
COLLABORATIVE RELATIONSHIPS, PROCUREMENT PRACTICES AND SUPPLY CHAIN PERFORMANCE: THE CASE OF SMALL AND MEDIUM ENTERPRISES IN UGANDA

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Abstract: Well established procurement systems and collaborative relationships are essential in realising organisational goals and improved supply chain performance. However, no empirical evidence supports this view in Uganda. This chapter attempts to fill this gap by examining the relationship between procurement practices, collaborative relationships and supply chain performance of Uganda's SMEs. A cross - sectional survey design was used. Zero order correlations were used to determine the magnitude and direction of the relationship between the variables. A multiple regression model was used to determine the percentage of variance explained in supply chain performance. The findings revealed that procurement practices and collaborative relationships were significant predictors accounting for 29.6% of the variance in SME supply chain performance. Implications of findings for SME owners/managers and policy makers include putting in place systems to support collaborative relationships and improve procurement practices to ensure professionalism such that timely deliveries, flexibility and customer satisfaction are realised.

Keywords: collaborative relationships; procurement practices; supply chain performance; SMEs; Uganda.

INTRODUCTION

The need to be competitive, flexible and efficient has forced companies to enter collaborative relationships with suppliers and customers (Hines and Lammings, 2000; Carr and Smeltzer, 1999). This has been necessitated by today's competitive situations where true competitive battles are fought along a network of cooperating companies.

These competitive battles are fought along supply chains, implying that a company is as strong as its weakest supply chain partner (Veludo et al., 2004). This chain-chain competition has started to take over enterprise-enterprise competition, although in less developed economies, enterprise-enterprise competition still exists on a widespread scale. Forward-looking enterprises today are dynamic; they collaborate with suppliers,

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customers and even with competitors; share information and knowledge aiming at creating collaborative supply chains that are capable of competing, if not leading in a particular industry. Hence, gaining a competitive edge in such a cut-throat environment becomes increasingly difficult, if not impossible.

Collaboration is a value adding resource for firms seeking to reduce costs, increase their agility and satisfy their clients (Spekman et al., 1994). Collaborative relationships revitalise information flows which contribute to the lowering of enterprise operational expenses and collaborating partners to proactively adjust their operations to the market trends, thereby helping to mitigate losses and increase supply chain agility. Whereas this position is consistent with studies conducted in Europe (Giunipero and Flint, 2001), little research has been conducted in Sub-Saharan Africa, where SMEs dominate the economy to corroborate these findings.

Anecdotal evidence from Uganda reveals that Small and Medium Enterprises (SMEs) tend to suffer from collaborative constraints, unprofessional procurement practices, and information technology inaccessibility.¹ This has led to high transaction and order processing costs, inadequate access to vital information, ineffective logistics and production support, which has negatively affected their ability to grow, attain economies of scale and minimise costs, thereby improving supply chain performance. A study carried out on purchasing practices in Botswana established that the purchasing and supply chain function in some organisations is not regarded as a profession and as a result purchasing activities are done by various departments with no purchasing policy manuals (Msimangira, 2003).

A number of SMEs in Uganda are run under the notion that what the seller gains the buyer must lose, that is, the “we win – you lose” type of game. Under this management bias, purchasing management is charged with the responsibility of obtaining the best purchase at the lowest possible price. This is usually achieved by setting suppliers to compete on price. The buyer could also adopt an adversarial posture with the ultimate objective of bullying the seller/supplier to accept his or her purchase terms. The adversarial posture brings power issues into the supply chain for instance: the size of the seller/buyer, business motives, resource envelope etc. could influence the outcomes of this power game one-way or the other. Therefore the strong will survive while the weak will be left to die. The ecology of Uganda’s business will therefore not be sustained by the use of the adversarial relations approach, which creates maximum mistrust in the purchasing function.

