SUPPLIER SELECTION AND PERFORMANCE OF PHARMACEUTICAL COMPANIES IN KENYA

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ABSTRACT

Supplier selection is a critical process for pharmaceutical firms in Kenya, as it directly affects the quality and availability of medicines and healthcare products. When pharmaceutical firms select suppliers, they encounter several challenges that can impact their operations and overall business performance. The general objective of the study is to establish the influence of supplier selection and performance of pharmaceutical companies in Kenya. The study was guided by the following specific objectives; to establish the influence of supplier pricing and lead time on performance of pharmaceutical companies in Kenya. Cross-sectional research was used in the study. The target population was the 35 registered pharmaceutical firms in Kenya. The study adopted census technique since all the 35 registered pharmaceutical firms in Kenya were considered. The study made use of questionnaire to collect data. The researcher collected questionnaires, code them, and enter them into the Software Package for Social Sciences (SPSS version 26) for analysis. The sort function was used to perform the initial screening. The data was based on the study's objectives and research questions. The descriptive statistical techniques of frequency, mean, and standard deviation was used to analyse the quantitative data acquired. The results were displayed using frequency distribution tables, which keeps track of how many times a score or response appears. The study concludes that supplier pricing has a positive and significant effect on performance of pharmaceutical companies in Kenya. In addition, the study concludes that lead-time has a positive and significant effect on performance of pharmaceutical companies in Kenya.

Key Words; Supplier selection, Pharmaceutical companies, Supplier pricing and Lead time

Background of the study

As the economy continues to grow globally, so is the increasing opportunities for companies to grow and strengthen their market share or weaken it. This means increased competition and globalization of market. In this global village, companies aim to strategically place themselves in a position that will mean good returns on their investments. Center for Advanced purchasing and Supplies Zandbergen Paul (2011) did a focus study and what came out clearly from the research is the significant impact purchasing has on quality, customer satisfaction, and profitability and market share. Maija Harju (2010) notes that purchasing has not always been a top – level function in the organizational structure but rather has been subordinate to the manufacturing or operations department. However, overtime companies have moved towards establishing purchasing as a distinct functional area on the same level as production, marketing, finance and Research and Development (Morris et al. 2011).

According to M. Ross (2019), companies spend roughly half of their revenue to purchase goods and services. Hence, effective evaluation of supplier and purchasing processes is very essential in any organization. As the pace of market globalization quickens so does the number of potential suppliers and factors to consider when selecting suppliers (Mohammad et al., 2013). Maija Harju (2010) asserts that selecting the right supplier therefore plays a key role in any organization since it significantly reduces the unit prices and improves corporate competitiveness. He continues to emphasis on quality, timely delivery and cost in today's global competitive marketplace adds a new level of complexity to supplier selections decisions. The decisions that purchasing department make is very crucial because they have a direct effect on cost reduction, profitability and flexibility of the company.

Supplier selection is the process by which the buyer identifies, evaluates and contracts with suppliers Zandbergen Paul (2011). From the discussion above i outwardly agree with Stephen Ross (2019) that supplier selection is an important topic for operations and management science disciplines. This basically aims to find out the vital factors that the procurement department needs to look at when choosing the company's supplier. My research will look at the criteria which firms in the health industry use in selecting their suppliers, since this industry is a very sensitive one especially where medical facilities are concerned. There is also a growing audience for such research since there is need to foster talent and skills by hiring of experts in procurement. Supplier selection arises when a prospective supplier applies to be placed on buyer's approved list or when the buyer wishes to confirm on suppliers' ability to meet requirements reliably.

In Kenya, the pharmaceutical industry consists of three segments namely the manufacturers, distributors and retailers (Munene, 2016). All these play a major role in supporting the country's health sector, which is estimated to have about 4,557 health facilities countrywide. Kenya is currently the largest producer of pharmaceutical products in the Common Market for Eastern and Southern Africa (COMESA) region, supplying about 50% of the regions' market. Out of the region's estimated of 50 recognized pharmaceutical manufacturers; approximately 30 are based in Kenya. It is approximated that about 9,000 pharmaceutical products have been registered for sale in Kenya. These are categorized according to particular levels of outlet as free sales /OTC (Over the Counter), pharmacy technologist dispensable, or pharmacist dispensable/ prescription only (Wang & Yip, 018).

