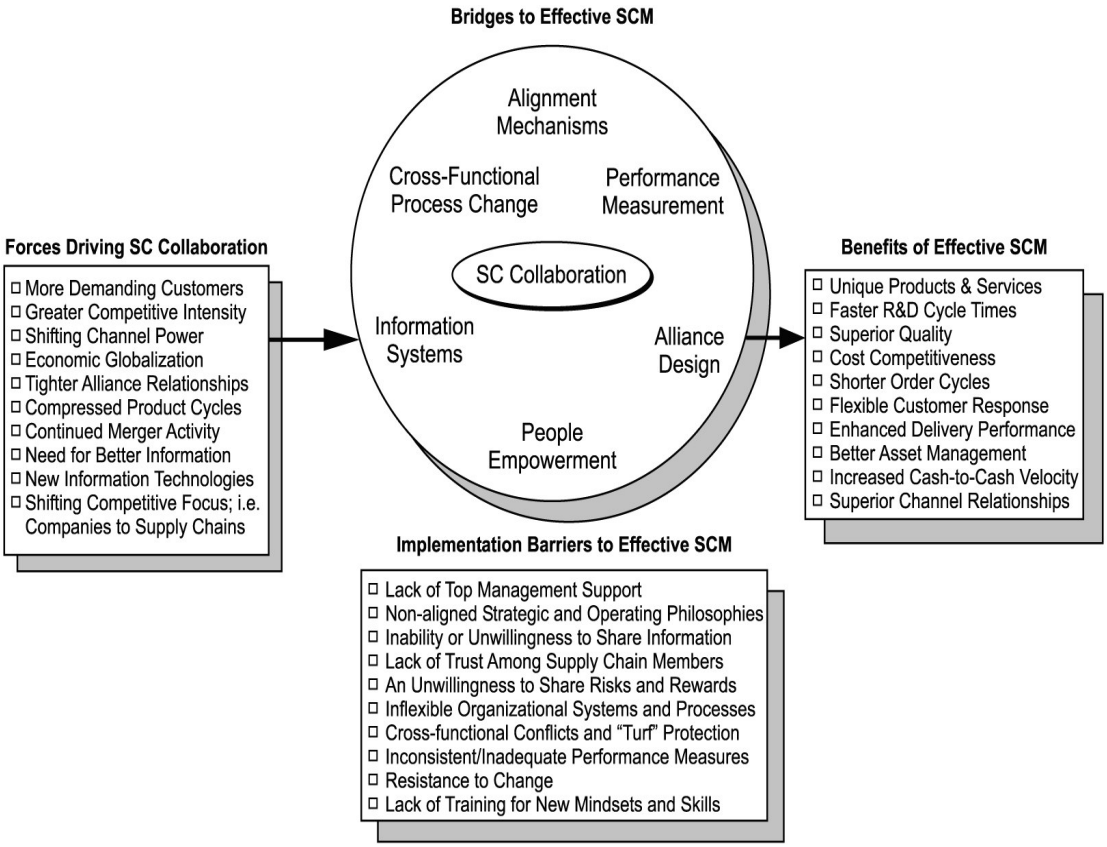

Figure 1. A contingency framework for understanding supply chain implementation.

The procurement reform processes were embedded in section 76(4) (C) of the Public Finance Management Act (PFMA) and the Preferential Procurement Policy Framework Act (Act No 5 of 2000) (PPPFA) (SAMDI, 2005).

To introduce and implement the reforms, the SCM unit at the national treasury in 2001 completed a joint country procurement assessment review (CPAR) with the World Bank to assess procurement practices through out the public sector. The CPAR identified certain deficiencies in practices relating to governance, interpretation and implementation of PPPFA and its associated regulations (National Treasury RSA, 2003b:2). The deficiencies led the provincial treasuries, in conjunction with the national treasury, to vigorously embark on a reform initiative to introduce best procurement practices that are efficient and effective. Based on this, SCM was introduced in the South African public sector (Mkhize, 2004).

Municipal SCM practices

In the past, most of the focus in the municipal procurement process was devoted to "meeting the requirements of the tender Boards. However, tender boards have since for their procurement processes, within the public been abolished and institutions have become responsible procurement framework published by the South African Government (Republic of South Africa. 2005b). The framework emphasised the application of the SCM requirements. The requirements cover demand management, acquisition management, logistics management, disposal management, risk management and performance management. Figure 1 show the SCM frame-work (Republic of South Africa. 2005a) where value is added at each phase of the process.

Demand management

Need assessment (demand) precedes the implementtation of SCM. The objective is to ensure that goods and services delivered comply with specifications of the identified needs. It also ensures that resources required to fulfil needs identified in the IDP of a municipality is delivered at the correct time, price and place and that the quantity and quality satisfies the needs (Republic of South Africa. 2005a) (Figure 2).

