

INFLUENCE OF LEAN SUPPLY CHAIN ON PERFORMANCE OF PUBLIC UNIVERSITIES IN KENYA

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Purpose: *The main objective of this study was to determine influence of lean supply chain on performance of Public Universities in Kenya.*

Materials and methods; *this research adopted descriptive design. A descriptive research is a method of collecting information by interviewing or administering questionnaire to a sample of individuals. Descriptive design as the most appropriate design in getting responses from respondents who participate by answering questions. The target population of this study was from employees in administration, accounts and procurement departments in public universities. The unit of observation for the study was the. Public Universities in Kenya and the unit of analyses for the study was the employees working in administration, accounts and procurement departments. This study sampled all public universities in Kenya, the researcher used census since data collection through census method gives opportunity to the researcher to have an intensive study about a problem study about a problem, census also ensure a higher degree of accuracy in data no other method is accurate like census method. The study used the most common internal consistency measure known, as Cronbach's alpha (α) in testing the reliability of the instrument. The alpha indicates the extent to which a set of test items can be treated as measuring a single latent variable. The data collected from the field was analyzed qualitatively and quantitatively. At first, data was screened to identify omissions and removal of non – answered questions. For quantitative data analysis, coding and entry was done in electronic spread sheet with the aid of Statistical Package for Social Sciences (IBM SPSS Version 23). Data generated from SPSS was analyzed using descriptive and inferential statistics whereby the output was presented using tables, pie charts and graphs.*

Results: *The study established a significant positive relationship between Lean Supply chain and Organizational Performance. This implies that an increase in on organizational performance in public universities in Kenya is likely through adoption of Lean Supply chain initiatives.*

Recommendations: *The study recommendation that Lean supply chain management requires public universities to examine every process in their supply chain since This will improve the organisation competitiveness as well as improve the organisation overall profitability.*

Keywords: *Lean Supply chain, Supply base rationalization, Framework contracting, Supply chain visibility, Continuous Improvement*

INTRODUCTION

1.1 Background of the Study

This chapter discusses the background of the study, statement of the problem, objectives, and research questions, significance of the study, the scope of the study and the limitation of the study. According to Bahjat & Osama (2014) states that Supply chain strategy is defined as a set of approaches utilized to integrate suppliers, manufacturing, warehouses, and stores so that merchandise is produced and distributed at the right quantities, to the right location, at the right time; in order to minimize system-wide costs while satisfying service level requirements. When developing the overall supply chain strategy and implementation plan, supply chain strategic factors form part of the evaluation criteria for various operational models. In addition, the strategies take into consideration the flows that need to be managed in the commercial supply chain (Cedillo & Perez-Araos, 2010)

Supply chain spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point of origin to point of consumption. A key objective of supply chain strategy is to enhance the focal firm's supply chain responsiveness with respect to its customers (Levi *at al.*, 2014). The first step in developing a supply chain strategy is to consider the nature of the demand for an organization's product, that is, the supply chain strategy is a strategic choice that the firm makes.

Lean supply chain strategy is aimed at creating cost efficiencies in the supply chain by effectively managing inventory and focusing on improving the quality in the supply chain, thus eliminating waste. Karim & Mahmoud (2014) states that Adopters of the lean supply chain strategy implement a just-in-time philosophy by delivering the right material, at the right time, at the right place, and in the exact amount; and as well select suppliers based on quality to achieve its low cost strategy. An agile supply chain strategy is aimed at being flexible by adapting quickly and effectively to rapidly changing customer needs, an agile strategy employs a wait-and-see approach to demand, not committing to products until demand becomes known thus, it allows the supply chain to provide customers with customized products (Makena & Iravo 2014).

Developing Strategic supplier partnership enables Public Universities develop a long-term relationship between the organization and its suppliers, which influences the strategic and operational capabilities of individual participating companies to help them achieve significant on-going benefits (Manyenze,2013). This kind of partnership requires a high degree of coordination between the Public Universities and its suppliers. It emphasizes a direct association with suppliers, encouraging mutual planning and problem solving efforts, continuous improvement programs, and selection of a few suppliers. Postponement enable organisation moving forward one or more operations or activities making, sourcing, and delivering) to a much later point in the supply chain. By keeping materials undifferentiated for as long as possible and using modularity designs (Ndua & Were, 2018).

