

Suppliers' Rationalization And Lean Procurement Implementation

Geoffery Ondari Nyakagwa

Rongo University,

gondari@rongovarsity.ac.ke



Abstract – This research intended to establish the effects of rationalization of suppliers in the implementation of lean procurement. To conduct a credible study, the researcher used descriptive research method. The researcher used a structured questionnaire to collect quantitative data. Generally, the research study was conducted from seventy-five respondents out of the targeted ninety respondents across six departments of the company BAT-K. This represented 83.3%. of the respondents. Data collected was classified, tabulated and clearly illustrated by the use of tables and figures. From the basis of comparative analysis, the researcher was in a position to analyze the effects of lean procurement practices. The researcher concluded that lean procurement practice is to work with few and reliable suppliers that offer a wide range of components by reducing the supplier base and increased attention and resources to the remaining suppliers. The study recommends that organizations need to adopt lean procurement practice through supplier rationalization.

Keywords – Suppliers; Suppliers' Rationalization; Procurement; Lean Procurement; Implementation.

1. Introduction

In procurement terms, suppliers are one of the most important stakeholders (Du & Kadyova, 2016). This has been emphasized by the Porter's Model of Competitive Analysis where he views suppliers having the power to determine the effectiveness and efficiency of the organization (Porter, 1985; 1987; 1990). Since creating value and cutting waste is no longer a choice for businesses, lean procurement is becoming a strategy tool for obtaining competitive advantage and even for survival, not just for manufacturers but also for service firms (Lewis, 2000). The objective of the study was to examine the effects of rationalization of suppliers in the implementation of lean procurement at British America Tobacco, Kenya as the organization. The research question of the study was "what are the effects of rationalization of suppliers in the implementation of lean procurement at British America Tobacco, Kenya?"

2. Literature Review

Suppliers' rationalization is concerned with determining roughly how many suppliers the buying firm wants to do business with (Chartered Institute of purchasing and Supplies; 2012). It is concerned with making decisions regarding the size and the mix of the firm's supplier base (Monczka, Giunipero, Patterson & Handfield, 2009; Talluri, Decampos & Hult. 2012). Suppliers' rationalization is a conscientious effort to determine the right number of suppliers to do business with (Deshmukh, Pundir & Ganapathy, 2012; Institute for Supply Management, 2015; Kumar, 2021). It is concerned with determining a strategy that will identify the optimal number of suppliers required to fulfill the requirements to supply all purchase category (Luthubua, 2014; Chege, 2019; Otieno, 2019).

Lean procurement is an approach to procurement that focuses on maximizing value by improving efficiency and limiting waste (Soni & Kodali, 2009; Agus, 2012; Ugochukwu, Engstrom & Langstrand, 2012). It is an inventory reduction method in which a customer reduces the inventory exposure by just-in-time material shipments from the suppliers (Kua-Walker, 2010; Nyakagwa & Muthoni, 2014). Lean procurement is a dynamic practice and a philosophy that seeks to eliminate waste and continuously improve system by applying lean principles, practices and techniques in the interest of maximizing value (Agus, 2012; Piercy & Rich, 2015). The lean procurement philosophy aims at achieving cost reduction, improved quality and enhanced efficiency with less effort (Sezen & Erdogan, 2009; Lakshmanan, Nyamekye, Virolainen & Piili, 2023).

The study was based on the stakeholder theory suggests that the main reason of a business is to create as much value as possible for the stakeholders (Freeman, 1984). Stakeholder theory is a strategic management theory that looks at the relationship between an organization and others in its internal and external environment (Freeman, 1984). It also looks at how these relationships affect how the organization conducts its activities (Freeman, 1984).

3. Methodology

The study used descriptive research design which is a research design focused on providing an accurate description or picture of the status or characteristics of a situation or phenomenon (Johnson & Christensen, 2017; Siedlecki, 2020; Dubey, & Kothari, 2022). The target population in this study comprised the employees of British American Tobacco Kenya in the Procurement and supply chain department. Target population is the part of the population which the researcher wishes to generalise or draw his or her conclusions from (Kothari, 2004; Sahu, 2013; Salkind, 2017).