Acquisition management

Acquisition management is the management of procurement. Each municipality decides on the manner in which the market should be approached, establishes the total

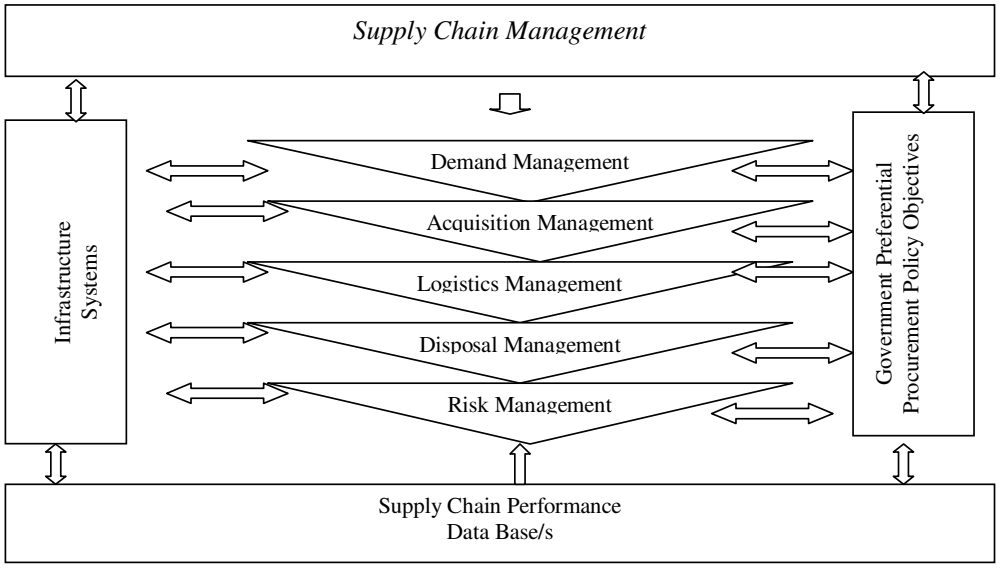

Figure 2. Framework of supply chain management; Source: Republic of South Africa. 2005b.

cost of ownership of assets, ensures that bid documenttations are complete including evaluation criteria, evaluates bids in accordance with published criteria and ensures that proper contract documents are signed (Republic of South Africa. 2003b).

Logistics management

Logistics is the process of strategically managing acquisition, movement and storage of materials (inventory) through the organisation and its marketing channel in such a way that profitability is maximised through cost-effective fulfilment of orders [Stock and Lambert, 2001; Anon, 2003]. It forms part of the supply chain process that implements, controls and ensures an effective flow of stored goods, services and related information from the point of origin to the point of consumption (Hugo et al., 2002).

Disposal management

Disposal management is the letting away of assets that are no longer needed, including unserviceable, redundant or obsolete assets. It gives due consideration to obsolescence planning, creation of a database of redundant material, inspecting material for potential re-use, determining a disposal strategy and executing the physical disposal process [Republic of South Africa. 2004]. It is recommended that accounting officers appoint specific committees to deal with disposals, and their recommendations are considered for disposal decisions (MFMA Sections 14 and 90).

Risk management

Risk refers to unintended or unexpected outcome of a decision or action. Risk management is the provision of an effective system for identification, consideration and avoidance of potential risks. It includes the identification of risks on a case-by-case, allocation of risks to the party that is best suited to manage it, acceptance of the cost of the risk, the management of risk in a pro-active manner and provision of adequate cover for residual risk as well as the assignment of relative risks to the contracting parties through clear and unambiguous contract documents (Samdi, 2005).

Supply chain performance

Supply chain performance is a monitoring process undertaking a retrospective analysis to determine whether the proper processes have been followed and whether the desired objectives were achieved. The South African Government's national treasury has developed a reporting template that is used by provincial treasuries to monitor SCM implementation process at the relevant municipalities. To continuously improve the supply chain performance, municipalities are expected to adopt the template to enhance their supply chain performance (Republic of South Africa. 2005b). Subject to section 42 of the municipal supply chain (MSC) regulations of 30

