International Journal of
Supply Chain and Logistics
(IJSCL)

END USER INVOLVEMENT AND SUPPLY CHAIN PERFORMANCE IN KENYAN UNIVERSITIES, A CASE OF CHUKA UNIVERSITY, KENYA

RHODAH NZOVILA, DR. KIREMA NKANATA MBURUGU & Dr. Lucy Karimi Kirima

International Journal of Supply Chain and Logistics ISSN 2530-3983 (online)
Vol 3, Issue 3, pp 24 – 33. 2019.

www.carijournals.org

END USER INVOLVEMENT AND SUPPLY CHAIN PERFORMANCE IN KENYAN UNIVERSITIES, A CASE OF CHUKA UNIVERSITY, KENYA

[1*] Rhodah Nzovila,

[1*]Post Graduate Student, Department of Business and Economics

THE UNIVERSITY OF EMBU

* Corresponding author Email: rnzovilah@yahoo.com

[2*] Dr. Kirema Nkanata Mburugu,

Lecturer, Department of Business and Economics,

THE UNIVERSITY OF EMBU

* Lecturer's Email: nkanata.mburugu@embuni.ac.ke

[3*] Dr. Lucy Karimi Kirima

Lecturer, Department of Business and Economics,

THE UNIVERSITY OF EMBU

* Lecturer's Email:kirima.lucy@embuni.ac.ke

Abstract

Purpose: The study sought to establish the effects of end user involvement in the supply chain performance of higher learning institutions in Kenya.

Methodology: The study was conducted at Chuka University procurement department and user departments comprising of 64 respondents from user departments and procurement. The study employed cross-sectional research design. Structured questionnaires were used for data collection. In order to determine the validity and reliability of the questionnaire, pretesting of the research instruments was conducted. To establish the validity of the research instrument, content validity was used while internal consistency method was used to determine the reliability. Correlation analysis followed by multivariate regression analysis was conducted between the independent variables and the dependent variable.

Results: Results showed strong statistical significance between supply chain performance and procurement planning. The study also established that there was a strong statistical significance between supply chain performance and specification preparation. It was also established that there was strong statistical significance between supply chain performance and monitoring and evaluation. Lastly, there was strong statistical significance between supply chain performance and inspection and receipt of goods. The findings also revealed that the four independent variables under study only contributed to 63.4% of the dependent variable's outcome.

Conclusion: The study concludes that procurement planning, specification preparation, monitoring and evaluation, and inspection and receipt of goods are good measures of the end user

involvement in the effective performance of supply chain, but that more studies need to be done to unearth the hidden variables contributing to the remaining 36.6% factors/variables, in order to get a full picture of the impact of the end-users on supply chain performance.

Contributions to policy and practice: Research institutes and scholars will gain vital insights from the study when they want to research further and lastly government together with all its agencies will also gain important information that will inform the policies they come up with in future.

Keywords: *end user involvement, procurement planning, specification preparation, monitoring and evaluation, supply chain performance*

1.0 INTRODUCTION

The supply chain management concept can be traced back to ancient war times of Greek and Roman empires when military officers titled as 'Logistikas' were assigned the duties of providing services related to supply and distribution of resources (Donlon, 2009). This was done to enable the soldiers to move from their base position to a new forward position efficiently, which could be a crucial factor in determining the outcome of wars. From this historical background, it is clear that supply chain management is part of the supply chain in an organization since there are elements of supply and distribution of resources. Supply chain is the functions within and outside a company that enable the value chain to make products and provide services to the customer (Cox, 2011).

According to Mentzer (2014), the broadest visions of integrated supply chain management are usually expressed in terms of meeting the final customer's product needs. Increasingly, many organizations have begun to embrace the concept of integrated supply chain management. The performance of the supply chain is affected by different factors. One of the most important factors influencing the performance of supply chain is strategic supplier alliances (Narasimhan & Jayaram, 2008). Effective partnerships with suppliers can be a critical factor to guide supply chain management (Li, 2006). The other factor is having good relationships with customers, which are needed for successful implementation of SCM programs (Moberg, 2012).