The study targeted 300 respondents which included an average of fifty (50) employees in each of the six (6) departments. The researcher targeted those in the procurement and supply chain department but still obtained views from those in five other supporting departments of finance, marketing, administration, production and human resource to obtain a holistic view on lean procurement in the organization.

A sample is the set of actual data sources that are drawn from a larger population of potential data sources (Matthew & Ross, 2010; Spinkard, 2017. Salkind, 2017). According to Mugenda and Mugenda (1999) a minimum of 30% of the target population should be included in the sample when dealing with heterogeneous sample. To get the sample size the study calculated 30% of the 300 of the population under the study to arrive at 90 respondents. The sample was derived as follows:

Table 1 : Sample Size

Department	Population	Sample size
Procurement and Supply chain	50	15
Finance	50	15
Marketing	50	15
Production	50	15
Human Resource	50	15
Administration	50	15
Total	300	90

In the research on Table 1, 90 respondents were sampled of the using stratified random sampling, which is a sampling technique where the population is divided into homogeneous, mutually exclusive groups called 'strata' and independent samples are then selected from each stratum (Passer, 2014; Altinay, Paraskevas, & Jang, 2015 ; Patten & Newhart, 2018). Moreover, the data was

collected using questionnaires which are set of questions to be asked from respondents, with instructions that are appropriate showing which questions are supposed to be asked, and in what order (Sreejesh, Mohapatra, & Anusree, 2014; Bordens & Abbott, 2017; Besen-Cassino & Cassino, 2018). The study used descriptive statistics, which was intended to illuminate the data, so that their core characteristic was revealed (Bowers, 2008; Weathington, Cunningham, & Pittenger, 2012; Patten & Newhart, 2018).

4. Results and Discussions

4.1 Response Rate

The research study targeted ninety (90) employees from six distinct departments of the company (BAT-K). Seventy-five (75) questionnaires were filled accordingly and returned. The researcher obtained feedback from seventy-five respondents out of the targeted ninety respondents across all the departments of the company (BAT-K). Procurement and Supply chain department registered 100% response while Finance department registered 66.7% response. Administration and Marketing departments registered 73.3% and 93.3% respectively. Finally human resource registered 80% while production department registered 86.7% response.