Although previous attempts have been made to predict supply chain performance, no single study has developed a comprehensive model that relates collaborative relationships, procurement practices and supply chain performance in SMEs in Uganda. The purpose of this study is to empirically test a framework identifying the relationships among collaborative relationships, procurement practices and supply chain performance with special emphasis on SMEs in Uganda. Although the needs and operating environment of SMEs are very different from those of large firms, there is a limited literature regarding the use of collaborative relationships and professional procurement practices and their impact on the supply chain performance of SMEs in emerging market economies like Uganda. SMEs have significant impacts on supply chain

performance, where they may serve the roles of suppliers, distributors, producers and customers (Hong and Jeong, 2006). In several emerging countries, SMEs form the largest group of manufacturing firms which essentially provide specialty manufacturing and support services to large firms. SMEs also play a very crucial role in the economies of most emerging nations from the viewpoint of generating employment and economic growth. They account for more than half of the employment and added value in most countries (UNCTAD, 1993). In Uganda, SMEs employ about 90% of the non-farming population and contribute 21% of the National GDP. SMEs are the primary vehicles for the creation of employment and income generation through self – employment and are, therefore, the principal instrument for alleviating poverty in Uganda. SMEs also provide the economy with a continuous supply of ideas, skills, and innovation necessary to promote competition and efficient allocation of scarce resources. SMEs are increasingly playing a strategic role in economic growth and development through their contribution in the creation of wealth, employment, and income generation. In more developed economies, the dynamic arguments for the existence of SMEs have been stressed in terms of their being more innovative and constituting a seedbed for the development of new firms. SMEs also act as a vital driving force in economic activity by providing the required downstream support to the large-scale industrial sector. In view of the fact that the success of small business has a direct impact on the national economy, this chapter seeks to add to the body of knowledge by providing new data and empirical insights into the relationship between collaborative relationships, procurement practices and supply chain performance of SMEs operating in Uganda.

LITERATURE REVIEW AND HYPOTHESES

Collaborative relationships and supply chain performance

The first research hypothesis relates to a casual relationship between collaborative relationships and supply chain performance. This relationships is theoretically supported in literature by Simchi-Levi et al. (2002, p.5) who argue that “collaborative partnerships between suppliers and manufacturers may have a significant impact on supply chain performance”. According to Simatupang and Sridharan (2002), the constructs of collaborative relationships are information sharing, decision synchronisation and incentive alignment. Collaboration aims at win – win situations where partners engage in joint efforts through information exchange. Collaborating between supply results in substantial cost savings, flexibility and reduced lead time; these aspects lead to improved supply chain management and performance (Doherty, 2001; Selen and Soliman, 2002).

H1: Collaborative relationships have a positive relationship on supply chain performance.

Procurement practices and supply chain performance

The second research hypothesis relates to a casual relationship between procurement practices and supply chain performance. According to Carr (1996), the constructs of procurement practices are strategic purchasing, risk taking and knowledge and skills. Ammer (1989) asserts that in order for the purchasing function to make strategic contributions, it must be willing to take risks. Ability to take risks depends on the development of skills necessary to enhance decision making in the purchasing function. Taking calculated risks increases

knowledge and enhances better decision making. Strategic purchasing involves planning, evaluating, implementing and controlling the operational activities of the purchasing function in an effort to meet the objectives of the firm (Carr and Smeltzer, 1997). Handling strategic purchasing, requires a high degree of purchasing knowledge and skills. Possession of the necessary skills to interpret changes in the supplier market, offer technical assistance and assist in developing suppliers are some of the necessary skills for strategic purchasing (Keough, 1994). These skills allow the purchasing function to offer valuable inputs to the firm's planning process. As companies attempt to shift the direction of their purchasing functions from a clerical to a more strategic organisation, they must recognise the importance of skill development for purchasing professionals in the areas of general management skills and technical skills (Stuart, 1993). Improved purchasing practices improve the performance of a firm through internal and external customer satisfaction. We can, therefore, infer that when firms in a supply chain improve procurement practices, performance in the supply chain will improve.

H2: Procurement practices improve supply chain performance.