Supply chain performance is the entire chain's ability to meet end-customer needs through product availability and responsive on-time delivery. According to Elram, (2013) it is important to distinguish performance measurement from performance management. Performance measurement is about the use of right metrics in the right place in order to know supply chain vitality.

1.1 Problem Statement

The Public Procurement Oversight Authority (2016) report identifies public universities in Kenya as key public institutions characterized by poor performance in supply chain, flaws in the acquisition of materials, fraud in procurement contracts and consequently lacked value for money. The researcher believes that inadequate end user involvement in the supply chain has been one of the contributing factors to poor supply chain performance within Kenyan universities. End users can be involved in various supply chain stages such as planning, specification of goods and services, receipt and inspection of goods, monitoring and evaluation of supplies contract to ensure that their needs are fully met to their expectations.

A number of studies have been conducted on supply chain performance. Gwako (2008), studied supply chain performance measurement in the Kenyan aviation industry specifically focusing on Kenya Airways. The research findings indicate that the company measures several dimensions of performance within their supply chain ranging from quality, effectiveness of the procurement activities, stock turnover, number of supplies rejections, cost, flexibility, among others. These dimensions are measured regularly, and the results obtained communicated to the internal channel members, as well as, the company's suppliers.

Onyango (2011) studied supply chain management practices and performance in cement industry in Kenya. Mogire (2011) conducted research on supply chain practices in five star hotels in Kenya. The studies point to a lack of involvement of end users in the supply chain performance. Minimal research on the effect of end user involvement and supply chain performance in public universities in Kenya exist. Therefore, this study sought to address this knowledge gap by establishing the effect of end user involvement on the supply chain performance in Kenyan Universities, a case of Chuka University, Kenya.

1.2 Objectives of the Study

i. To establish the effect of end user involvement in procurement planning on supply chain performance in Kenyan Universities, a Case of Chuka University, Kenya.
ii. To determine the effect of end user involvement in specification preparation on supply chain performance in Kenyan Universities, a Case of Chuka University, Kenya.
iii. To examine the effect of end user involvement in monitoring and evaluation on supply chain performance in Kenyan Universities, a Case of Chuka University, Kenya.

2.0 LITERATURE REVIEW

2.1 Procurement Planning

Procurement planning refers to the process of deciding what to purchase, when and from what sources. The role of procurement planning is to assist public service managers in formulating and executing a procurement strategy that will: identify all stakeholders in the acquisition of the required services and goods, who then may be appropriately consulted, and any legal obligations coupled with stakeholders ensuring compliance (Deme, 2009).

2.1 Specification Preparation

According to Otter and Geddes (2010), specification in procurement refers to characteristics of a commodity or service required or desired. They are the explicit requirements furnished with a solicitation upon which purchases order or contract is to be based. Specifications set forth the characteristics of the property and services to be purchased so as to enable the vendor to determine and understand that which is to be supplied.

2.3 Monitoring and Evaluation

Republic of South Africa (2008), identified monitoring in supply chain management as a continuing function that uses systematic collection of data on specified indicators to provide management and the main stakeholders of an ongoing development intervention with indications

of the extent of progress and achievement of objectives in supply chain. On the other hand, evaluation in supply chain represents a systematic and objective assessment of an on-going or completed project, programme or supply contract.

2.4 Receipt and Inspection of Goods

According to the Catholic Relief Services, (2011) inspections of goods, services and works, handling delivery, dispatches and returns is an integral part of the supply chain. Mangesho (2013) advises that effectiveness in a supply contract is highly dependent on regular random inspections of the supplied goods and/or services during the contract period to ensure that they meet specification and are of a suitable standard.