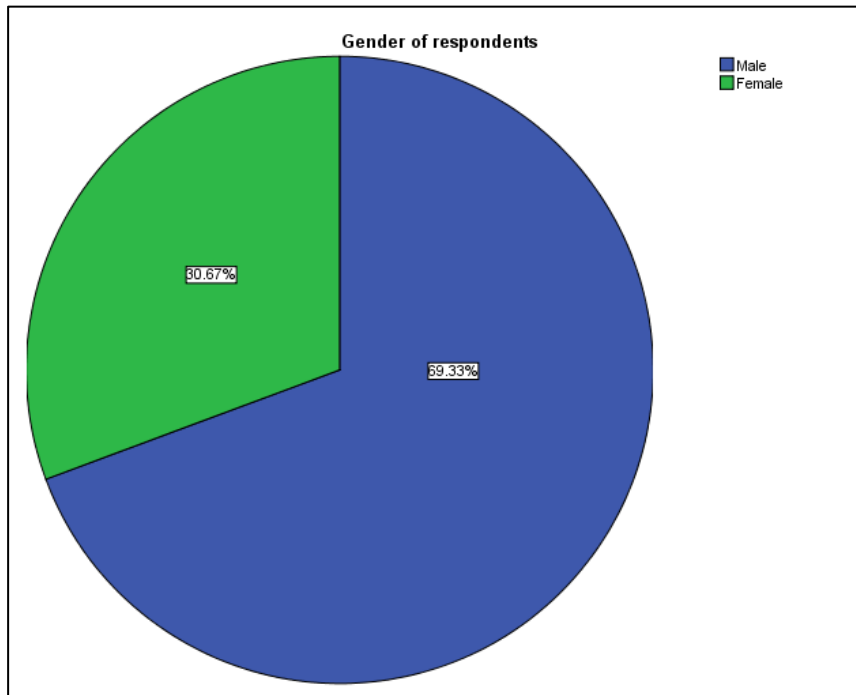
Table 2. Rate of response

Departments	Sample size	Response frequency	% Response
Procurement and Supply chain	15	15	100
Finance	15	10	66.7
Administration	15	11	73.3
Marketing	15	14	93.3
Human resource	15	12	80
Production	15	13	86.7
	90	75	83.3

With a response of 83.3% the researcher was in a position to get three quarters of response from the targeted respondents an attribute that made the whole task of data collection to be exhaustively done. The researcher had through the questionnaire requested the respondents to indicate the period of time in which they have been at British American tobacco Kenya. On Table 3, the male respondents were 69.3% while the female ones were 30.7.

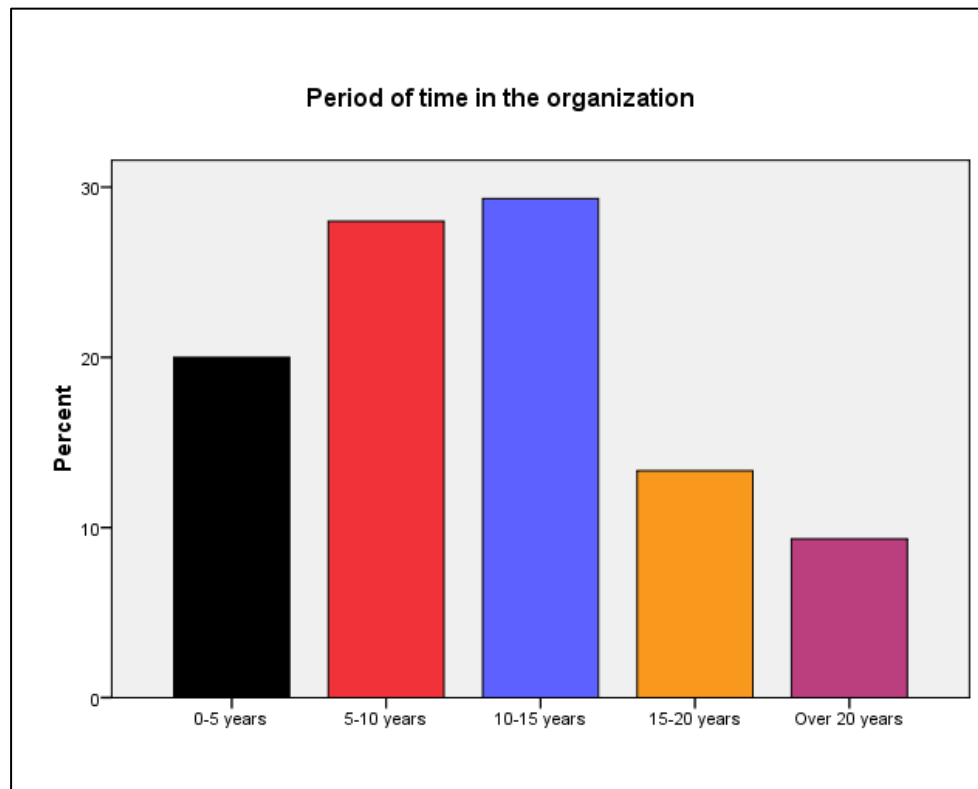
Table 3 : Gender of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	52	69.3	69.3	69.3
	Female	23	30.7	30.7	100.0
	Total	75	100.0	100.0	



According to the data collected and analyzed in the Table 4, 77.3% of the respondents have been in the organization ranging from months to 15 years. The rest of the respondents which comprise 22.7% have been there for more than 15 years.