RESEARCH METHODOLOGY

A cross – sectional study design was used. Data from the respondents were collected using a self – administered questionnaire that was distributed to 752 SMEs in the districts of Kampala, Jinja, Wakiso and Mbarara. There is no consensus on the definition of SME, as variations exist between countries, sectors and even different governmental agencies within the same country (Yusuf and Aspinwall, 2000). In line with

small business research, this study adopted the number of employees as the base for the definition of SME. An SME is identified as one that employs fewer than 250 staff. The minimum of at least ten employees was also chosen in order to exclude micro firms that would not be suitable for the purposes of this study. The sample was selected randomly from the database at the Uganda Bureau of Statistics (UBOS). The UBOS databases include a total of 45,832 registered SMEs operating. 31,326 were small enterprises and 14,506 medium enterprises. From the total population (sample frame) of the SMEs, a sample of 377 firms was selected to represent the small enterprises and a sample of 375 to represent the medium enterprises. A total of 752 firms were selected. The selection is consistent with Krejcie and Morgan (1970). According to the Krejcie and Morgan (1970) table for determining sample sizes, a sample size of 379 is appropriate for a population of 30,000 and 375 is appropriate for a population of 15,000. Therefore, given a population of 45,832 registered SMEs in Uganda, a sample size of 752 was selected for the study. The sample was selected using simple random sampling and the unit of analysis was a firm. The questionnaire was pre – tested to ensure appropriateness in wording, format and sequencing of questions. Closed questions were used in the questionnaire. Responses were ranged on a four point scale ranging from 1 – 'strongly disagree' to 4 – 'strongly agree'. Respondents were purchasing executives, managers or persons who oversee purchasing related activities. Out of the 752 questionnaires administered, 555 were returned, giving a response rate of 73.8%. Data were analysed using the Statistical Package for Social Sciences (SPSS).

Based on literature, measures for the variables in this study were identified. 'Collaborative relationships' was measured

using constructs of information sharing, incentive alignment and decision synchronisation derived from the works of authors like Ellram (1990), Heide and John (1990), Schary and Skjott-Larsen (1995), Schorr (1992), Ellram (1996), McIntyre et al. (1998) and Beamon (1999). Scales for procurement practices came from previous research conducted by Carr (1996). Carr's (1996) initial research included survey items from previous studies (Carter and Narasimhan, 1993; Bracker and Pearson, 1986; Hendrick and Ellram, 1993) as well as new survey items developed for her study on strategic purchasing. Supply chain performance measures were derived from the works of Smith and Reece (1999), Hendricks and Singhal (1997), and Beamon (1999).

Scales were tested for reliability using the Cronbach Alpha. The overall Cronbach Alpha was 0.8287. Procurement practices had a Cronbach Alpha of 0.91, collaborative relationships 0.94 and supply chain performance 0.70. All coefficients are above 0.5, which is considered adequate according to Cronbach (1951).

RESULTS AND DISCUSSION

To establish the relationship between the variables, Spearman's correlation was applied. The results are shown in Table 1:

Results show that there are positive and significant relationships between procurement practices and supply chain

performance ($r = 0.339$, p value < 0.01); between collaborative relationships and supply chain performance ($r = 0.535$, p value < 0.01) and between procurement practices and collaborative relationships ($r = 0.450$, p value < 0.01). The correlation of collaborative relationships is higher than that of procurement practices, implying that the positive impact of collaborative relationships is stronger than that of procurement practices as far as supply chain performance of SMEs is concerned. These correlations imply that in Uganda, collaborative relationships and procurement practices have positive effects on the performance of SME supply chains.

Collaborative relationships and supply chain performance

The finding on the relationship between collaborative relationships and supply chain performance is consistent with Mentzer et al. (2000) who assert that collaboration amongst supply chain members has the ability to deliver some powerful benefits which improve supply chain performance. Some of these benefits include elimination of excess inventory, decreased lead time, increased sales, better customer service, reduced logistical service – related costs and reduction of the bullwhip effect (Stank et al., 2001; Lummus et al., 2003). Integrated supply chain operations through collaborative arrangements enable rapid response to market place changes (agility), improving supply chain performance. Our findings further shed some light on the works of McHugh