1.1.1 Global Perspective on Strategic Supply Chain Practices

Countries such as the United Kingdom, United States and Canada have long employed Supply chain strategies in the management of their procurement and logistics. For instance, Gangster et.al (2014) acknowledged that the Department of Defence (DOD) in the United States has minimized cost through lead time in the management of its logistics by employing Supply chain management strategies.

Dell's manufacturing process covers assembly, software installation, functional testing including burn-in, and quality control. To minimize the delay between purchase and delivery, Dell has a general policy of

manufacturing its products close to its customers. This also allows for implementing a just-in-time (JIT) manufacturing approach, which minimizes inventory costs. (Fayezi, & O'Loughlin, 2016). Dell's Postponement strategy is first implemented in manufacturing processes to reduce cost of inventory and improve service level within the company while the product variety increases. The concept of postponement is to delay the change in form, identity and place to the latest possible point until customer commitments have been obtained. It is by exploiting the commonality between items and by designing the production and distribution process to delay the point of differentiation. Dell's Postponement is closely intertwined with modularization where products in a certain product family are designed where all of them consist of different standardized units. With modularization, combination of different standardized sub-components allows the producing of different end products (Connelly & Hult, 2013).

A significant majority of EU pharmaceutical manufacturers have adopted postponement strategies. This practice pushes the complexity as close to the end of production as practical reducing the complexity associated with small-batch formulation in favor of small-batch packaging. Gx companies have actively leverage postponement to manage the complexity and volatility of their market. Regional supply hubs that at minimum do the packaging or, potentially serve as regional hubs for third-party suppliers and retesting which help simultaneously create short order lead times for the given region or market as well as decouple bulk production from market demand, thereby enabling production to focus on formulation (David 2010).

BMW sees its suppliers as the key to driving value, innovation and quality with its vehicles under the BMW, Mini Cooper and Rolls Royce brands. The company recognizes that their ability to perform and develop sustainably depends on the standards that their global supplier network follows, and therefore, BMW has implemented The BMW Group Supplier Sustainability Standard. The key supply chain strategy was collaboration with key suppliers on a mutual understanding of product and production quality, security of supplies, competitive prices and innovation, as well as the continuous integration of sustainability (Chen & Liang, 2012).

1.1.2 Regional Perspective of Strategic Supply Chain Practices

Regionally, firms have adopted different supply chain strategies to enhance their performance both locally and internationally. Oyuke (2014) observed that in the sub-Saharan Africa, both central and local authorities as well as other government departments have embraced collaborative and integration supply chain strategies in an effort to improve their service delivery by enhancing efficiency. Evidence of successful stories regarding application of SCM strategies were noted in countries such as Ghana, Nigeria, South Africa and Malawi. For instance, *Li et al.*, (2016) argue that in South Africa, collaboration with supply chain stakeholders and particularly involving them in the design and development of products/services enables companies to reduce their costs and risk management within supply chains. Sharing information among the participants in the necessitates agility in the SC and this puts management in a better position to make informed decision to address the ever changing business environment and the customer demands.

Efficiency is a vital aspect to successful supply chain management in the food and beverage industry in South Africa, particularly when perishables are involved. Strategic agile supply chain helps the US fast-food chain McDonald's to minimize waste and risk, while tactical implementation of technology can enhance existing systems to edge out the competition (Chen & Ouyang, 2011).

Many of the FMCG companies in Ghana such as Coca cola West Africa and uniliver Ghana subsidiary not only have visibility of demand-and-supply information but also have real-time information on what has been

changed for example, large demand changes, large new confirmed orders, and manufacturing delays and misses (Liu, 2016).

The Coca-Cola Bottling Company of Ghana Limited (TCCBCG) supply chain is the set of department that are involved in the design of a new product products and services, procuring raw materials and transforming them into semi-finished and finished products, whilst also delivering them to the end customer. Supply Chain collaboration enables efficient management of the end to end process starting from the design of the product, products or service to the time when it has been sold, consumed and finally gotten rid of by the customer. This complete process includes product design, procurement, planning and forecasting, production, distribution, fulfilment and after sale support (Fayezi, & O'Loughlin, 2016).