Table 4: Period of time in the organization					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-5 years	15	20.0	20.0	20.0
	5-10 years	21	28.0	28.0	48.0
	10-15 years	22	29.3	29.3	77.3
	15-20 years	10	13.3	13.3	90.7
	Over 20 years	7	9.3	9.3	100.0
	Total	75	100.0	100.0	



A cross tabulation between the period of time in the organization by gender was done. It was realised that on the period of time in the organization of 5-10 years, 71.4% were male, while on the period of time in the organization of 15-20 years, 60% were female. The rest of the information is captured under Table 5.

Period of time in the organization by Gender Crosstabulation					
			Gender		Total
			Male	Female	
Period of time in the organization	0-5 years	Count	9	6	15
		% within Period of time in the organization	60.0%	40.0%	100.0%
	5-10 years	Count	15	6	21
		% within Period of time in the organization	71.4%	28.6%	100.0%
	10-15 years	Count	17	5	22
		% within Period of time in the organization	77.3%	22.7%	100.0%
	15-20 years	Count	4	6	10
		% within Period of time in the organization	40.0%	60.0%	100.0%
	Over 20 years	Count	7	0	7
		% within Period of time in the organization	100.0%	.0%	100.0%
Total		Count	52	23	75
		% within Period of time in the organization	69.3%	30.7%	100.0%

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.453 ^a	4	0.076
Likelihood Ratio	10.101	4	0.039
Linear-by-Linear Association	0.588	1	0.443
N of Valid Cases	75		
a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 2.15.			

Relevance of this analysis in relation to how it affects lean procurement implementation in the organization and achieving of the research objectives by the researcher, is that the findings show that the company has a balanced number of employees who are able and have diverse understanding of lean procurement trends. The organizational culture is an essential platform for the implementation of lean where a culture of sustainable and proactive improvements is characteristic for high-performing companies.

An ideal team should have good workforce training and benefits of improvement in knowledge, skills and cultural awareness. This means that these factors are the elements for a supportive organizational culture that is needed for the implementation of lean, and thus also for the implementation of lean procurement. Therefore, the researcher was interested to know what culture the employees have developed or operated in for the period of time they have been in the organization and how their stay has affected the implementation of lean procurement.

4.2 Effect of Suppliers' Rationalization on Lean Procurement Implementation

The distinct rationalization of suppliers factors the researcher sort to establish whether, there was transparent methods of prequalifying suppliers, the organization sourced goods from a single supplier, regular meetings were held with suppliers to develop a good relationship, supplier prequalification was done on yearly basis and if there was a classification of suppliers.

From the basis of findings analyzed and presented on Figure 1 below we can attest that an average percentage of 22.2 strongly agreed to the variables, 23% agreed, 16% of the respondents were not sure, 30.8% disagreed and 8% strongly disagreed to the approaches sort by the researcher.

