

Lean Supply Chain Management Practices and Procurement Performance of Leading Supermarkets in Nairobi, Kenya

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Abstract: Lean supply chain management has become one of the key practices adopted by many business organizations. With the procurement function being critical in determining the performance of any business, this study set to establish the impact of lean supply chain management practices on the procurement performance with a focus on the leading supermarkets in Nairobi. The focus on the leading supermarket was as a result of the significance of the supply chain management in the supermarket business. The study utilized a descriptive research design approach. 46 supermarkets with atleast five branches were targeted, whereby one branch of each supermarket was included in the study. Questionnaires were utilized for data collection whereby the researcher adopted drop and pick method. The study had a response rate of 70%. From the study findings, it was established that a majority of the leading supermarkets in Nairobi utilized different lean supply chain management practices. The use of different lean supply chain management practices by different supermarkets was found to be beneficial. Furthermore, it was established that lean supply chain management practices impacted on the procurement performance of leading supermarkets in Nairobi. The practice resulted in the risk minimization in the procurement of products ensures that low amount of products end up damaged and enhanced efficiency and effectiveness with which customer product delivery improved and lowered the general costs of the procurement of goods.

Keywords: Lean Supply Chain Management Practices and Procurement Performance.

1. Introduction

Supply chain management is a critical feature of the success of any business organization. Supply chain management is defined by Cohen & Roussel (2013) as the process of actively managing the supply chain activities of products to ensure that customers value is maximized. Different researchers have expressed their views on the significance of the supply chain in the organization in different aspects of running and managing a business. According to Monczka, Handfield, Giunipero & Patterson (2015), supply chain management is a critical metric in determining the performance of an organization. These metrics affect the strategic and operational planning within an organization. Cohen & Roussel (2013) further urges that supply chain management is a critical link that interlink all the key stakeholders in a business, i.e. from the supplier to the customer; making it key to the success of any business.

With the goal of any business being profitability, most organizations strive to ensure that they remain highly competitive by offering competitive prices to their customers. To meet the goal of offering competitive prices to the customers, organizations explore different strategies by reducing the costs in the supply chain being the most popular. As Monczka, Handfield, Giunipero & Patterson (2015), observes most costs of products are incurred in the supply chain are eventually transferred to the customers who increase the cost of the products hence negatively impacting on the sales and profitability of the company. One of the approaches to ensure that the organization does not incur unnecessary costs that negatively impacts on its competitiveness is through the lean supply chain management. Lean supply chain management is an approach that continuously employees the improvement efforts to eliminate unnecessary costs or non-value steps in the supply chain with a goal of reducing the costs of the product to the customers (Martínez-Jurado & Moyano-Fuentes, 2014).

Procurement is the basis of the supply chain management as it involves the acquisition of goods and services from an external entity (Andreasen, 2012). In business, goods are acquired through the supply

chain, hence the need for an effective procurement performance for the desirable outcome for an organization to be realized. Through the procurement process, the suppliers are managed. [Andreasen \(2012\)](#) observes there is an urgent need to ensure that the procurement process within an organization is effectively conducted. The effectiveness of the procurement team to ensure that the goals of the procurement process are realized is hence crucial in ensuring that the business is able to realize its goals. Through procurement performance, an organization is able to establish the cost at which they acquire goods and services which influences the sales and competitiveness of the business.

2. Literature Review

This section gives a review of the literature on the role of Lean Supply Chain Management Practices impact on the Procurement Performance. The section will explore the theoretical framework and empirical review the conceptual framework. The inventory theory explores how the management of stock levels of goods in business for the demand of the goods and services to be effectively met. In the inventory theory, the rules that the management of a business can use to minimize the costs associated with maintaining inventory and meeting customer demands are explored. The inventory can be maintained based on the demand for the goods and services or based on a periodic review of the needs of the business ([Eroglu & Hofer, 2011](#)). The results theory was first proposed by [Kusek & Rist \(2004\)](#) as the most modern approach to measuring procurement performance. The theory observes that results-based management is the best solution to sustained enhanced performance in any organization. Through a monitoring and evaluation system, the monitoring of procurement performance can easily be conducted, helping the procurement management in identifying any impediment that can result in the inability of an organization to meet its goals.