1.1.3 Strategic Supply Chain Practices in Kenya

Kenyan companies in various industries such as telecommunication, retail and manufacturing have embraced different Supply chain management strategies in an effort to achieve a competitive advantage in order to stay at the top of the market. Abdifatah (2012) observed that impressive performance of some humanitarian organizations in Kenya is largely attributed to the application of various supply chain management strategies such as agility and supply chain management relationships. Ensuring effective and continuous improvement in the Supply Chain, putting in place Supply Chain Agility processes in their service, and forging alliances among organizations is a prominent feature among humanitarian organizations in Kenya.

The supply chain strategy of Unilever is to achieve the highest profitability, growth, and return-on-assets., Unilever's operating model has three components: quality, service, and cost (Nyamasege & Biraori 2015). While keeping its global branding, the company's strategy is to have local supply chain for local demand to minimize complexity. The Agility for a Changing Market enabled Unilever build capabilities to become more responsive to the changing needs of the customers and consumers. Strong relationships with suppliers that share sustainable growth ambitions are critical to continued success the supplier collaboration involves innovate approach to drive efficiencies and adopt new technologies and business models

According to Nazaar & Shazad (2013), Leading the world in IT and networking with their revolutionary computing architecture, Cisco East Africa Systems has a highly diverse and extensive supply chain that spans the globe. The company recently transformed its supply chain strategies in order to increase business scale and agility. They were able to increase their agility, resilience and ability to scale by implementing new business models, a single ERP instance, standardization and automation throughout the supply chain.

As one of the leading food and beverage companies in the world, PepsiCo is the parent company for hundreds of diverse and beloved household brands. The company has done a great job transitioning its supply chain capacity to handle more complex products to follow consumer trends to more nutritious foods than carbonated soft drinks and processed snacks. PepsiCo new plant in Kenya has developed significant improvements such as sustainability initiatives, collaborative production scheduling, setting inventory buffers, and selective procurement and sourcing strategies, to achieve a resilient and lean supply chain (Nyamasege & Biraori, 2015).

1.1.4 Public Universities in Kenya

Universities in Kenya are established through institutional Acts of Parliament under the Universities Act, 2012 which provides for the development of university education, the establishment, accreditation and governance of universities. Kenyan universities are regulated by the commission for higher education which ensures better planning, coordination of their growth and expansion. Public universities are managed by the university

councils. Currently, there are 22 public universities, 14 chartered private universities and 13 universities with Letter of Interim Authority (LIA), according to statistics from the Commission for Higher Education (CHE) (2018).

In public universities, supply chain activities in public universities are very dynamic. These universities get funds from the government in the form of grants, get donations, student fees, and therefore, without better SCM strategies, the result would be poor operational and financial performance. Lean supply chain management thinking and practices is considered as one of the ways recognized to achieve timely supplies and to create greater values. The application of lean supply management principles is meant to lead to improved performance of managers of the supply chain (Mwilu & Chirchir, 2013).

The Changing consumer needs and business environment has necessitated Public Universities in Kenya to adopt lean supply chain management practices in order to survive thus minimizing operational costs and maximizing profits. The increased change of customer needs and the emergence of new technologies have resulted into Public Universities adapting to those changes so as to remain relevant and competitive (Manyenze, 2013). Lean supply chain management practices is one of the ways of reducing waste in organizations due to benefits that accrue in adoption of these practices. To meet public demands and expectations, there is a need for the Public Universities to consider adopting lean supply chain management practices to reduce waste and enhance value addition in provision of services to the public

1.2 Statement of the Problem

Universities in Kenya have experienced poor supply chain performance due to fail at on-time product delivery by suppliers who fail to respond quickly to deliver agent shipments of item components (Mwilu & Chirchir, 2013). There for public universities procurement has failed to live up to the bottom line of maximizing efficiency in the procurement process and optimizing on savings due to the selected poor SCM strategies.

Because of poor supply, chain strategies in public universities resulted to late deliveries is made with the addition of large stock outs, which further create Inventory wastes. This is mainly caused by the inability of public universities to predict the requirements of items, materials and equipment capacity. This being on top of the uncertainty associated with obtaining deliveries of products in time from the supplier Hence poor supply chain management with lack of visibility of demand and supply information across the supply chain and as a result, the bull whip effect takes place (Manyenze, 2013).