2.5 Conceptual Framework

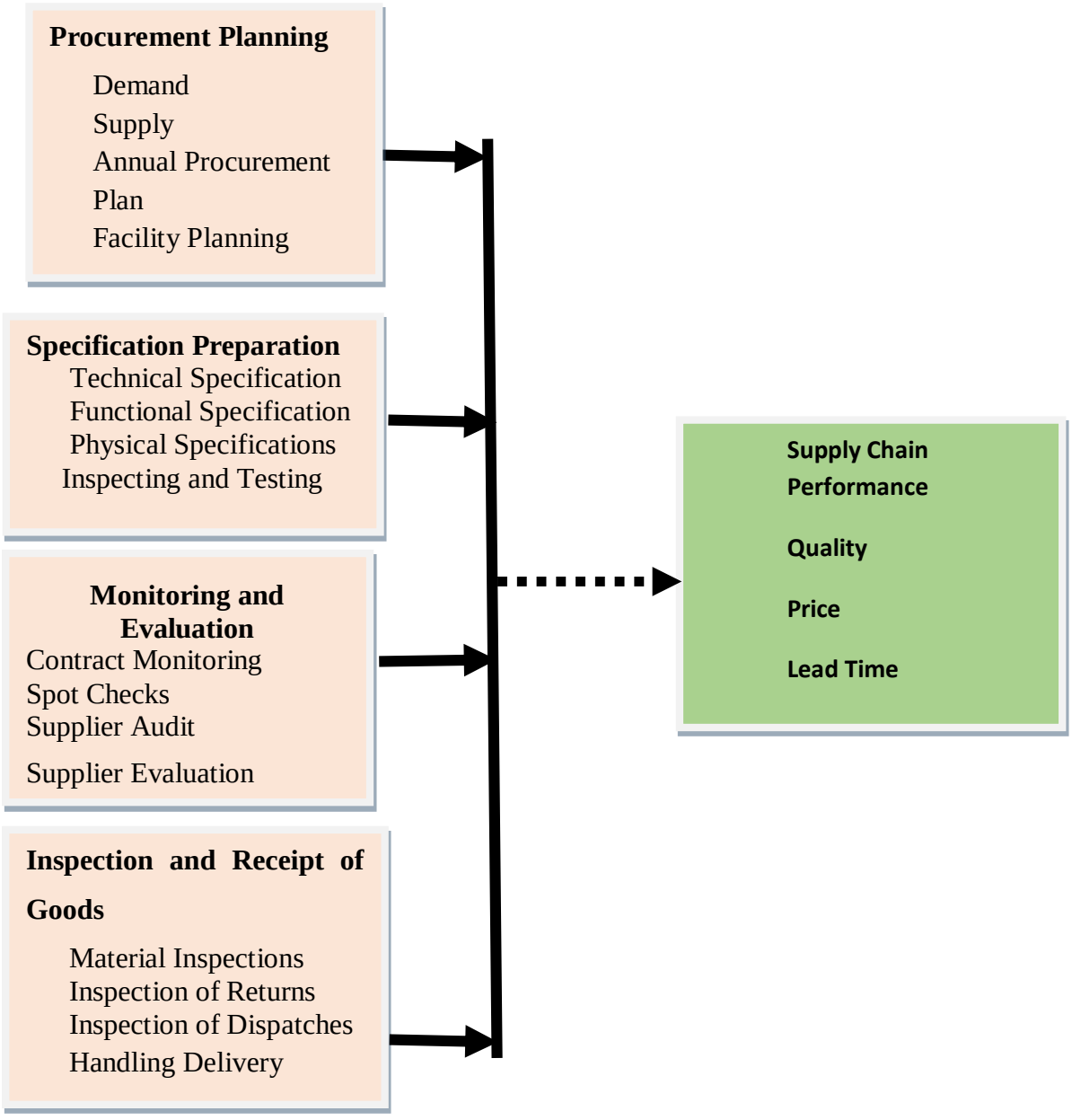

Figure 1: Conceptual framework on end user involvement and supply chain performance at Chuka University, Kenya.

3.0 METHODOLOGY

The study was conducted at Chuka University procurement department and user departments comprising of 64 respondents from user departments and procurement. The study employed cross-sectional research design. Structured questionnaires were used for data collection. In order to determine the validity and reliability of the questionnaire, pretesting of the research instruments was conducted. To establish the validity of the research instrument, content validity was used while internal consistency method was used to determine the reliability. Correlation analysis followed by multivariate regression analysis was conducted between the independent variables and the dependent variable.