2.1. Lean Supply Management Practices

Lean is a management approach that involves the identification and elimination of wastes through the continuous improvement of a product to ensure customer satisfaction is achieved. The goal of the lean approach is to create more value for the customers at a less cost ([Myerson, 2012](#)). With the supply chain management involving the collaboration of the network of different stakeholders in the supply chain. The supply chain stakeholders include suppliers, warehousing providers, transporters, distributors and the retailers. Hence lean management in the supply chain is the process of continuously eliminating non-necessary costs that are associated with the production, delivery, and sale of a product to ensure that customers get more value at a minimal price ([Martínez-Jurado & Moyano-Fuentes, 2014](#)).

Lean supply management practices hence involve different stakeholders in the supply chain involved in the production and sale of a product. For lean management to be achieved, it can involve different companies or departments within an organization ([Myerson, 2012](#)). According to [Awin \(2011\)](#) within an organization, lean supply management practices continuously explore different approaches through which customer value is continuously enhanced. This practices can include; wastage minimization, effective utilization of in-house talents, optimization of technology utilization and effective utilization of resources.

The outcomes of the lean supply management practices in an organization are the reduction in the use of human efforts, less capital and general resources to produce products. As a result, products are produced more efficiently and at a less cost. The practice ensures that organizations are able to effectively respond to the changing tastes of customers and offer products at a competitive price hence gaining a competitive advantage in the market. As [Agus & Shukri Hajinoor \(2012\)](#) observes, through the Lean supply management practices customers are able to enjoy more valuable products from an organization and the organization becomes more competitive in the market.

The primary goal for any business is to become profitable. Business organizations implement different strategies to ensure that its profitability is guaranteed. This includes exploring different ways to ensure that it has a competitive advantage over its competitors and ensuring that customer satisfaction is met ([Cohen & Roussel, 2013](#)).

In a study by [Bienabe & Vermeulen \(2007\)](#), it was observed that the procurement function is critical to the business success. The study focused on the significance of supermarket procurement systems in South Africa. The researchers conducted an in-depth analysis of two well-established supermarkets in Limpopo province. Using a case study approach, [Bienabe & Vermeulen \(2007\)](#) established that an effective procurement system was critical to ensuring that the supermarkets meet their objectives of serving its clients effectively. The effectiveness of the procurement system was largely anchored on the ability to efficiently coordinate the supply chain.

Martínez-Jurado & Moyano-Fuentes (2014) in their study on the impact of lean supply chain management on the general procurement function of an organization observed that lean procurement is critical in ensuring that the procurement process is effectively conducted. The study which was conducted through a review of the literature observed that lean supply management system was key to reducing the cost of the procurement function of an organization. Through lean supply management practices, an organization was able to reduce the cost of the procuring goods and services significantly. As a result, the overall cost of products provided by a business is massively reduced hence enabling the business to offer competitive prices or increase its profit margins.

According to Dües, Tan & Lim (2013), lean supply chain management practices are critical to enhancing the social impact of the procurement aspect of a business. Through lean practices, a business is able to participate in environmental conservation easily. Through lean approaches, wastages that are a key cause of environmental pollution are eliminated. Through these environmental conservation efforts, the procurement process plays a critical role in promoting the business as a key promoter of the environment. With the growing concerns about the environment, customers are easily able to embrace businesses that help in mitigating the environmental issues. Hence, the lean supply chain management practices are critical in ensuring that the procurement process of an organization plays a corporate social responsibility to the business.

Lean supply chain management has now evolved to involve technological processes such as e-procurement and automation of the procurement processes. The use of technological software's has replaced the human function which is prone to error and use of more resources, hence making the supply chain management practices to be relatively cheaper. As a result of the adoption of technology in the lean supply chain management processes; obstacles to the free flow of information along the supply chain has been removed and real-time visibility into inventory in motion has been achieved. This has resulted in the effective flow of products along the supply and eased the identification of any wastages resulting in reduction in resources used to maintain the supply chain (Anand & Kodali, 2008).

Kimani (2013) study on the lean supply chain management in a manufacturing firm in Kenya observed that the practices were critical in reducing the costs of the final products. The study explored the role of lean practices in the supply chain and observed that it played a critical role in reducing the costs, time resource and inventories to ensure that the firms are profitable and able to satisfy the customers' demands.