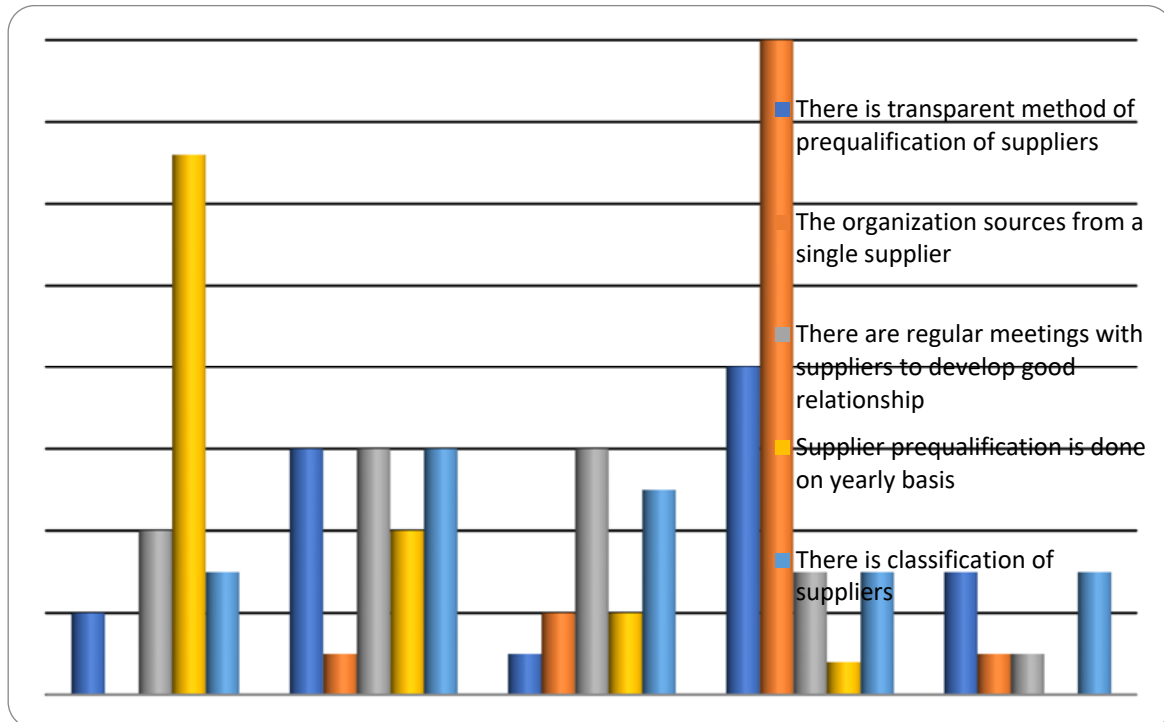


Figure 1 : Effects of Rationalization of Suppliers in the Implementation of Lean Procurement

The significance of the above research findings to the research study and objectives is that, the researcher was able to deduce that key aspects related to rationalization of suppliers were not incorporated in the activities of the organization in which case rationalization of suppliers is fundamental to the implementation of the lean procurement process. This has been manifested by the fact that over 50% percent of the respondents did not agree with having in place key elements of supplier rationalization. The lean procurement practice is to work with few and reliable suppliers that offer a wide range of components and responded by reducing the supplier base and increased attention and resources to the remaining suppliers. This means that the aim is to reduce the numbers of suppliers where an example is to eliminate the tail of the Pareto curve, where 20% of the components are delivered by 80% of the suppliers. Thus, rationalizing suppliers is important and should be done early which also eases later efforts of improvements.

To have an understanding of effects of rationalization of suppliers the researcher sort to establish whether, there was transparent methods of prequalifying suppliers, the organization sourced goods from a single supplier, regular meetings were held with suppliers to develop a good relationship, supplier prequalification was done on yearly basis and if there was a classification of suppliers. According to the research findings the researcher established that an average percentage of 22.2 strongly agreed to the variables, 23% agreed, 16% of the respondents were not sure, 30.8% disagreed and 8% strongly disagreed to the approaches sort by the researcher.

5. Conclusions and Recommendations

The lean procurement practice is to work with few and reliable suppliers that offer a wide range of components by reducing the supplier base and increased attention and resources to the remaining suppliers. This means that the aim is to reduce the number of suppliers. The study recommends that organizations need to adopt lean procurement practice through supplier rationalization. The approach can incorporate factors such as transparent methods of prequalifying suppliers, sourcing goods from a single supplier, having regular meetings with suppliers to develop a good relationship, supplier prequalification on yearly basis and last but not least a classification of suppliers.