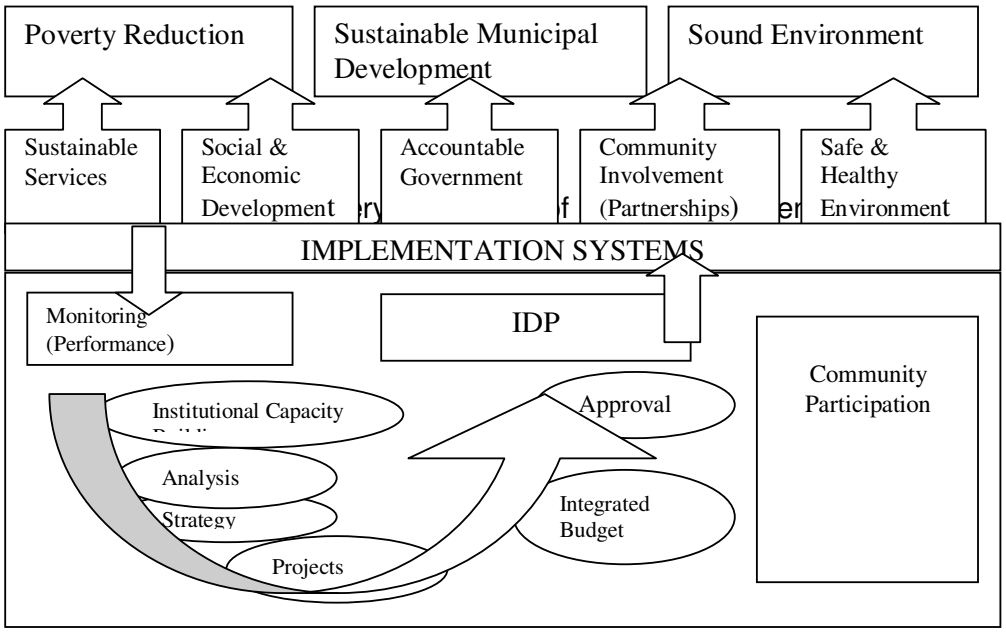

Figure 3. Integrated development planning system; Source: Republic of South Africa, 2005c.

May, 2005, a SCMP must provide for an effective internal monitoring system.

Integrated Development Planning (IDP) in municipalities

According to the South Africa Municipal Systems Act (Act No 32 of 2000), all municipalities (i.e. metros, district and local municipalities) have to undertake an IDP process (Republic of South Africa. 2000; Republic of South Africa, 2003c). The procurement needs are identified during the strategic planning of the municipalities (IDP), the point at which service delivery targets are identified (Samdi, 2005). Figure 3 shows the structure of an integrated development planning system.

The critical aspect of IDP is the completion of the service delivery and budget implementation plan (SDBIP) by the respective municipalities. The SDBIP is a detailed plan that indicates monthly revenue and expenditure projections, quarterly service delivery targets and performance indicators approved by the executive mayor of a municipality in terms of section 53(1) of the MFMA for implementing the municipality's service delivery plan (Republic of South Africa. 2005c).

RESEARCH DESIGN AND METHODOLOGY

The study was based on a case study conducted in the Central District Municipality and its five affiliated local municipalities in the North West Province, South Africa. These local municipalities were: Mafikeng, Ditsobotla, Ramotshere Moiloa, Tshwaing and Ratlou. The municipalities were chosen based on proximity and available resources. Primary and secondary data collection methods were employed. Secondary data were based on existing literature on SCM legislation, while primary data were collected through a self-administered questionnaire.

Purposive sampling was used through which thirty (30) respondents were identified and interviewed within the six municipalities. Eligibility for participation in the interview process was based on an employee being a manager in the supply chain management unit or an employee in the SCM directorate. The research instrument comprised open and closed ended questions. The closed ended questions were measured using the Likert scale and were analysed descriptively using SPSS, whereas the closed-ended questions were analysed using content analysis. The table shows the distribution of the respondents.

The research instrument covered the demographic profile of the respondents; procurement constraints; compliance with tendering procedures and directives, and elements of SCM. The variables were measured on a Likert scale with four categories of responses scored as (4=strongly agree, 3=Agree, 2=Disagree and 1= strongly disagree).

The Likert scale was chosen as it measured attitudes under investigation with agreement- disagreement response scales. Furthermore, the scale simplified the scoring procedure by using whole numbers (that is, 1, 2, 3, and 4) for each variable in the questionnaire. The scale is widely used in survey research (Neumann, 2006).

Descriptive statistics was used to analyse empirical data. In order to present and collate information from the respondents, data were tabulated, frequency counts calculated and percentages worked out.

RESULTS

This section presents the empirical results on the procurement practices and challenges within the central District municipality and its affiliated municipalities and on

Table 1. Distribution of the respondents.

Municipality	Number of Respondents
Central District Municipality	7
Mafikeng Local Municipality	4
Ditsobotla Local Municipality	6
Ramotshere Moiloa Local Municipality	6
Tshwaing Local Municipality	2
Ratlou Local Municipality	5
Total (n)	30

Table 2. Distribution of academic qualification, N=30.

Academic achievements	Frequency	Percent
Diploma	**15**	**50%**
Bachelors + Honours	**12**	**40%**
Masters and above	**3**	**10%**
Total	**30**	**100%**

Table 3. Distribution of experience in SCM directorate.

Years of Experience	Frequency	Percent
0 – 4	**12**	**40%**
5 – 9	**8**	**27%**
10 – 14	**4**	**13%**
15 and above	**6**	**20%**
Total	**30**	**100%**

the municipalities' status of compliance with the public sector procurement regulations. The analysis begins with the demographic profile of the respondents.

Demographic profile

Analysis of the respondents' profile showed that 50% of the respondents had attained a diploma qualification, 40% Bachelors and honours and 10% had masters and above. (Table.1)

Table 2 shows the distribution of academic qualifycations among the respondents. Accordingly, they were categorized into four age groups as 20 to 30 (17%); 31-40 (33%); 41-50 (40%) and 50 + were 10%, respectively. However, regarding years of work in the municipalities, the results indicated that 40% of the respondents had been in the service between 0 to 4 years; 27% between 5 to 9 years; 13% between 10 to 14 years and 20% over 15 years.