According to Ngonjo (2014), lean supply chain management practices play a critical role in the performance of the procurement of a business organization. The lean practices ensure that the procurement of goods and services is transparently conducted in a cost efficient manner. As a result, the cost of procuring goods is lowered which directly contributes to the profitability of a business.

Kamau & Kagiri (2015) research on the influence of procurement management practices on procurement competitiveness observed that the practices have an impact on the procurement competitiveness. The study focused on Safaricom, a leading telecommunication firm in the country. The researchers observed that Safaricom has been able to sustain its leading market position by utilizing lean supply chain management in its procurement operations. Hence, lean supply chain management practices enhance the competitiveness of an organization with a focus on leading supermarkets in Nairobi, Kenya.

2.2. Procurement Performance

Procurement is the processes are continuously becoming critical to the success of organizations to meet their objectives. Efficient procurement is now critical in guaranteeing operational effectiveness within an organization. To ensure that procurement goals are achieved efficient procurement systems are put in place. This system enables the company to be able to reinvent their cost structures through standardized cost procedures that cover all the procurement aspects in the organization (Kakwezi & Nyeko, 2010).

Procurement performance is defined by Masiko (2013) as the measure through which an organization can identify the extent to which its procurement processes are able to help realize the procurement goals and objectives at a minimum cost. With the significance of the purchasing department that is in control of the procurement processes in an organization within the supply chain, procurement performance measures are quite essential. According to Kakwezi & Nyeko (2010), key indicators for procurement performance measures include the amount of money saved and the ability to ensure that an organization is able to save costs which are reflected on reduced pricing on the final products. With the reduction in the pricing, the organization is able to offer products competitively, which is crucial in giving it a competitive advantage.

2.3. Leading Supermarkets in Nairobi, Kenya

The retail sector in Kenya is one of the key sectors of the economy. It plays a pivotal role in the economy by facilitating the easy acquisition of consumable products, offering employment opportunities and a key source of revenues to the government. With the success of multinational retail stores such as Wal-Mart in the US, the prominence of the sector has grown rapidly with Kenya spotting many brands most of which are local with a few multinationals (Wathigo, 2016).

With Kenya's role as a regional economic powerhouse, it has attracted many investors in different sectors of the economy with some opting for the retail sector. Nairobi, being the capital city of the country, continues to attract investors in the retail sector by meeting the growing needs of the emerging middle class.

With Nairobi being the country's economic hub, it has attracted many retailers including international brands. According to Munyori & Karanja (2018) supermarkets in Nairobi range from small estate based to large supermarkets with branches across the country. Though some of the supermarkets operate as single entities or with less than five branches, others have a presence across the Kenyan capital with tens of their branches operational.

2.4. Research Problem

The significance of lean supply chain management in a business cannot be underestimated. According to Martínez-Jurado & Moyano-Fuentes (2014) businesses that have a long supply chain, need to adopt lean management practices to ensure that they provide value to their customers. Through continuous lean management practices in the supply chain, businesses are able to ensure that the unnecessary costs in the supply chain are eliminated and the product made more valuable. Within an organization, Andreasen (2012) observes that the procurement department plays a critical role in the supply chain management as it is responsible for the procurement of goods and services. Hence the performance of the department directly contributes to the lean supply chain management.

The retail sector globally is quite competitive. The need for the supermarkets and chain stores to deliver value for customers is quite urgent. With the opportunity to create value lying in the supply chain management, the need to reduce the costs and minimize wastes for products to be delivered effectively, with high quality and with competitive pricing is quite urgent (Martínez-Jurado & Moyano-Fuentes (2014). According to Kimani (2013), retail market players who have been unable to embrace lean management practices have found themselves losing customers to their competitors as a result of poor pricing.

In a study conducted by Mageto (2009) on the role of responsiveness of supply chain among supermarkets in Nairobi, he observed that most of the supermarkets utilized lean management strategies to achieve reliability, timelessness, and responsiveness to the customers need. In a study by Ngonjo (2014) on the impact of the procurement process on the functionality of procurement departments, it was established that the procurement function is crucial in implementing approaches that will ensure that cost-effectiveness, efficiency, and minimization of resource use is achieved. Other researchers like Awino (2011) urge that the supply chain management is a function of the procurement department in any business. Hence, the ability to effectively implement any supply chain management practices will determine its functionality.