Table 1 Correlations

	(a)	(b)	(c)
(a) Procurement practices	1.000		
(b) Collaborative relationships	0.450*	1.000	
(c) Supply chain performance	0.339*	0.535*	1.000

*Correlation is significant at the 0.01 level (2-tailed).

et al. (2003), Simatupang and Sridharan (2002), and McIvor and Humphreys (2002) who contend that developing collaboration is a challenging task for supply chain members, with many challenges/difficulties associated with it. A lot of time, finances and effort have to be invested if the collaborative relationships are to work. Conflict between collaborative partners cannot be avoided and has to therefore be managed. This conflict can easily affect supply chain performance negatively. Lack of mutual trust also makes it hard for collaborative relationships to succeed and improve supply chain performance (Simatupang and Sridharan, 2002).

Procurement practices and supply chain performance

The finding on the relationship is in agreement with findings on a study undertaken in Botswana by Msimangira (2003) that established that the performance of a supply chain would be improved if management of firms in the chains enhanced professionalism in the purchasing function. McMullan (1996) also asserts that the use of information technology is used to support procurement activities and practices, enhances communication, provides information and improves purchasing knowledge and skills, increases service levels and reduces operating costs. It should be noted that if only one firm in a chain enhances procurement practices, without other chain members doing so, supply chain performance will not

be improved because the impact of the improvement will be eroded. The costs of improving procurement practices like training may not be easy for firms in less developed countries to cover, hence failure to improve procurement practices.

Regression analysis

Regression analysis was performed to establish the extent to which the two independent variables, explain the variation in the performance of SME supply chains. The results of the analysis are shown in Table 2.

From the above table, the independent and dependent variables have a linear relationship ($F = 117.299$, $\text{Sig.} = 0.000$). Collaborative relationships ($\text{sig.} = 0.000$) and procurement practices ($\text{sig.} = 0.002$) are significant predictors of SME supply chain performance. Beta coefficients are significant at the 0.01 level. We can rely on these results at the 99% confidence interval that procurement practices and collaborative relationships affect supply chain performance. A 100% change in procurement practices creates a 12.3% ($\text{Beta} = 0.123$) change in SME supply chain performance compared to a 47.9% change in SME supply chain performance created by a 100% change in collaborative relationships ($\text{Beta} = 0.479$). Collaborative relationships and procurement practices explain 29.6% variation in supply chain performance.

Table 2 Regression analysis

	Standardised coefficients (Beta)	t	Sig.	Adjusted			
	Beta			R square	R square	F	Sig. F
(Constant)		21.926	0.000	0.298	0.296	117.299	0.000
Procurement practices	0.123	3.086	0.002				
Collaborative relationships	0.479	12.005	0.000				

Dependent Variable: Supply Chain Performance.

CONCLUSIONS AND RECOMMENDATIONS

Majority of the respondent firms (56.2%) lacked formal purchasing departments. SMEs should create purchasing departments to oversee purchasing related activities and improve professionalism in the purchasing function. Absence of purchasing departments in private firms can be explained by the fact that in Uganda, focus on procurement is in the public sector. Purchasing in the private sector has been left unregulated. There is need for the Public procurement and Disposal of Asset Authority (PPDA) (that oversees public procurement) to create a unit/section to cater for aspects of procurement in the private sector. The absence of purchasing departments can also negatively affect collaborative relationships. Purchasing departments are a firm's point of contact with suppliers: contact is the first step to building collaborative relationships. The purchasing department is charged with identifying suppliers, building and maintaining collaborative relationships with them. Where there are no purchasing departments to oversee relationships with suppliers, it is hard for beneficial collaborative relationships with suppliers to exist and flourish. The purchasing department also oversees relationships with other supply chain members and works on strategies to improve the supply chain performance. Owners and managers of SMEs should be encouraged to create purchasing departments in order to ensure professionalism in the purchasing function. Other systems should also be put in place to ensure that this professionalism is realised and maintained. This may be possible through training and refresher courses in purchasing and supply chain management. These

departments should be run by qualified persons in the field of purchasing management who should be subjected to regular trainings and refresher courses to ensure that they are always updated with 'cutting-edge' knowledge and skills. Firms should also put in place systems that support and enhance purchasing risk taking, incentive alignment and information sharing.