Procurement constraints

In order to construct an understanding of the existing procurement constraints, empirical results from the survey are presented in Table 3. Respondents were asked questions on five items relating to procurement constraints. They were also asked to rate each aspect on a four point scale (4 being strongly agree and 1 strongly disagree). Agree was rated as 3 and disagree 2. Analysis of the data revealed that 80% of the officials in SCM directorate lacked skills in SCM (strongly agree and agree responses combined); and that formation of cross functional committees within the departments for tender specification, evaluation, and adjudication was a problem (80%) at level four and three responses combined. This partly could be attributed to the lack of SCM skills in the departments. 80% of the accounting Officers indicated that they have become more accountable with the decentralisation of the procurement process. The responses also revealed lack of basic accounting and financial Management Skills amongst SCM officials (67%) as a constraint in the SCM process in the municipalities.

The other aspect on which information was sought was whether there was timely procurement of goods and service as a result of decentralisation of the tender board. It was generally acknowledged (80%) that ecentralisation of the tender board had resulted in timely procurement of goods and services thereby resulting in better service delivery.

Responses were sought on the following items

Officials working in Supply Chain Management (SCM) directorate lack SCM skills.

Forming cross functional committees in line with SCM guidelines is problematic due to limited numbers of administrative officials.

Lack of basic accounting and financial management skills is a constraint in the SCM activity.

Decentralisation of procurement from the Central Tender Board has resulted in timely procurement, and better service delivery.

Accounting officers in departments have become more accountable after decentralisation of procurement.

Compliance with the procurement regulations

Compliance refers to acting in accordance with a legal obligation (Payan and McFarland, 2005; Lange, 1999). In complying, the target agrees with the goals associated with the requested behaviour (Kelman, 1958). To understand what is happening within the municipalities with respect to compliance to tendering procedures, information was sought on the following seven items, subsequently presented in Table 5 as 1, 2,3,4,5, .6 and 7.

1). Non compliance to SCM guidelines and policies is still a major constraint in the provincial departments.

2). Ordering small quantities by splitting the orders is

Table 4. Procurement constraints.

Response	Strongly agree		Agree		Disagree		Strongly Disagree		Total Frequency and %	
Scale	4		3		2		1			
	Frequency	%	Frequency	%	Frequency	%	Frequency	%		
1	15	50	9	30	6	20	0	0.00	30	100
2	9	30	15	50	4	13	2	7	30	100
3	8	27	12	40	9	30	1	3	30	100
4	9	30	15	50	4	13	2	7	30	100
5	14	47	10	33	4	13	2	7	30	100

Table 5. Compliance with procurement regulations.

Response	Strongly agree		Agree		Disagree		Strongly Disagree		Total Frequency and %	
Scale	4		3		2		1			
Question	Frequency	%	Frequency	%	Frequency	%	Frequency	%		
1	14	47	9	30	5	17	2	6	30	100
2	8	27	11	37	7	23	4	13	30	100
3	7	23	20	67	3	10	1	3	30	100
4	12	40	12	40	5	17	1	3	30	100
5	9	30	13	43	7	23	1	3	30	100
6	11	37	17	57	9	30	3	10	30	100
7	4	13	6	20	16	53	4	13	30	100

practice used to avoid compliance with the SCM guidelines/regulations.

3). Lack of clarity in SCM guidelines is a reason for non-compliance with the procurement procedures.

4). Lack of supplier's knowledge about SCM regulations and policies prevents them from complaining about irregularities of SCM officials.

5). Lack of officials with technical know-how (e.g. Engineering, IT, Medical Equipment, Foreign exchange regulations Etc.) enhance non-compliance with SCM procedures and guidelines.

6). SCM officials and suppliers collaborate to defraud the departments.

7). Renewing an existing contract is often considered as an option than issuing new contract.

The empirical results as presented in table 4 revealed that non- compliance to SCM guidelines and policies dominated SCM practices within the municipalities (77%). Further, it was revealed that orders are often split to avoid compliance to SCM guidelines and regulations (64% of the respondents, at the strongly agree and agree measurement scale).

On the question as to whether lack of clarity on SCM guidelines was a reason for non-compliance with the procurement procedures, 90% of the respondents supported the claim. Furthermore, 80% of the respondents confirmed that lack of suppliers' knowledge about SCM regulations and policies prevents them from complaining about irregularities of SCM officials. It was further noted that lack of officials with technical know-how was another factor which enhanced non-compliances with SCM procedures and guidelines (73%). It also emerged from the study that SCM officials and suppliers collaborated to defraud the municipalities. This was supported by (94%) of the respondents. In addition, renewal of existing contracts is often not considered an option to issuing of new contracts (66%).

Elements of supply chain management

Demand management

Table 6 below indicates the responses to four questions (i) do municipalities take into consideration the elements of SCM? (ii) do municipalities have a demand management team? (iii) do municipalities have a bid specification committee? (iv) do municipalities link demand management to procurement practices? The respondents were asked to rate each one on a scale of 1 to 5 depending on how they perceived the question (where 1= strongly disagree, 2=Disagree, 3= strongly agree, 4= agree and 5=do not know).