2.5. Research Focus

This study aims at filling the research gap that emerges from the impact of lean supply chain management practices on the procurement performance. The study sought to answer the research question; what are the lean supply chain management practices and their impact on the procurement performance of leading supermarkets in Nairobi?

The general objective of the study was to establish the impact of lean supply chain management practices on the procurement performance of leading supermarkets in Nairobi.

The specific objectives of the study were:

- i. To identify the lean supply chain management practices used by the leading supermarkets in Nairobi.
- ii. To determine the impact of lean supply chain management practices on the procurement performance of leading supermarkets in Nairobi.

3. Methodology of Research

3.1. General Background of Research

This section explores the procedures to be used in obtaining relevant data for the fulfillment of the study's objectives. The chapter provides an analysis of the research design, target population and sampling techniques, data collection method, data analysis, research quality and the ethical considerations that will be utilized in conducted this study.

3.2. Research Design

Research design is defined by [Mugenda \(2013\)](#) as the arrangement of conditions for collection and analysis of data so as to accomplish the objective of the research. For the purposes of this study, a descriptive research design will be utilized. According to [Malhotra & Peterson \(2014\)](#) descriptive research design provides answers to the 'who, what, when, where and how' of the situation the research focuses on. A descriptive design encompasses the collection of data from the sampled population under study to ensure that the current issues under the study are tackled effectively. The descriptive research design will be most appropriate for this research as it allowed the study to explore different aspects in regard to lean supply chain management practices impact on the procurement performance.

3.3. Target Population and Sampling Technique

The target population for a study according to [Malhotra & Peterson \(2014\)](#) is a well-defined set of elements, people or events that are being investigated by a researcher. [Mugenda \(2013\)](#) on the other hand defines target population as the whole collection of essentials that a researcher seeks to draw conclusion from. For the purposes of this study, the target population is the leading supermarkets operating within Nairobi County. The leading supermarkets in this case will be first tier supermarkets (supermarkets with more than 5 branches within Nairobi County). There are 46 supermarkets with more than 5 branches operating within Nairobi County. As [Malhotra & Peterson \(2014\)](#) urge, when the sample population is small, the entire population is used in the study. Hence all the entire target population would be part of the sample to be utilized in the study. The study focused on supply chain managers and procurement heads of each of the supermarkets outlets, hence the study had a total of 46 respondents.

3.4. Data Collection Methods

The study used primary data collection tools to collect information from the respondents. The target respondents for the study were supply chain manager managers and procurement heads in each of the supermarket chain in Nairobi. The data was collected using self-administered questionnaires. As [Flick \(2014\)](#) notes the use of questionnaires is critical in guaranteeing confidentiality, saving of time and is easy to administering. The questionnaires will include structured questions and unstructured questions to be filled by the specific supermarket store supply chain manager managers and procurement heads or their representatives

3.5. Data Analysis

The collected data was edited, coded and entered into the computer and categorized before analysis. The collected data will be analyzed using Statistical Package for Social Sciences (SPSS) whereby the results will be organized into graphs and tables. Data was analyzed using qualitative methods. Qualitative data was analyzed by summarizing the information gathered, categorizing and coding into emerging themes and presenting in a narrative form. The study further employed inferential statistics to establish the relationship between lean supply chain management and procurement performance among supermarkets in Kenya. The study used Spearman correlation to establish this relationship.

The following equation was utilized;

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

Where Y= Procurement performance

X1= Increased quality in product delivery

X2 = Waste Management Practices

X3 = Timely delivery of products

e = Error

β_0 = The constant which is the value of dependent variable when all the independent variables are

0.

3.6. Ethical Consideration

The researcher upheld ethical requirement at every stage of the research process. The respondents of confidentiality and privacy of the collected data was guaranteed by the researcher.