The impact of the poor SCM strategies has greatly influenced the performance of the public universities with supply chain operation activity generating up to 75 % of overall business costs, with major costs from 4% to 9% and from 7% to 12% associated with asset disposal and obsolesces cost respectively. Brand berry, and Potts, (2012) reported that public universities loss 20 %to 30 % of their revenue in unrealized cost savings by not engaging in procurement best practices. (Lee, 2016) With the Poor inventory planning and ineffective distribution effect another 15-30% hence reduction in critical goods inventories, This Impacted to the user department and their orders of ksh 100,000.00 every week. Due to the mismanaged demand, Impact before this resulted in 7-10 lead time on deliveries hence disruption on finance, sales, and marketing and human resource operations (Mwilu & Chirchir, 2013).

Considering the insufficient available empirical evidence on the role of SCM and strategies aimed at solving challenges experienced by managers in majority of the public universities are striving to put in place vital SCM concepts to realize combined gains of enhanced cost, flexibility, dependability and quality Addressing these

gaps then, the objective of this paper is to analyse the of supply chain strategies on organizational performance in public universities in Kenya

1.3 General Objectives

To determine the effect of lean supply chain on organizational performance in public universities in Kenya.

1.3.1 Specific Objectives

- i. To determine the effect of Supply base rationalization on the performance of public universities.
- ii. To establish the effect of Framework contracting on the performance of public universities.
- iii. To establish the effect of Supply chain visibility on the performance of public universities.
- iv. To evaluate the effect of Continuous Improvement on the performance of public universities.

1.4 Conceptual Framework

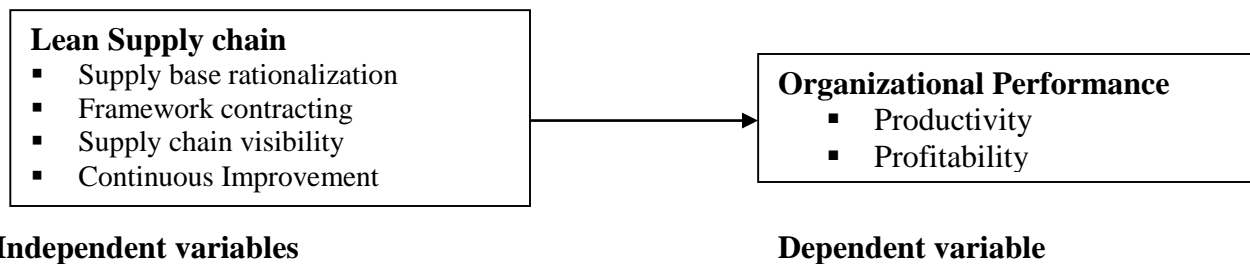


Figure 1: Conceptual framework

METHODOLOGY

this research adopted descriptive design. A descriptive research is a method of collecting information by interviewing or administering questionnaire to a sample of individuals. Descriptive design as the most appropriate design in getting responses from respondents who participate by answering questions. The target population of this study was from employees in administration, accounts and procurement departments in public universities. The unit of observation for the study was the. Public Universities in Kenya and the unit of analyses for the study was the employees working in administration, accounts and procurement departments. This study sampled all public universities in Kenya, the researcher used census since data collection through census method gives opportunity to the researcher to have an intensive study about a problem study about a problem, census also ensure a higher degree of accuracy in data no other method is accurate like census method. The study used the most common internal consistency measure known, as Cronbach’s alpha (α) in testing the reliability of the instrument. The alpha indicates the extent to which a set of test items can be treated as measuring a single latent variable. The data collected from the field was analyzed qualitatively and quantitatively. At first, data was screened to identify omissions and removal of non – answered questions. For quantitative data analysis, coding and entry was done in electronic spread sheet with the aid of Statistical Package for Social Sciences (IBM SPSS Version 23). Data generated from SPSS was analyzed using descriptive and inferential statistics whereby the output was presented using tables, pie charts and graphs

RESEARCH FINDINGS ANALYSIS AND DISCUSSION

3.1 Introduction

This chapter presents analysis and findings of the study as set out in the research methodology. The study sought to determine the effect of supply chain strategies on organizational performance in public universities in Kenya. The data was gathered exclusively from questionnaire as the research instrument designed in line with the objectives of the study.