4.0 RESULTS FINDINGS

4.1 Introduction

4.1.1 Correlation between Procurement Planning and Supply Chain Performance

Correlation analysis was conducted in order to ascertain the relationship and strength of association between procurement planning and supply chain performance. The findings are presented in Table 1.

Table 1: Correlation between Procurement Planning and Supply Chain Performance

		Supply Chain Performance
Procurement Planning	Pearson Correlation	.714**
	Sig. (2-tailed)	0.00
	N	64

** Correlation is significant at the 0.05 level (2-tailed).

The findings in Table 1 showed the correlation analysis results of the relationship between procurement planning and supply chain performance, Pearson correlation coefficient computed and tested at 5% significance level. The results indicate that there is a positive relationship at 71.4% between procurement planning and supply chain performance. In addition, the researcher found the coefficient was significant at 5% level. This implied that supply chain performance can only improve if procurement planning is done properly. The study findings are consistent with a study by Apopa (2009) which found that organizations have not been able to plan their procurement because they lack the structures and procedures needed hence leading to poor supply chain performance.

4.1.2 Correlation between Specification Preparation and Supply Chain Performance

Correlation analysis was conducted in order to ascertain the relationship and strength of association between specification preparation and supply chain performance. The findings are presented in Table 2

Table 2: Correlation between Specification Preparation and Supply Chain Performance

		Supply Chain Performance
Specification Preparation	Pearson Correlation	.728**
	Sig. (2-tailed)	0.00
	N	64

** Correlation is significant at the 0.05 level (2-tailed).

The findings in Table 2 showed the correlation analysis outcome of the relationship between specification preparation and supply chain performance, Pearson correlation coefficient computed and tested at 5% significance level. The results indicate that there was a positive relationship at 72.8% between specification preparation and supply chain performance. In addition, the researcher found the coefficient was significant at 5% level. This implied that supply chain performance can only improve if specification preparation is done properly.

The study findings were consistent with those of Erickson (2015) who found that user departments have not been able to prepare their specification because they lack the skills needed hence leading to poor supply chain performance.

4.1.3 Correlation between Monitoring and Evaluation and Supply Chain Performance

Correlation analysis was conducted in order to ascertain the relationship and strength of association between monitoring and evaluation and supply chain performance. The findings are presented in Table 3.

Table 3: Correlation between Monitoring and Evaluation and Supply Chain Performance

		Supply Chain Performance
Monitoring and Evaluation	Pearson Correlation	.714**
	Sig. (2-tailed)	0.00
	N	64

** Correlation is significant at the 0.05 level (2-tailed).

The findings in Table 3 showed the correlation analysis results of the relationship between monitoring and evaluation and supply chain performance, Pearson correlation coefficient computed and tested at 5% significance level. The results indicate that there was a positive relationship at 71.4% between monitoring and evaluation and supply chain performance. In addition, the researcher found the coefficient was significant at 5% level. This implied that supply chain performance can only improve if monitoring and evaluation is done properly.

The study findings were consistent with those of Deme (2009) who found that universities have not been able to monitor and evaluate their procurement operations because they lack the required infrastructure hence leading to poor supply chain performance.

4.1.4 Correlation between Inspection and Receipt of Goods and Supply Chain Performance

Correlation analysis was conducted in order to ascertain the relationship and strength of association between inspection and receipt of goods and supply chain performance. The findings are presented in Table 4

Table 4: Correlation between Inspection and Receipt of Goods and Supply Chain Performance

		Supply Chain Performance
Inspection and Receipt of Goods	Pearson Correlation	.737**
	Sig. (2-tailed)	0.00
	N	64

** Correlation is significant at the 0.05 level (2-tailed).

The findings in Table 4 showed the correlation analysis results of the relationship between inspection and receipt of goods and supply chain performance, Pearson correlation coefficient computed and tested at 5% significance level. The results indicate that there was a positive relationship at 73.7% between inspection and receipt of goods and supply chain performance. In addition, the researcher found the coefficient was significant at 5% level. This implied that supply chain performance can only improve if inspection and receipt of goods is done properly. The study findings were consistent with a study by Kiage (2013) which found that universities have not been able to inspect goods because they lack the required frameworks hence leading to poor supply chain performance.