References

- [1]. Agus, E.A. (2012) Lean production supply chain management as driver towards enhancing product quality and business performance: Case study of manufacturing companies in Malaysia. Unpublished Master Thesis, USM, Malaysia.
- [2]. Altinay, L., Paraskevas, A., & Jang, S. (2015). Planning for Research in Hospitality and Tourism (2nd ed.). Amsterdam: Butterworth Heinemann.
- [3]. Bowers, D. (2008). Medical Statistics from Scratch: An Introduction for Health Professionals (2nd ed.). West Sussex: John Wiley & Sons Ltd.
- [4]. Chartered Institute of purchasing and Supplies. (2012). Category management. CIPS Local Committee Meeting, South Wales, November 2012.
- [5]. Du, A. & Kadyova, S. (2016). Stakeholder Engagement and Start-up Company Growth. Unpublished Master Thesis, Umeå School of Business and Economics.
- [6]. Dubey, U. K. B., & Kothari, D. P. (2022). Research methodology: Techniques and trends. Philadelphia, PA: Chapman & Hall/CRC.
- [7]. Field, A. (2009). Discovering Statistics Using SPSS (3rd ed.). London: SAGE Publications Inc.
- [8]. Freeman, R. E. (1984). Strategic Management: A strategic approach. London, UK: Pitman Publishing Inc.
- [9]. Kothari, C. R. (2004). Research Methodology: Methods and Techniques (2nd ed.). New Delhi: New Age International Publishers.
- [10]. Kua-Walker, Y.A. (2010). Can a Just-In-Time Inventory System help reduce costs and increase productivity in hospitals? California State University. Sacramento, CA.
- [11]. Lakshmanan, R., Nyamekye, P., Virolainen, V.-M., & Piili, H. (2023). The convergence of lean management and additive manufacturing: Case of manufacturing industries. In Cleaner Engineering and Technology (13) 1: 100620.
- [12]. Lewis, M. A. (2000). Lean production and sustainable competitive advantage. International Journal of Operations & Production Management. 20 (8): 959–978.
- [13]. Monczka, R., Giunipero, L., Patterson, R. & Handfield, R. (2009). Sourcing and Supply Chain Management. New dehli: South Western.
- [14]. Nyakagwa, G. O. & Muthoni, D. K. (2014). Factors affecting implementation of lean procurement in multinational enterprises: A case study of British American Tobacco (Kenya). International Journal of Social Sciences and Entrepreneurship, 1 (11), 395-417.
- [15]. Passer, M. W. (2014). Research Methods : Concepts and Connections. New York, NY: Worth Publishers.
- [16]. Piercy N., Rich N. (2015). The relationship between lean operations and sustainable operations. International Journal of Operations & Production Management, 35(2), 282–315.
- [17]. Porter, M. E. (1985). Competitive advantage: Creating and sustaining superior performance. New York: Free Press.
- [18]. Porter, M. E. (1987). From competitive advantage to corporate strategy. Harvard Business Review, 65(3), 43-59.
- [19]. Porter, M. E. (1990). The competitive advantage of nations. New York: Free Press.
- [20]. Sahu, K. P. (2013). Guide for Researchers in Agricultural Field. New Delhi: Tata McGraw Hill.
- [21]. Sezen, B., & Erdogan, S. (2009), “Lean philosophy in strategic supply chain management and value creating. Journal of Global Strategic Management, Vol.05, pp. 68–72.

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- [22]. Soni, G. & Kodali R. (2009) Performance value analysis for the justification of the agile supply chain, *International Journal of Business Performance Management*, 11(1-2), 96-133.
- [23]. Sreejesh, S., Mohapatra, S., & Anusree, M. R. (2014). *Business Research Methods : An Applied Orientation*. New York: Springer International Publishing.
- [24]. Talluri, S., DeCampos, H. A., & Hult, G. T. M. (2012). Supplier Rationalization: A Sourcing Decision Model. In *Decision Sciences*. 44 (1) : 57–86.
- [25]. Ugochukwu, P., Engstrom, J. & Langstrand, J. (2012). Lean in the Supply Chain: A Literature Review, *Management and Production Engineering Review*, 3(4), 87–96.
- [26]. Weathington, B. L., Cunningham, C. J., & Pittenger, D. J. (2012). *Understanding Business Research*. Hoboken, New Jersey: John Wiley & Sons, Inc.
- [27]. Wilson, M. M. J., & Roy, R. N. (2009). Enabling lean procurement: a consolidation model for small- and medium-sized enterprises. In N. Beaumont (Ed.), *Journal of Manufacturing Technology Management* (Vol. 20, Issue 6, pp. 817–833). Emerald.