3.2 Reliability Results

Table 1 illustrates the results of the reliability test of the research instrument. In this study, reliability test was done using Cronbach’s Alpha to measure the internal consistency of the data variables. From the findings, the least coefficient is 0.798, which is higher than 0.70 thresholds provided as acceptable according to Creswell (2013), "This implies that the study data collection instrument was reliable and acceptable in a social science study

Table 1: Reliability results for supply chain strategies

Variable	Cronbach’s	No of Item	Remarks
Supply Chain Agility	.801	5	Accepted
Supply Postponement	.745	5	Accepted
Supply Chain Collaboration	.791	5	Accepted
Lean Supply chain	.855	5	Accepted
Overall	.798		

3.3 Response Rate

The study targeted a sample of 102 staff in Administration, Procurement and Accounts procurement in public universities in Kenya. Out of the 102 distributed questionnaires, 88 were filled and returned. This translated to a response rate of 86.3%. This implies that the response was good enough and representative of the population and conforms to Mugenda and Mugenda (2013) that a response rate of 70% and above is excellent.

Table 2: Response Rate

Response	Frequency	Percentage
Returned questionnaires	88	86.3
Unreturned questionnaires	14	13.7
Total	102	100

3.4 Demographic information

The study sought to determine the background of the respondents in order to have an understanding of their suitability to undertake the study. The findings are in the subsequent sections. This section included of information that described the general characteristics of the respondents; the job title, department in which the respondent works, number of years served in the institution and the type of industry the organization falls. The general information was important for the study as it helped in understanding the background of the respondents in relationship to the study objectives.

3.5 Gender Distribution

The respondents were asked to indicate their gender. The finding is shown in Figure 2. The finding shows that 46% of the respondents were females while 54% were male. This shows that all genders were included thus provided a good representation for the study. Therefore, information sought by the study was diverse. The finding agree with those of Peng and Shah (2011) that Eliminating gender discrimination in relation to occupation and pay increase employee morale across all the gender lead to strengthened work relationships.

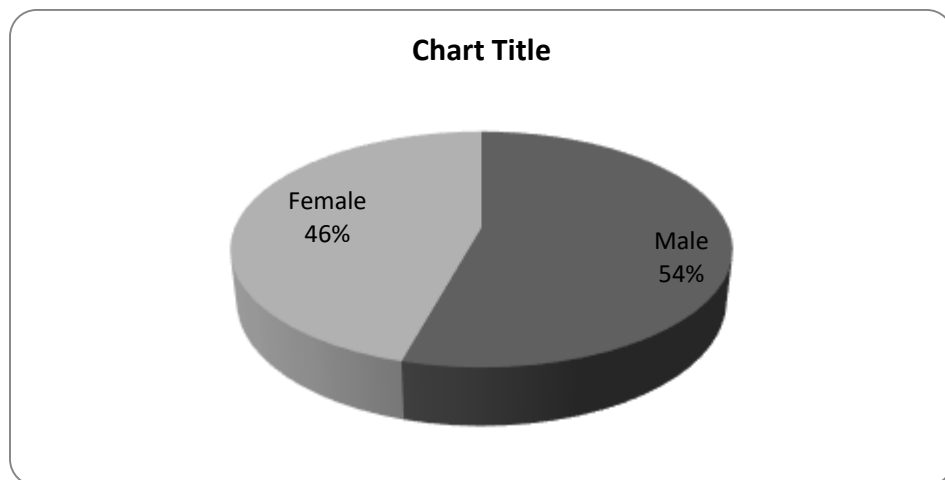


Figure 2: Gender Distribution

3.6 Departments

The respondents were requested to indicate their respective departments they are work in public universities in Kenya. The findings are shown in Table 3. From the finding, 37.5% of the respondents were in general administration, 43.2% of the respondents were in procurement department and 19.3 % of the respondents were in accounts department

This shows that all the departments involved in daily supply chain activities in public universities of Kenya were well represented thus the information collected was more reflective of the supply chain strategies of the entire organization. The finding in the study agree with those of Khisa, (2011) that developing employees by involving them in the placement in different department and providing potential management opportunities help employees feel motivated and loyal to the business.