The results show the number of responses for each rating and the corresponding percentages. An examination

Table 6. Demand management (sample size=30).

Questions	Strongly Disagree		Disagree		Strongly Agree		Agree		Do Not know	
	N	%	N	%	N	%	N	%	N	%
1 Do municipalities take into consideration the elements of SCM?	-	-	1	3.3	16	53.3	13	43.3	-	-
2 Do municipalities have a demand management team?	4	13.3	19	63.3	2	6.7	2	6.7	3	10.0
3 Do municipalities link demand management to procurement practices?	4	13.3	13	43.3	6	26.7	3	10.0	2	6.7
4 Do municipalities link demand management to procurement practices?	1	3.3	2	6.7	17	56.7	4	13.3	6	20.0

Table 7. Acquisition management (N=30).

Statements	Strongly Disagree		Disagree		Strongly Agree		Agree		Do Not know	
	N	%	N	%	N	%	N	%	N	%
1 The Municipality has a predetermined range of of procurement processes.	-	-	2	6.7	25	83.3	2	6.7	1	3.3
2 The Municipality has considerations for quotations or bids.	-	-	-	-	20	66.7	7	23.3	3	10.0
3 The Municipality uses various media to Advertise tenders.	-	-	1	3.3	26	86.7	3	10.0	-	-
The Municipality has a unique procurement data base system.	1	3.3	22	73.3	3	10.0	-	-	4	13.4
5 The Municipality uses the municipal bidding document (MBD8) for supply chain management practices.	2	6.7	10	33.3	9	30.0	-	-	9	30.0
6 The Municipality has records of bidders who abuse supply chain management regulations.	3	10.0	17	56.7	3	10.0	-	-	7	32.3
7 The Municipality has records on cases of fraud, corruption and defaulters during the last three years.	5	16.7	16	53.3	1	3.3	-	-	8	26.7
8 The Municipality acquires the services of consultants.	-	-	-	-	23	76.7	7	23.3	-	-

of the responses show that most of the respondents suggested that the municipalities considered the elements of the SCM (a total rating of 96.6% at level 3 and 4); municipalities linked demand management to supply chain management (a total rating of 70% at level 3 and 4); municipalities had bid specification committees (a total rating of 36.7% at level 3 and 4) respectively. Nonetheless, 76.6% of the respondents at level 1 and 2 indicated that the municipalities did not have a demand management team and 56.6% of the respondents at level 1 and 2 indicated that municipalities did not have bid specification committees.

Table 7 above shows part of the responses to the objective ”to examine the SCM implementation practices in the Central District Municipality and its local municipalities” that was addressed through eight related statements. The respondents were asked to rate each one on a scale of 1 to 5 depending on how applicable the statement was to their situation (where 1= strongly disagree, 2=Disagree, 3=strongly agree, 4= agree and 5=do not know).

The results show the number of responses for each rating and the corresponding percentages. An examination of the responses shows that all the municipalities in the investigation acquire the services of consultants to enhance the delivery of services (a total rating of 100% at level 3 and 4); municipalities have a predetermined range of procurement processes and that they consider quotations or bids for services and goods (a total rating of 90% at level 3 and 4), respectively.

Interestingly, each municipality does not have a unique procurement data base system (a total rating of 76.6% at

Table 8. Responses to logistics, disposal risk and performance management (N=30).

Statements	Strongly Disagree		Disagree		Strongly Agree		Agree		Do Not know	
	N	%	N	%	N	%	N	%	N	%
1 There is monitoring of spending on goods and services.	3	10.0	10	33.3	10	33.3	3	10.0	4	13.3
2. Inventory levels that includes minimum and maximum levels and lead times are set.	5	16.7	15	50.0	-	-	2	6.7	8	26.7
3. Electronic manuals and Orders for Acquisitions are used.	8	26.7	18	60.0	3	10.0	-	-	1	3.3
4. Goods and services are certified by the municipality officials before payments are made.	1	3.3	-	-	22	73.3	5	16.7	2	6.7
There is appropriate standards of internal control and warehouse management.	2	6.7	14	46.7	11	38.7			3	10.0
6. There is regular checking of assets	1	3.3	21	70.0	8	26.7	-	--	-	-
7 Monitoring and review of supply vendor performance is regularly done.	1	3.3	14	46.7	5	16.7	2	6.7	8	26.7
8 Transfer of assets from one municipality to another is done free of charge.	20	66.7	3	10.0	-	-	-	-	7	23.3
9 Assets are transferred from one Municipality to another at market value.	21	70.0	4	13.3	-	-	-	-	5	16.7
10 Risk identification is done on case by case basis.	8	26.7	10	33.3	8	26.7	-	-	4	13.3
11 Risk allocation is done	11	36.7	8	26.7	5	16.7	-	-	6	20.0
12Risk acceptance is part of management.	9	30.0	10	33.3	4	13.3	-	-	7	23.3
13 Adequate cover for residual risk is made.	2	6.7	4	13.3	13	43.3	3	10.0	8	26.7
14 Internal monitoring system	2	6.7	11	36.7	11	36.7	1	3.3	5	16.7

level 1 and 2); municipalities have no records on cases of fraud, corruption and defaulters during the last three years (a total rating of 70% at level 1 and 2); municipalities have no records of bidders who abuse supply chain management regulations (a total rating of 66.7% at level 1 and 2); and that municipalities do not use the municipal policy bidding regulations for supply chain management practices (a total rating of 40% at level 1 and 2).