Kenya has sufficient laws and policies to become a competitive pharmaceutical manufacturing hub in the region. Many new laws have been enacted and many others have been reviewed to create an enabling environment for businesses to establish themselves and thrive (Ndung'u & Signé, 2020). Several of these laws and policies relate to the health sector function and practice, including the pharmaceutical industry, tax incentives, public procurement-related incentives, lower electricity

tariffs, protection of intellectual property (IP) and IP rights, anticounterfeit goods, ethics and anticorruption practices, environmental protection, and land use. Kenya requires a coordinated approach and system to support the effective implementation of these laws and policies, and regularly evaluate the performance of public and private sector role players in the pharmaceutical industry value chain (VUGIGI, 2017).

Statement of the Problem

The pharmaceutical industry in Kenya plays a crucial role in the provision of healthcare. Currently, the industry is comprised of local manufacturers, franchise importers who are involved in distribution, multinational companies, wholesalers and retailers of drugs (Aseto, 2002). According to KNBS (2016), manufacturing sector in Kenya contributed barely 13.6 per cent to the GDP in the year 2016 indicating a decline from the previous year 2015 where it had reported a 5.6 per cent growth. There are 307 local pharmaceutical manufacturing industries actively manufacturing generic drugs for local and export market. Despite this, the country still relies heavily on imported drugs to service the public health needs. In 2015, the country imported $809 million worth of drugs. In the same year, donor communities spent an additional $693 million to purchase drugs for pandemic diseases including malaria, tuberculosis and HIV (WHO, 2016).

Supplier selection is a critical process for pharmaceutical firms in Kenya, as it directly affects the quality and availability of medicines and healthcare products. When pharmaceutical firms select suppliers, they encounter several challenges that can impact their operations and overall business performance (Asmirantho, & Somantri, 2017). Ensuring the quality and compliance of pharmaceutical products is critical for patient safety and regulatory adherence. Pharmaceutical firms encounter challenges in verifying the quality assurance processes of potential suppliers, including their adherence to Good Manufacturing Practices (GMP) and local regulatory standards. The prevalence of counterfeit and substandard pharmaceutical products poses a significant risk in Kenya. Pharmaceutical firms need to implement robust mechanisms to identify trustworthy suppliers and avoid the purchase of counterfeit or low-quality medicines. The pharmaceutical industry experiences price fluctuations, particularly for raw materials and active pharmaceutical ingredients (APIs). Pharmaceutical firms face challenges in balancing price competitiveness with the quality and reliability of suppliers, affecting their profitability and cost management (Akinnuwesi, Owolabi, & Adelekan, 2016).

How the organization weighs up the importance of these different factors will be based on the business' priorities and strategy. A strategic approach in choosing suppliers can also help the organization to understand its potential. Some authors have identified several criteria for supplier selection, such as the net price, quality, delivery, historical supplier performance, capacity, communication systems, service, and geographical location, among others (Kifyasi, 2021). These criteria are a key issue in the supplier assessment process since it measures the performance of the suppliers. In general, this research intends to provide empirical evidence of the criteria and the procedures for the supplier selection process used in different corporate environments. It also plans to evaluate if these processes follow rigorous regulations as the ISO 9000 standards. Finally, it identifies the suitability of the Analytical Hierarchical Process (AHP) to assist in decision making to resolve the supplier selection problem (Kibandi, 2019). Therefore the study focused on the influence of supplier selection and performance of pharmaceutical firms in Kenya.

General Objective

The general objective of the study is to establish the influence of supplier selection on performance of pharmaceutical companies in Kenya.

Specific Objectives

i.   To establish the influence of supplier pricing on performance of pharmaceutical companies in Kenya.

ii.   To determine the influence of lead time on performance of pharmaceutical companies in Kenya.