Collaborative relationships need to be enhanced since they significantly predict SME supply chain performance. Aspects like trust and commitment, which enable relationships to thrive, should be developed by SMEs as well as other systems that support collaborative relationships. SMEs should encourage their supply chain members to also make efforts to foster collaborative relationships so that improvements are not within individual firms but across entire supply chains.

The Uganda Small Scale Industry Association (USSIA), Uganda Manufacturers Association (UMA), Uganda National Chamber of Commerce and Industry (UNCCI) and government departments should work together with SME owners or managers in order to support them and enable the implementation of systems that will support collaborative relationships and professionalism in the procurement function. The PPDA should also work with SMEs to build capacity in purchasing management through training programmes and refresher courses.

Since collaborative relationships and procurement practices explain 29.6% variation in supply chain performance, there is need to undertake future research to establish the other factors that influence the SME supply chain performance in Uganda.

REFERENCES

- Ammer, D.S. (1989) 'Top management's view of the purchasing function', *Journal of Purchasing and Materials Management*, Vol. 25, No. 3, pp.16–21.
- Beamon, B.M. (1999) 'Designing the green supply chain', *Logistics Information Management*, Vol. 12, No. 4, pp.332–342.
- Bracker, J.S. and Pearson, J.N. (1986) 'Planning and financial performance of small, mature firms', *Strategic Management Journal*, Vol. 7, pp.503–522.
- Carr, A.S. (1996) *Influencing Factors of Strategic Purchasing and Its Impact on Buyer Supplier Relationships*, Arizona State University, Unpublished Dissertation, Tempe, AZ.
- Carr, A.S. and Smeltzer, L.R. (1999) 'The relationship of strategic purchasing to supply chain management', *European Journal of Purchasing and Supply Management*, Vol. 5, No. 1, pp.43–52.
- Carter, J.R. and Narasimhan, R. (1993) *Purchasing and Materials Management's Role in Total Quality Management and Customer Satisfaction*, Center for Advanced Purchasing Studies/NAPM, Tempe, AZ.
- Cronbach, L.J. (1951) 'Coefficient alpha and the internal structure tests', *Psychometrika*, Vol. 16, pp.297–334.
- Doherty, C. (2001) 'Closing the loop', *Food Logistics*, Vol. 1, p.3.
- Ellram, L. (1990) 'The supplier selection decision in strategic partnerships', *Journal of Purchasing and Materials Management*, Vol. 26, No. 4, Fall, pp.8–14.
- Ellram, L.M. (1996) 'The use of the case study method in logistics research', *Journal of Business Logistics*, Vol. 17, No. 2, pp.93–137.
- Giunipero, L. and Flint, D.J. (2001) 'Purchasing practices in Saudi Arabia – an exploratory analysis', *International Journal of Physical Distribution and Logistics Management*, Vol. 31, No. 9, pp.674–692.
- Heide, J.B. and John, G. (1990) 'Alliances in industrial purchasing: the determinants of joint action in buyer-supplier relationships', *Journal of Marketing Research* XXVII, February, pp.24–36.
- Hendrick, T.E. and Ellram, L.M. (1993) *Strategic Supplier Partnering: An International Study*, Center for Advanced Purchasing Studies/NAPM, Tempe, AZ.
- Hendricks, K.B. and Singhal, V.R. (1997) 'Does implementing an effective TQM program actually improve operating performance? Empirical evidence from firms that have won quality awards', *Management Science Journal*, Vol. 43, No. 9, pp.1258–1274.
- Hines, P. and Lamming, R. (2000) *Value Stream Management*, Prentice-Hall, England.
- Hong, P. and Jeong, J. (2006) 'Supply chain management practices of SMEs: from a business growth perspective', *Journal of Enterprise Information Management*, Vol. 19 No. 3, pp.292–302.
- Keough, M. (1994) *Buying your Way to the Top*, Director, pp.72–75.
- Krejcie, R.V. and Morgan, D.W. (1970) 'Determining sample size for research activities', *Educational and Psychological Measurement*, Vol. 30, pp.607–610.
- Lummus, R.R., Duclos, L.K. and Vokurka, R.J. (2003) 'The impact of marketing initiatives on the supply chain', *Supply Chain Management*, Vol. 8, No. 4, pp.317–323.
- McHugh, M., Humphreys, P. and McIvor, R. (2003) 'Buyer-supplier relationships and organizational health', *Journal of Supply Chain Management*, pp.15–25.
- McIntyre, K., Smith, H., Henham, A. and Pretlove, J. (1998) 'Environmental performance indicators for integrated supply chains: the case of Xerox Ltd', *Supply Chain Management*, Vol. 3, No. 3, pp.149–156.
- McIvor, R.T. and Humphreys, P.K. (2002) 'Electronic commerce: supporting collaborative buyer-supplier relations?', *International Journal of Services Technology and Management*, Vol. 3, No. 1, pp.192–207.
- McMullan, A. (1996) 'Supply chain management practices in Asia Pacific today',