Table 3: Departments

Departments	Frequency	Percent
Administration	33	37.5
Procurement	38	43.2
Accounts	17	19.3
Total	88	100

3.7 Work Experience in public universities

The respondents were required to indicate the number of years they have been working in their respective department in public universities, as shown in Table 4 From the finding, 5.6 % of the respondents had worked for less than 5 years, 32.9% of the respondents had worked for between 5-10 years, 40.9% of the respondents

had worked for between 11-20 years and 20.6% of the respondents had worked for between 21-30 years and above. This is an indication that the respondent had been working long enough thus provided credible information supply chain strategies been used in the public universities. The study concurred with those of Peng and Shah (2011) that work experience increase employees occupational knowledge and understanding of the skills, attributes and qualifications required

Table 4: Work Experience in public universities

Work Experience	Frequency	Percent
Less than 5 years	5	5.6
5 – 10 years	29	32.9
11 – 20 years	36	40.9
21 – 30 years	18	20.6
Total	88	100

3.8 Descriptive Statistics

Descriptive statistics are a set of brief descriptive coefficients that summarizes a given data set, which can either be a representation of the entire population or a sample. The measures used to describe the data set are measures of central tendency and measures of variability or dispersion (Kothari, 2012). The study used descriptive statistics to access the prevalent practices, which constitute the study factors as discussed in the following section.

3.8.1 Effect of Lean supply chain on organizational performance

The study aims to assess Lean supply chain practices that constitute organizational performance of the Public Universities in Kenya the respondents were required to indicate the level of these practices within Public Universities using a five point Likert scale and the results in Table 5: were as follows. Supply base rationalization (mean 4.14, STD 1.06), Framework contracting (mean 4.20, STD 0.88), Supply chain visibility (mean 3.62, STD 0.73) And Continuous Improvement (mean 4.03, STD 0.93).

The data findings indicates that Supply base rationalization, Framework contracting, Supply chain visibility and Continuous Improvement were been practices in the universities having an overall mean score of 4.14, 4.27, 3.62 and 4.03 out of the possible score of 5 points. This implies that Lean performance is total internal lean optimization process To develop a lean supply chain, there is need to apply lean to the supply chain as a system The Findings of the study agreed with those of Nyamasege & Biraori,(2015) that Eliminating waste along entire value streams, instead of at isolated points, creates processes that need less human effort, less space, less capital, and less time to make products and services at far less costs and with much fewer defects, compared with traditional business systems

Table 5: Effect of Lean supply chain on organizational performance

Statement	Mean	Variance	Std
Supply base rationalization	4.14	1.13	1.06
Framework contracting	4.27	0.78	0.88
Supply chain visibility	3.62	0.53	0.73
Continuous Improvement	4.03	0.76	0.93

3.8.2 Lean Supply Chain and Organizational Performance

The study question was derived from the study specific objective; 4. To establishes the effect of lean supply chain on the performance of public universities.

Study question 4: “To what extent does lean supply chain affect the performance of public universities??” The Multiple regression analysis ($y = B_0 + B_4X_4 + \epsilon$) was run with organization performance as the dependent factor and lean supply chain as the predictor variable. The results indicate the value of R^2 to be 0.343. This means that 34.3 % of Organizational Performance is explained by lean supply chain (regression line).

The value of $P < 0.05$ ($P = 0.00$) shows that lean supply chain is statistically significant predictor of Organizational Performance that is the regression line is a good fit of the data. Therefore the study question was answered in the affirmative. The regression model representing the results in Table 6 from the SPSS is given by Organizational Performance = $3.572 + 0.312LSC + e$. The results are illustrated in Table 6.

Table 6: Lean Supply chain and Organizational performance

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.572	.193		18.476	.000
LeanSupplychain	.312	.047	.585	6.657	.000

a. **Dependent Variable:** Organizational performance

b. **Predictor:** LeanSupplychain

R Square=.343

Adjusted R Square=.335

Sig.0.000

$$Y = 2.461 + 0.221X_1 + 0.211X_2 + 0.122X_3 + \epsilon$$

3.8.3 Lean Supply Chain and Organizational Performance

The first regression equation shows the relationship between the dependent factor (Organizational Performance) and independent variables. The multiple regression analysis ($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \epsilon$) was run with Organizational Performance as the dependent factor with Continuous Improvement, Supply Chain Visibility, Supply Base Rationalizations tested predictor factors.