4. Results of Research

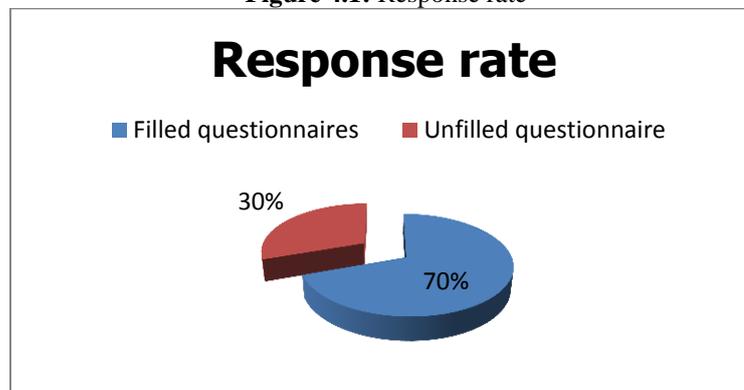
4.1. Introduction

The section provides the findings and interpretation of the research as per the study's objectives. The study aimed to establish the impact of lean supply chain management practices on the procurement performance of leading supermarkets in Nairobi.

4.2. Response Rate

The study had initially targeted 46 respondents who included supply chain managers and procurement heads of top tier supermarkets outlets operating within Nairobi County. 32 questionnaires were successfully filled, hence the study had a response rate of 70% which as [Mugenda & Mugenda \(2013\)](#) observe is sufficient for a researcher to effectively draw their conclusions from. Fig 4.1 illustrates the response rate.

Figure 4.1: Response rate



Source: Authors, 2018

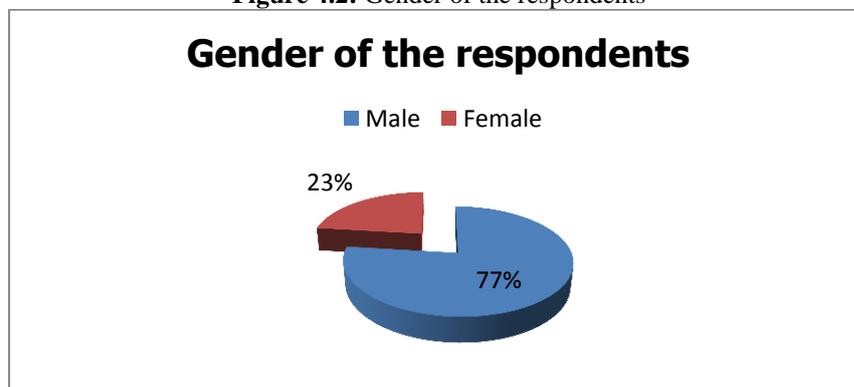
4.2.1. Position of the Respondents in the Supermarkets

The study had targeted supply chain managers and heads of procurement as the respondents. 19 of the respondents were supply chain managers hence represented 59% of the respondents while the heads of procurement formed 41% of the respondents.

4.2.2. Gender of the Respondents

23% of the respondents were female while 77% of the respondents were male. Fig 4.2 illustrates the gender of the respondents.

Figure 4.2: Gender of the respondents



Source: Authors, 2018

4.3. Lean Supply Chain Management Practices Used By the Leading Supermarkets in Nairobi

The study had set out to establish the supply chain management practices used by the leading supermarkets in Nairobi. Different lean supply chain management strategies used by different business organizations. While some businesses use single practices, some employ a series of strategies to maximize the impact. Table 4.1 illustrates the study findings.

Table 4.1. Types of lean supply chain management practices

	SA	A	NS	D	SD	Mean	Std deviation
Lean supplier practices	11	7	5	2	6	4.23	0.425
Lean procurement practices	9	6	9	5	4	3.19	0.445
Lean warehousing practices	8	10	5	4	5	3.97	0.407
Customer management practices.	7	12	3	6	4	3.50	0.496
Lean product transportation practices	7	13	2	4	6	3.36	0.508

Source: Authors, 2018

The study established that the supermarkets employed different lean supply chain management practices in running of their business. All the respondents indicated that they employed different lean supply chain management practices in managing their business. Lean supplier practices was identified to be the most deployed form of lean supply chain management practice across the supermarkets as it registered a mean of 4.23. Lean warehousing practices also was highly utilized practice as it registered a mean of 3.97. Customer management practices were also relatively highly utilized as it registered a mean of 3.50. Lean product transportation practices and lean supplier practices were not highly utilized by the supermarkets as they registered a mean of 3.36 and 3.19 respectively.