- International Journal of Physical Distribution and Logistics*, Vol. 26, No. 10, pp.79-95.
- Mentzer, J.T., Foggin, J.H. and Golicic, S.L. (2000) 'Collaboration: the enablers, impediments, and benefits', *Supply Chain Management Review*, Vol. 5, No. 6, pp.52-58.
- Msimangira, K. (2003) 'Purchasing and supply chain management practices in Botswana', *Supply Chain Management: An International Journal*, No. 8, pp.7-11.
- Pearson, J.N. and Gritzmacher, K.J. (1990) 'Integrating purchasing into strategic management', *Long Range Planning*, Vol. 23, No. 3, pp.91-99.
- Schary, B.P. and Skjott-Larsen, T. (1995) 'Managing the global supply chain', *Copenhagen Studies in Economics and Management, Series A, Handelshojkolens Forlag, Copenhagen*, No. 6.
- Schorr, J.E. (1992) *Purchasing in the 21st Century: A Guide to State-of-the-Art Techniques and Strategies*, Oliver Wight Publications, Brattleboro, VT.
- Selen, W. and Soliman, F. (2002) 'Editorial special issue: operations in today's demand chain management framework', *Journal of Operations Management*, Vol. 20, pp.667-673.
- Simatupang, T.M. and Sridharan, R. (2002) 'The collaborative supply chain', *International Journal of Logistics Management*, Vol. 13, No. 1, pp.15-30.
- Simchi-Levi, D., Kaminsky, P. and Simchi-Levi, E. (2002) *Designing and Managing the Supply Chain*, McGraw-Hill, New York, NY.
- Smith, T.M. and Reece, J.S. (1999) 'The relationship of strategy, fit, productivity, and business performance in a service setting', *Journal of Operations Management*, Vol. 17, pp.145-161.
- Spekman, R., Salmond, D. and Kamauff, J. (1994) 'At last procurement becomes strategic', *Long-Range Planning*, Vol. 27, No. 2, pp.76-84.
- Stank, T.P., Keller, S.B. and Daugherty, P.J. (2001) 'Supply chain collaboration and logistical service performance', *Journal of Business Logistics*, Vol. 22, No. 1, pp.29-48.
- Stuart, F.I. (1993) 'Supplier partnerships, influencing factors and strategic benefits', *International Journal of Purchasing and Materials Management*, Vol. 29, No. 4, pp.22-28.
- UNCTAD (1993) *UNCTAD Small- and Medium-sized Transnational Corporations*, United Nations, New York, NY.
- Veludo, M., Macbeth, D.K. and Purchase, S. (2004) 'Partnering and relationships within an international network context', *International Marketing Review*, Vol. 21, No. 2, pp.142-157.
- Yusof, S.M. and Aspinwall, E. (2000) 'Total quality management implementation frameworks: comparison and review', *Total Quality Management*, Vol. 11, No. 3, pp.281-294.

NOTE

- ¹Uganda National Chamber of Commerce and Industry (2003).