From regression results in Table 4.16, the 2.461 represented the constant which predicted value of productivity (organizational performance in public universities) when all effect of Lean Supply Chain remain constant at zero (0). This implied that performance in public universities would be at 2.461 holding effects of Continuous Improvement, Supply Chain Visibility, and Supply Base Rationalizations (0).

The study findings indicate that Framework contracting and Supply Base Rationalization has the greatest influence on performance in public universities ($\beta_1 = 0.221$, $p = 0.002 < 0.05$) and $\beta = 0.307$, $p = 0.000 < 0.05$), followed by Supply Chain Visibility ($\beta_3 = 0.211$, $p = 0.000 < 0.05$), Continuous Improvement ($\beta_4 = 0.122$, $p = 0.001 < 0.05$)

Table 7: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.461	.223		11.025	.000
Supply Base Rationalization	.221	.126	.305	1.760	.002
Framework contracting	.307	.284	.456	3.976	.000
Supply Chain Visibility	.211	.104	.314	2.028	.000
Continuous Improvement	.122	.133	.186	.916	.001

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), Supply Chain Agility, Supply Postponement, Supply Chain Collaboration, Lean Supply chain

$$\text{Organizational Performance} = 2.461 + 0.221X_1 + 0.211X_2 + 0.122X_3 + \epsilon$$

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \epsilon$$

Y= Organizational performance

β_0 =Constant

X1= Supply Base Rationalization

X2= Supply Chain Visibility

X3= Continuous Improvement

$\beta_1 \beta_2 \beta_3 \beta$ = Regression co-efficient

ϵ =Error term

3.9 Lean Supply Chain and Organizational Performance

The study intended to ascertain the effect of lean supply chain on the performance of public universities. Number of authors has contended that Lean Supply Chain influence Organizational Performance This study was grounded on such studies. This study was grounded on such studies. The study finding is in agreement with Bueno, (2014). View under the Theory of Constraints that Lean Supply Chain influences organizational Performance.

The study findings demonstrate that facilities that have embraced Lean Supply Chain concept in managing their supply chain, experience significant improvement on the Organizational Performance. The MRA result indicate that Lean Supply Chain has a positive statistically significant influence on Organizational Performance in public universities in Kenya.; $P < 0.05 (P = 0.00)$ with explanatory power of R Square 34.3 % Therefore the research question: “To what extent do lean supply chain affect the performance of public universities? Is answered in the affirmative. This finding agrees with Cedillo & Menezes, (2014) lean supply chain practices is the best option Integrating data from across operations is the best way to ensure that the supply chain is sustainable and successful in the long term.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

4.1 Introduction

This section presents the summary of key data findings and draws conclusions from the findings based on the objectives. The chapter also presents the recommendations made from the findings. The objective of the study was to establish the influence of supply chain strategies on organizational performance in public universities in Kenya.

4.2 Summary of the Finding

This section presents the summary of the study based on the study objectives as discussed in the sub-section to follow:

4.2.1 Lean Supply Chain And Organizational Performance

The study objective was to establish the effect of lean supply chain on the performance of public universities. The study finding answered the study question, how does Lean Supply chain affect performance of public universities? In the affirmative". The study established that lean supply chain has the highest influence on Organizational Performance at ($\beta_4=0.525$, $p=0.000<0.05$). The study established that a lean organization focuses on providing the best quality within the shortest possible lead time, while minimizing waste throughout business processes. Minimizing waste means minimizing inventory, time, effort and people.

4.3 Conclusion

4.3.1 Lean Supply Chain And Organizational Performance

The study established a significant positive relationship between Lean Supply chain and Organizational Performance. This implies that an increase in on organizational performance in public universities in Kenya is likely through adoption of Lean Supply chain initiatives. It is therefore concluded that Lean Supply chain positively and significantly influences organizational Performance.

4.4 Recommendations of the study

Based on the study conclusions, the study recommendations are as follows:

4.4.1 Lean Supply Chain and Organizational Performance

The study established that Lean Supply Chain positively and significantly influences organizational Performance of public universities at. $R\text{ Square}=0.343$, $\text{Sig}.000<0.005$) with an explanatory power of 34.3 % percent. The study recommendation that Lean supply chain management requires public universities to examine every process in their supply chain since This will improve the organisation competitiveness as well as improve the organisation overall profitability.

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