4.2 Multiple Regression Analysis

In this study multivariate regression analysis was used to determine the significance of the relationship between the dependent variable and all the independent variables pooled together. Regression analysis was conducted to find the proportion in the dependent variable (supply chain performance) which can be predicted from the independent variables (procurement planning, specification preparation, monitoring and evaluation, inspection and receipt of goods).

The linear regression model;

$$\mathbf{Y= \beta_0+ \beta_1X_1+\beta_2X_2+\beta_3X_3 +\beta_4X_4 +\varepsilon}$$

Where:

Y= Supply Chain Performance, **βo**= Constant Coefficient, $\mathbf{X_1}$= Procurement Planning, $\mathbf{X_2}$= Specification Preparation, $\mathbf{X_3}$= Monitoring and Evaluation, $\mathbf{X_4}$= Inspection and Receipt of Goods, **ε** = Random Error Term

4.2.1 Model Summary

The results of coefficient of determination (R^2) are presented in Table 5

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.796[a]	0.634	0.622	0.203452

a) Predictors: (Constant), Procurement Planning, Specification Preparation, Monitoring and Evaluation, Inspection and Receipt of Goods

b) Dependent Variable: Supply Chain Performance

The results in Table 5 presented the regression coefficient of independent variables against dependent variable. The results of regression analysis revealed there was a significant positive relationship between dependent variable and the independent variable. R-Square is a commonly used statistic to evaluate model fit. R^2 is 1 minus the ratio of residual variability. The coefficient of determination, R^2 was 0.634. R^2 value of 0.634 means that 63.4% of the corresponding variation in supply chain performance can be explained or predicted by (procurement planning, specification preparation, monitoring and evaluation, inspection and receipt of goods) which indicated that the model fitted the study data. The results of regression analysis revealed that there was a significant positive relationship between dependent variable and independent variable at 63.4%.

4.2.2 ANOVA Results

Table 6 presents the ANOVA results to show the overall significance of the regression model.

Table 6: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.167	4	2.292	25.752	.000[b]
	Residual	5.298	59	0.089		
	Total	14.465	63			

a) Predictors: (Constant), Procurement Planning, Specification Preparation, Monitoring and Evaluation, Inspection and Receipt of Goods

b) Dependent Variable: Supply Chain Performance

The results in Table 6 show that the significance value is 0.000 which is less than 0.05 thus the model is statistically significance in predicting how procurement planning, specification preparation, monitoring and evaluation, inspection and receipt of goods influence supply chain performance. The F critical at 5% level of significance was 15.65. Since F calculated which can be noted from the ANOVA table above is 25.752 which is greater than the F critical (value =15.65), this shows that the overall model was significant. The study therefore establishes that; procurement planning, specification preparation, monitoring and evaluation, inspection and receipt of goods influence supply chain performance. These results agree with Burger and Hawkesworth (2011) results which indicated a positive and significant influence of end user involvement on supply chain performance.

4.2.3 Regression Coefficients

The coefficients of the variables used in the study are presented in Table 7

Table 7: Coefficients of Determination

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.967	0.218		9.022	0.000
	Procurement Planning	0.358	0.049	0.568	7.327	0.000
	Specification Preparation	0.132	0.056	0.152	2.364	0.000
	Monitoring and Evaluation	0.121	0.032	0.27	3.835	0.020
	Inspection and Receipt of Goods	0.05	0.05	0.074	0.998	0.030

a) Predictors: (Constant), Procurement Planning, Specification Preparation, Monitoring and Evaluation, Inspection and Receipt of Goods

b) Dependent Variable: Supply Chain Performance

The data in the Table 7 indicates that the established regression equation model was as shown in this equation.

$$\mathbf{Y=1.967+0.358X_1+0.132X_2+0.121X_3+0.05X_4}$$

The regression equation above has established that taking all factors into account (procurement planning, specification preparation, monitoring and evaluation, inspection and receipt of goods) constant at zero, supply chain performance will be an index of 1.967. The study found that a unit increase in procurement planning will lead to a 0.358 increase in supply chain performance. The P-value was 0.000 and hence the relationship was significant since the p-value was lower than 0.05.