From the findings, it was clear that the leading supermarkets employed different lean procurement strategies in their procurement processes with Lean supplier practices and lean warehousing practices highly utilized across the supermarkets. This implies that they are quite significant in the running of the supermarket business.

4.4. Benefits of Lean Supply Chain Management Practices

The study also set out to establish the benefits of lean supply chain management practices. All the respondents positively indicated different benefits associated with utilizing lean supply chain management practices. Table 4.3 illustrates the findings of the study

Table 4.3. Benefits of lean supply chain management practices

Keys: SA- Strongly Agree, A- Agree, NS- Not Sure, D- Disagree, SD- Strongly disagree

	SA	A	NS	D	SD	Mean	Std deviation
Minimizes operational costs of the supermarket	10	13	3	2	4	3.72	5.08
Customer access high quality products	6	13	8	1	4	3.50	4.96
Reduces product wastages (i.e. dead stock)	7	9	6	8	2	3.34	3.64
Decreases time dedicated for product delivery to the supermarket.	4	9	11	5	3	3.19	4.45
Key to creating standardization and best practices to be followed.	8	4	5	10	5	3.00	4.07
Actively involves all stakeholders in the supply chain in the reduction of wastes.	3	7	5	9	8	2.63	4.25
Guarantees sustainable flow of products from the producer to consumer	3	9	3	7	9	2.59	5.13
Enhances customer loyalty as service satisfaction is guaranteed	2	5	7	7	11	2.38	4.98

Source: Authors, 2018

From the analysis of the study’s findings, it is clear that the lean supply chain management practices have varied benefits to supermarkets. The study established that supermarkets enjoy different benefits by utilizing the lean supply chain management practices. The guarantee of sustainable flow of products from the producer to consumer and the minimization of operational costs were found to be the most critical benefits drawn from utilizing the lean supply chain practices as they registered a standard deviation of 5.13 and 5.08 respectively. Hence lean supply chain management was critical in enhancing efficiency in

the flow of products from producers to consumers which minimizes the operational costs. The effective flow of the products also plays a critical role in ensuring that the customers are highly satisfied as they can access products more effectively.

The study established that lean supply chain management also played a key role in ensuring that the customers are able to access high quality products and in enhancing customer loyalty as service satisfaction is guaranteed as they registered a standard deviation of 4.96 and 4.98 respectively.

Lean supply chain management practices were found to have average positive impact in reducing the time dedicated for product delivery to the supermarket, actively involving all stakeholders in the supply chain in the reduction of standardized and supply chain best practices are followed as they registered a standard deviation of 4.45, 4.25 and 4.07 respectively.

The research further established that lean supply chain management practices had minimal impact on the general reduction in wastages as it registered a standard deviation of 3.96. This implies that the supermarkets do not benefit much from the lean supply chain management practices they utilize to help reduce product wastages.

The other benefits of the lean supply chain management practices identified by the respondents include; increased firm performances, effective response to customers' needs, effective capacity and resource utilization.

4.5 Lean supply Chain Management Practices in Procurement

The study also set out to identify the benefits of the lean supply chain management practices on the performance of the procurement function. Table 4.4 illustrates the findings of the study.

Table 4.4: Significance of lean supply chain management practices on procurement

	1 SA	2 A	3 NS	4 D	5 SD	Mean	Std dev
Ensures cost reduction in the processes of procurement of goods and service.	9	13	1	2	8	3.75	5.32
Lean supply chain practices ensure that risk in procurement of products is minimized.	7	12	4	3	6	3.44	5.12
Lowers the costs of the procurement of goods in the supermarkets.	8	6	2	7	9	3.16	4.34
Guarantees provision of quality products to customers	3	11	2	11	5	2.87	3.68
Improved customer product delivery	2	8	5	7	10	2.53	4.73

Source: Authors, 2018

From the findings of the study, it is clear that the lean supply chain management practices played a significant role in the procurement function of the supermarkets.

The study established that through the lean supply chain management practices, the risk in procurement of products is minimized and also played a critical role in ensuring that the cost associated with the procurement of goods and service is massively reduced as they registered a standard deviation of 5.32 and 5.12 respectively.