Logistics, disposal, risk and performance management

Table 4 below presents respondents' responses on fourteen statements covering aspects of Logistics, Disposal, Risk and Performance Management as implemented in the municipalities in the investigation. Each statement was rated on a scale of 1 to 5 depending on how applicable the statement was to their situation (where1= strongly disagree, 2=Disagree, 3= strongly agree, 4= agree, and 5=do not know).

The results show the number of responses for each rating and the corresponding percentages. An examination of the responses in the table show that goods and services procured are certified by the municipality officials before payment is made (a total rating of 90% at level 3 and 4); adequate cover for residual risk is made (a total rating of 53.3% at level 3 and 4); there is monitoring of spending on goods and services procured (a total rating of 43.3% at level 3 and 4) and that there is appropriate standards of internal control and warehouse management (a total rating of 38.7% at level 3 and 4), respectively. That notwithstanding, the results reveal that in general, there are a number of aspects that are not satisfactorily executed. For example, electronic manuals and orders for acquisitions are not used (a total rating of 86.7% at combined levels 1 and 2) ; assets are not transferred from one municipality to another at market value (a total rating of 83.3% at combined levels 1 and 2); there is no regular checking of assets (a total rating of

Table 9. Link between IDP and SCM.

Statements	Strongly Disagree		Disagree		Agree		Strongly Agree		Do Not know	
	N	%	N	%	N	%	N	%	N	%
1 My Municipality has an IDP	-	-	-	-	14	46.7	-	-	-	-
2 My Municipality links IDP and SCM	-	-	6	20.0	13	43.3	4	13.3	4	13.3
3 My Municipality has service delivery budget implementation plan	-	-	3	10.0	16	3.3	1	3.3	1	3.3
4 My Municipal services are delivered via public-private partnerships	5	16.7	13	43.3	5	16.7	7	23.3	7	23.3
5 My Municipal services are delivered via Privatisations.	9	30.0	17	56.7	-	-	4	26.7	4	13.3
6 My Municipal SCM has increase economic growth.	-	-	3	10.0	12	40.0	14	46.7	14	46.7
7 My Municipal SCM has led to job creation	-	-	4	13.3	15	50.0	10	33.3	10	33.3
8 My Municipal SCM has led to a reduction in operational costs	-	-	7	23.3	5	16.7	17	56.7	17	56.7

73.3% at combined levels 1 and 2); risk allocation is not done (a total rating of 63.4% at combined levels 1 and 2); there are no appropriate standards of internal control and warehouse management (a total rating of 53.4% at combined levels 1 and 2) and that there is absence of sound internal monitoring system (a total rating of 43.4% at combined levels 1 and 2), respectively.

Investigating the linkage between supply chain management and integrated development planning in municipalities

Table 9 above presents information on the current practices in Supply Chain management and integrated development planning in the Central District and its affiliated Municipalities, North West province. A structured questionnaire was used to elicit responses on relevant practices. Measurement of items took the form of statements. Each statement was rated on a scale of 1 to 5 (where 1= strongly disagree, 2=Disagree, 3= strongly agree, 4= agree and 5=do not know).

The results show the number of responses for each rating and the corresponding percentages. An examination of the responses in the table show that SCM has increased economic growth within the municipalities in the investigation (a total rating of 86.7% at level 3 and 4); SCM has led to job creation (a total rating of 83.3% at combined levels 3 and 4); SCM has led to a reduction in operational costs (a total rating of 73.4% at combined levels 3 and 4); and that municipalities link SCM to IDP (a total rating of 56.6% at combined levels 3 and 4) . However, the empirical results reveal that municipalities have not fully implemented an IDP (adoption rated at 46.7% at combined levels 3 and 4).

A further finding was that, municipal services were not delivered through private companies (a total rating of 86.7% at combined levels of 1 and 2) and, neither through public-private partnerships had (a total rating of 60% at combined levels of 1 and 2).

Content analysis

Content analysis was based on SCM implementation practices and the link between SCM and IDP. Thirty participants were involved in the study. The interview text was sorted into four codes (Table 10).

Themes were developed from the condensed meaning by classifying them into sub-categories and categories as shown below (Table 11).

DISCUSSION OF THE RESULTS

The empirical results revealed that non- compliance to SCM guidelines and policies dominate SCM practices within the departments (82%). This finding was similar to that of a study in the European Union on compliance to public sector procurement and tendering directives that showed that over the years, non-compliance has been considered as a major hindrance to the effectiveness of the tendering directives. That extant study concluded that the major problem had been the inadequate implementation of the tendering directives (De Boer and Telgen, 1998). In another study on compliance by municipalities in The Netherlands, it was found that non-compliance ranged from 77 to 83 percent in the tendering activities of the municipalities (The Netherlands Ministry of Economic Affairs, 2004). The empirical evidence further indicated that orders are often split to avoid compliance to SCM guidelines and regulations (65% of the

Table 10. Interview text.