The findings presented also shows that taking all other independent variables at zero, a unit increase in specification preparation will lead to a 0.132 increase in supply chain performance. The P-value was 0.02 which is less 0.05 and thus the relationship was significant. In addition, the study found that a unit increase in monitoring and evaluation will lead to a 0.121 increase in supply chain performance. The P-value was 0.000 and thus the relationship was significant.

The study also found that a unit increase in inspection and receipt of goods will lead to a 0.05 increase in supply chain performance. The P-value was 0.03 and thus the relationship was significant. The results were consistent with those of Shalle (2016) which found that there was a positive relationship between end user involvement and supply chain performance. Scott (2014) was of the school of thought that end user involvement affects supply chain performance. In support of the above sentiments Tan (2011) reiterated that procurement performance is highly dependent on end user involvement.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Based on the study findings, the study concludes that supply chain performance can be improved by procurement planning, specification preparation, monitoring and evaluation, inspection and receipt of goods.

5.2 Recommendations

The study recommends that for universities to ensure that they have better supply chain performance they should focus more on using procurement planning so as to ascertain demand and supply capabilities of their supply chain to ensure that there is consistency of lead time. In the same regard, they should involve suppliers early enough to enable them to have a proper procurement plan.

REFERENCES

Amit, A. (2014). "*Sustainability Strategies in Supply Chain Management*". Electronic thesis and dissertations.

Apopa, V. A. (2009). *Influence of Supplier Development in decision making in Public sector*. MSC Project. JKUAT.

Cooper, D. R & Schindler, P.S. (2003). *Business Research Methods* (8th edn). New York: McGraw-Hill.

Cox, J. F., Blackstone, J. H., & Spencer, M.S. (2011). *APICS Dictionary: American Production and Inventory Control Society.* Falls Church, Virginia.

Deme, A. (2009). Why Is It Important to Undertake Good Planning Before Undertaking a Procurement Process*? FMI IGF Journal* 21(1), 11 – 15.

Erickson, E. (2015). Partnering in engineering projects: Four dimensions of supply chain integration. *Journal of Purchasing and Supply Management* 21(1), 38-50

Gwako, Z.O. (2008). *Supply chain performance measurement in the aviation industry;* A Case Study of Kenya Airways Limited, Unpublished MBA Project, University of Nairobi

Kiage, J. (2013). Factors Affecting Procurement Performance: A Case of Ministry of Energy. *International Journal of Business and Commerce* 3(1), 54-70.

Lu, Y. & Zhuang, X. (2014). *The impact of gender and working experience on intertemporal choices.* Physica 4(9), 146–153.

Mangesho P.E. (2013). *Research Paper on "The Impact of Tendering System on Effectiveness and Efficient Competitive Procurement in Tanzania Public Institutions*.

Mentzer, J. T. (2014). Defining Supply Chain Management" Journal of Business Logistics, 22(2), 1-25.

Moberg, C. R. (2012). Identifying Antecedents of Information Exchange within Supply Chains. *International Journal of Physical Distribution and Logistics* 32(9), 755-770.

ogire E. (2011) *Supply Chain Management Practices in Five Star Hotels in Kenya.* Unpublished MBA Project., University of Nairobi.

Otter, C. & Geddes, R. (2010). Guidelines for Writing Effective Specification. Boise: Department of Purchasing in the State of Idaho.

Scott, W. R. (2004). Institutional theory in Encyclopedia of Social Theory. Thousand Oaks, CA: Sage.

Tan, K.C. (2011). A framework of supply chain management literature. European Journal of Purchasing and Supply Management 7, 39-48.