The study was also able to establish that the lean supply chain management practices improved customer product delivery and lowered the costs of the procurement of goods in the supermarkets as it registered a standard deviation of 4.73 and 4.34 respectively. The findings of the study imply that the lean supply chain management practices play significant role in the mentioned aspects.

The research also found out that the lean supply chain management practices does not significantly guarantee the provision of quality products to customers through procurement as it registered a standard deviation of 3.68.

4.6. The Relationship Between Lean Supply Chain Management Practices and Procurement Performance of Leading Supermarkets in Nairobi

The researcher had also set out to establish the impact of lean supply chain management practices and the procurement performance of supermarkets in Nairobi. Regression analysis was utilized. The regression model for the study was $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + e$

Where Y= Procurement performance

X1= Increased quality of products

X2 = Reduced operations cost

X3 = Timely delivery of products

e = Error

The study utilized coefficient of determination to evaluate the fitness of the model. The model summary is presented in the table below.

Figure 4.3. Summary Model

	R Square	Adjusted R Square	Std. Error of the Estimate
973 ^a	.947	.786	1.866

a. Predictors: (Constant), Timely delivery of products, Quality of products, Reduced operations cost
Source: Authors, 2018

The adjusted R square is the percent of the variance in the dependent variable explained uniquely by the independent variables. The model had an average coefficient of adjusted R square of 0.973; implying that 97.3% of the variations in procurement performance by supermarkets in Nairobi is caused by the independent variables of the study (Increased quality of products, Reduced operations cost and Timely delivery of products).

Figure 4.4: Anova statistics

ANOVA ^a				
Model	Sum of Squares	df	Mean Square	sig.
Regression	61.718	3	20.57	.908 292 ^b
Residual	3.482		3.482	
Total	65.200			

a. Dependent Variable: Procurement Performance
 b. Predictors: (Constant), Timely delivery of products, Quality of products, Reduced operations cost
Source: Authors, 2018

The ANOVA statistics, established that the regression model had a significance level of 0.292; indicating that the data was ideal for making a conclusion on the study parameters as the value of significance (p-value) was greater than 0.05. The analysis therefore indicates that key lean supply and procurement impacts including Increased quality of products, Reduced operations cost and Timely delivery of products have a significant effect on procurement performance by supermarkets in Nairobi.

Figure 4.5: Regression analysis

Coefficients ^a											
Model	Unstandardized Coefficients		Standardized Coefficients Beta	sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
(Constant)	.373	.270		.724	224	27.017	1.764				
Quality of products	.290	.325	1.439	.968	157	2.840	419	.690	.970	.917	.40
Reduced operations cost	.840	.309	-1.004	2.714	225	4.772	092	.182	.938	.627	.39
Timely delivery of products	.602	.318	-.455	1.893	309	4.642	438	.301	.884	.437	.92

a. Dependent Variable: Procurement Performance
Source: Authors, 2018

From the regression analysis, with a significance level of 0.309 timely deliveries of products was found to be the greatest impact of lean supply chain management practices on the performance of supermarkets in Nairobi.

The regression model for the study was $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + e$

Hence the working model is;

$$Y = 7.373 + 1.290 X_1 - 0.840 X_2 + 0.602 X_3 + e$$

The regression equation above has established that taking all factors into account (Timely delivery of products, Quality of products, Reduced operations cost) constant at zero, procurement performance in supermarkets operating in Nairobi will be 7.373. The findings further illustrates that taking all other independent variables at zero, a unit increase in the Quality of products will lead to a 1.290 increase in procurement performance; a unit increase in Reduced operations cost will result in a 0.840 reduction in procurement performance; a unit increase in Timely delivery of products will result in a 0.602 increase in procurement performance of supermarkets in Nairobi county. This hence infers that the use of lean supply chain management practices positively impacted on the procurement performance of leading supermarkets in Nairobi.

5. Discussion

The study aimed to establish the impact of lean supply chain management practices on the procurement performance of leading supermarkets in Nairobi. The study established that all the top tier supermarkets operating in Nairobi County employed different lean supply chain management in their procurement process. The study was in agreement with the findings of [Barasa, Namusonge & Iravo \(2015\)](#) that established that most businesses now recognize and embrace lean supply chain management as a key management approach hence employ different strategies in its processes.