Meaning of measurement variable(unit)	Condense Meaning	Code
No demand management team; Bid specifications are being done by the individual department; There is low level of planning and execution of management processes; There is very low level of industry analysis and research etc	Improper planning; No bid committees	1
Trying to bench mark with other municipalities; still to develop a SCM bid committee; Take advantage of the cost of ownership; Highly utilised the services of consultants; use local news papers for bids; Have predetermine range of procurement processes; No records of bidders on abuse against SCM; No records on cases on fraud, corruption and defaulters on SCM	Source to contractors Use consultants No record of bid committees	2
Striving to a high level of monitoring spending patterns on the types of goods and services; Undefined lead times for inventory to put goods in stock; low rate of internal monitoring systems; Checking of assets is done yearly; Disposal of assets is common by selling through auction sales; Low rate of risk identification and monitoring systems etc	Strive for high Performance; Undefined lead times; Sells assets through auction sales; low rate of risk identification	3
Links IDP to SCM through procurement; Have municipal service delivery budget implementation plan; low level of public-private partnerships	Procurement through IDP, No SDBIP	4

Table 11. Sub-categories and categories of themes.

Codes	Sub-Category	Category	Theme
1	Strategic planning; Specification	Demand Management	Inefficient planning and no proper specifications
2	Sourcing Use of consultants Bid committees Range of procurement Training and workshops	Acquisition Management	Have attended training but cannot fully implement
3	Delivery lead times Auction Monitoring performance; Types of risk	Logistics, Disposal, Risk and Performance Management	No defined lead time for deliveries and sales through auction
4	Use IDP for procurement	SCM links to IDP	All procurement items are from the IDP document

respondents).

For example, an inspection of vouchers submitted for payment with the centralised creditors Payment (CCP) office of the North West provincial government showed that over 90% of procurement by departments was below R.200 000-00. Procurement below this limit is not subjected to SCM guidelines for open tender or preferential procurement system. Officials often approve the lowest quotes. This practice is one of the reasons for poor service delivery by Departments.

This finding corresponds with existing evidence that public buyers prefer to renew tender contracts than issueing new contracts (Jones, 1997). This further confirmed the results of a Danish study (Konkurrencestyrelsen, 1997), that revealed that public rules are being circumvented by public buyers through: dividing contracts into smaller amounts in order to avoid advertisements by the officials.

The claim that lack of clarity on SCM guidelines was a reason for non-compliance with the procurement procedures was supported by 69% of the respondents, while 72% of the respondents confirmed that Lack of suppliers' knowledge about SCM regulations and policies prevented them from complaining about irregularities of SCM officials. Furthermore, lack of technical know-how was identified as another factor that contributed to non-compliance with SCM procedures and guidelines (77%). This result was also similar to that of non-compliance of public procurement directives in the European Union (De Boer and Telgen, 1998).

The empirical results revealed that bidding policies as promulgated in the public procurement Act (RSA, 2003b) were lowly implemented in the municipalities. The effect of this was lack of effective monitoring of spending on goods and services (43%) and lack of appropriate standards of internal control and warehouse management (53%). In addition, it was found that, there was no regular checking of assets (a total rating of 73.3%); and that risk allocation was least done (a total rating of 63.4%).

The analysis of the data further revealed that, SCM officials and suppliers colluded to defraud the government. And as a way to circumvent the procedures, the results indicated that most suppliers and SCM officials preferred renewal of existing contracts to issuing of new contracts (51%).

That notwithstanding, needs assessment (demand) precedes the implementation of SCM (RSA, 2005a:). The objective is to ensure that goods and services delivered comply with specifications of the identified needs. However, it was observed from the study that the municipalities in the investigation did not have a demand management team (77%).

Also, the empirical results reveal that municipalities have not fully implemented an IDP (adoption rated at 46.7%). This is in spite of it playing a critical role to economic development through increased involvement of local communities. Employing local contractors and local manpower in the municipalities, creates jobs and leads to economic development. Despite this, it was found that, municipal services were not delivered through private companies (a total rating of 86.7%) and, nor, through public-private partnerships (a total rating of 60%).

From both the content analysis and the descriptive statistics, the implementation of the supply chain management practices in the municipalities is far from satisfactory.

Conclusions

The implementation of SCM currently occupies centre stage in the financial management reform process in the public sector in South Africa. The South African government has adopted integrated SCM in its public procurement policy. Integrated SCM aims to add value at each stage of the process from demand of goods or services to their acquisition, managing the logistics process and finally, after use, to their disposal. The study reveals that the implementation of supply chain management practices in local municipalities within the Central District of North West province is far from satisfactory. However, there are linkages between SCM and Integrated Development Planning (IDP) in the municipalities in the study.

Challenges facing SCM implementation

The municipalities in the Central district of the North West province, South Africa, face a number of challenges. These challenges include the following.