The use of different lean supply chain management practices by different supermarkets was found to be beneficial. The study established that lean supply chain management was key to guaranteeing sustainable flow of products from the producer to consumer and the minimization of operational costs. The other benefits that supermarkets enjoyed in utilizing the lean supply chain management practices include; ensuring that customers are able to access high quality products thus enhancing customer satisfaction and reducing the time dedicated for product delivery to the supermarket. The study findings were related to a study conducted by [Kamau & Kagiri \(2015\)](#) that established that the lean procurement practices enhanced competitiveness of organizations as it enhanced the effectiveness of product delivery hence key in guaranteeing that customer satisfaction is achieved. Furthermore, [Kamau & Kagiri \(2015\)](#) findings concurred with this study in that they both identify the operational costs of the firm are reduced ensuring that the customers are able to enjoy reduced product prices hence enhancing their competitiveness. The study established that lean supply chain management practices impacted on the procurement performance of leading supermarkets in Nairobi. The study established that through the lean supply chain management practices, the risk minimization in the procurement of products ensures that low amount of products end up damaged. The study findings concurs with a study conducted by [Masiko \(2013\)](#) that established that lean procurement practices enhanced efficiency in the way products are handed along the supply chain. As a result, it minimizes on loss of products through unnecessary wastages which is critical for the profitability of any firm. The procurement function of the leading supermarkets in Nairobi County were also found to be enhance in efficiency and effectiveness with which customer product delivery improved and lowered the general costs of the procurement of goods through the adoption of the lean supply chain management practices. This is critical in ensuring that the procurement process is at the centre of reducing the operational costs of a business. This findings is in agreement with a study conducted by [Agus & Shukri, Hajinoor \(2012\)](#), that established that the use of lean supply chain practices were key in reducing the cost of procurement of goods within an organization.

6. Conclusions

The study established that lean procurement practices directly impacted on the performance of the procurement processes with an organization. The study found out that the lean supply management strategies ensures that the cost of procuring goods is reduced and enhances the efficiency and effectiveness with which customer product delivery is achieved. As a result, quality products are delivered to the customers at an affordable price which enhances the competitiveness of the firm in the market. As a result of utilizing the lean supply chain management strategies, firms enhance their profitability and

stability of their business. The study finding established that the leading supermarkets in Nairobi utilized different lean procurement methods. These practices include; lean product transportation practices, lean procurement practices, lean supplier, lean warehousing practices and lean customer management practices. The lean supply chain management practices have been illustrated to be beneficial to the supermarkets and to be of significance on the procurement performance of leading supermarkets in Nairobi. The benefits of the lean supply chain management practices include; guaranteed sustainable flow of products from the producer to consumer, the minimization of firm's operational costs, enhances effective flow of the products and playing a critical role in ensuring that the customers are highly satisfied as they can access products more effectively. Furthermore, the practices are key in ensuring that the customers are able to access high quality products hence enhancing customer loyalty. The lean procurement practices were found to reduce the risk in procurement of products is minimized and reducing the cost of procuring products within the firm. Hence, the study finding confirms that supply chain management impacted on the procurement function of the supermarkets in Nairobi.

7. Recommendations to Policy and Practice

The challenges that were encountered while carrying out this study include; some of the respondents failed to fill up the questionnaire despite giving assurances that they will. The study proved quite expensive in terms of time and money as it involved travelling across different supermarkets in across the county. The study has established that leading supermarkets in Nairobi County are aware of the lean supply chain management practices and employ some of them in their procurement process. Most of the supermarkets only employ a few practices and are yet to fully embrace the concept of lean supply chain management in the procurement despite acknowledging that the practice is beneficial. There is a need to ensure that key management of the leading supermarkets fully embrace the concept of the lean supply chain management in the procurement process to ensure that their firm enjoy maximum benefits which enhances their competitiveness in the market. The study recommends future research to be conducted on ways of enhancing the utilization of lean supply chain management in the procurement processes within supermarkets in Kenya. The study recommends that a similar study need to be conducted on lean supply chain management practices and procurement performance on non-retail industry.

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