Bid Committees

The bid committees are an important element of the supply chain process. Bids should be evaluated according to the criteria specified in the bid document. According to section two of PPPFA (Act No 5 of 2000), bids must be evaluated according to the preference point systems. Awarding of points should be clearly specified in the invitation to submit a bid. The SCM policy stipulates three bid committees for the execution of SCM functions. These include: Bid specification committee, bid adjudication committee and the bid evaluation committee. The municipalities do not have the three bid committees.

Supply chain integration

The need exists for the different stages in the chain to be integrated. Municipal operations functions independent with allocated resources and set objectives. Independent operations can each be seen as a supply chain. Based on the findings of the study, the municipalities are facing of challenge of integrating the operations to achieve cost minimization.

Training of municipal personnel

Municipal officers responsible for the implementation of SCM have attended a number of training and workshop on SCM. But the rate of implementation is still low. The municipalities are facing a challenge of application of the concept of SCM as well as the legislative requirements binding SCM.

Recommendations

Based on the findings, we recommend, (i) greater sharing of information among those tasked with the implementation of the SCM through the use of technology (ii) establishment of a structure for the implementation of SCM, and in particular structures for public-private partnerships in service delivery (iii) training of municipal employees tasked with the implementation of SCM and (iv) stricter application of the public procurement and the Municipal Finance Management ACTs. For further research, we recommend the replication of the study to other municipalities in South Africa to obtain the situation regarding the implementation of supply chain management practices.

REFERENCES

Anon. (2003). 'Our Companies, Sainsbury's'. http://www.jsainsbury.co.uk/about/operation_supermarket.htm: Accessed 23 February

Attaran M (2004). "Nurturing the supply chain", Industrial Management,

46(5): 16-21.
De Boer L, J Telgen (1998). Purchasing Practice in Dutch Municipalities", Int. J. Purchasing and Materials Manage, 34(2) 31-36.
Daugherty PJ, Richey RG, Genchev SE, Chen H(2005). "Reverse logistics: superior performance through focused resource commitments to information technology", Transportation Research: Part E, 41(2): 77-93.
Hendricks KB, Singhal VR (2005). "Association between supply chain glitches and operating performance", Management Science, 51(5): 695-711.
Holmberg SA (2000). 'Systems perspective on supply chain measurements', Int. J. Phys Distribution and Logistics Manag., 10: 847: 868
Hugo WMJ, Badenhorst-Weiss JA, Van Rooyen DC (2002). Purchasing and supply management, 3rd edition. Pretoria: Van Schaik.
Ireland RD, Webb JW (2007). "A multi-theoretic perspective on trust and power in strategic supply chains", J. Operations Manage, 25 (2): 482-97.
Mkhize Z (2004). 'Supply Chain Management Conference: Transforming Government Procurement System', Durban, Republic of South Africa: 22 – 23 November.
Lewin K (1951). Field Theory in Social Science, Harper Row, London.
OGC (2005). Office of Government of Commerce. ': Supply Chain Management in Public Sector procurement: A Guide version: http.www.ogc.gov.uk/documents/scm-final-june05.pdf. Accessed 5 February 2005.
Republic of South Africa. (2003). National Treasury, Policy Strategy to guide uniformity in Procurement reforms processes in government.
Republic of South Africa. (2005). National Treasury, MFMA Circular No 13: Municipal Finance Management Act No 56 of 2003. Service Delivery and Budget Implementation Plan.
Republic of South Africa. (2005). National Treasury, Supply Chain Management: A guide for accounting officers and municipal entities.
Republic of South Africa. (2005). Local Government: Municipal Finance Management Act, 1990. Supply Chain Management Regulations. Government Gazette, 27636, May 30, Vol 479, Notice 868 of 2005.
Republic of South Africa. (2003). Regulations in Terms of Public Financial Management Act, 1999: Framework for Supply Chain Management. Government Gazette, 25767, Dec 5 Regulatory Gazette No. 1734.
Republic of South Africa. (2003). White Paper on Western Cape: Asset Management Review. Http://www.capegateway.gov.za/text/2003/asset-management.pdf : 23 January 2006.
Republic of South Africa. (2003). Local Government, Municipal Service Delivery guides. http://www.etu.org.za/toolbox/docs/localgov/munservice.html-23k: Accessed 21 February 2006.
Republic of South Africa. (2004) Department of Public Service and Administration: Public-Private Partnership Manua,l 3: 1. http://www.dpsa.gov.za/documents/service_delivery_review/vol3ed1/public%20private%20partnerships%20deliver.pdf: Accessed 23 February, 2006.
Republic of South Africa. (2000). Local Government: District Decentralisation planning (DDD). http: www.sarpn.org.za/documents/dooo388/p363-SAIIA: Accessed 20 February 2006.
Republic of South Africa. (2005). Local Economic Development (LED), Strategy for IDP. http://www.sacities.net/2005/led_strategic_plan.pdf. Accessed 13 February 2006.
SAMDI. (2005). Supply Chain Management: A guide for accounting officers and municipal entitie', Course Manual.
Stock JR, Lambert DM (2001). 'Strategic Logistics Management', McGraw-Hill– Irwin.