Theoretical framework

Agency Theory

Agency Theory was propounded by Stephen Ross and Barry Mitnick in 1973, independently and roughly concurrently (Mitnick, 2019). Agency theory relates to business relationships that consist of a "principal" and an "agent" who are engaged in cooperative behavior, but have differing goals and differing attitudes towards risk. The mechanism for controlling the relationship is the contract between the principal and the agent and, depending on the situation; the contract will be behavior-based or outcome-based. The heart of the principal-agent theory is the trade-off between the cost of measuring behavior and the cost of measuring outcomes and transferring risk to the agent. The concept of Agency Theory is to attempt to resolve disputes over priorities between the Principals and the Agents. It forms a link between what employees know and what they should know in any process

There are two key assumptions underlying the agency theory, and they are: Individuals are generally egoists who act in their own self-interests. In short, both the principal and agent are out for their own benefits and that agents have access to more information and are usually in a decision-making capacity. The agency theory requires that the interests of the principal should be seen as paramount while the agent is sufficiently compensated. It primarily addresses disputes arising in two areas; first, where the principal and agents pursue different, unaligned goals, and secondly, where there's a difference in risk aversion, caused by varied risk tolerance capacities. In essence, there has been a separation between ownership and control. As a result, conflicts do arise between management and shareholders. The management may be pursuing its own goals and aspirations at the expense of the shareholders.

Agency theory suggests that the pharmaceutical firm can be viewed as a nexus of contracts between resource holders. An agency relationship arises whenever one or more individuals, called principals, hire one or more other individuals, called agents, to perform some service and then delegate decision-making authority to the agents. The primary agency relationships in manufacturing firms are those between stockholders and managers and between debtholders and stockholders. These relationships are not necessarily harmonious; indeed, agency theory is concerned with so-called agency conflicts, or conflicts of interest between agents and principals. This has implications for, among other things, corporate governance and business ethics. When agency occurs it also tends to give rise to agency costs, which are expenses incurred in order to sustain an effective agency relationship. Accordingly, agency theory has emerged as a dominant in aligning unity price and firm performance.

The theory has been criticized for oversimplifying organizational conflict and for the mathematical complexity necessary to find answers to the agency problem. In addition, procedures defending shareholders' interests may interfere with implementing strategic choices and limit collective activities. Hence, control mechanisms recommended based on agency theory are not only expensive but also commercially unsuccessful. Its limited behavioral presumptions and theoretical focus are one of its drawbacks. A larger spectrum of human motivations is ignored by agency theory since it primarily emphasizes self-interested and opportunistic human behavior.

Structural Contingency Theory

Structural contingency theory was proposed by Early work by Burns and Stalker (1966) and Lawrence and Lorsch (1967). The theory posits that organizations will be effective if managers fit the characteristics of their organization, such as structure, with contingencies in the environment. Under-performing companies may decide to adopt a new business model (configuration) that better fits their environment. The theory draws specifically form the contingency theory, which argues that there is no best way to design an organization and that no theory or method can be applied in all circumstances. The heart of structural contingency theory lies in how a static, state of fit between structures and contingency results in high performance, though challenge this by outlining that, through being static, structural contingency theory fails to deal with organizational change and adaptation.

The theory assumes that effective leadership is contingent upon the situation at hand. Essentially, it depends on whether an individual's leadership style befits the situation. According to this theory, someone can be an effective leader in one circumstance and an ineffective leader in another. This theory ignores the false dichotomy that someone is either a "good" or "bad" decision. Instead, it focuses on matching the right leadership traits to the situation. This theory of assumes the reality that success in an undertaking is often a combination of the attributes of the leader and the attributes of the challenge. "Good leadership" is contingent upon how one responds to the situation.

The theory views the entire supply chain instead of individual parts this helps improve transparency and alignment of the supply chains' coordination. Structural contingency theory outlines how organisational processes should be structured to suit the environment in which they operate. Configurations that match the environment will perform better than those that do not and will help an organization achieve top performance. When applying structural contingency theory to SCM, individual parts of the supply chain should be aligned and organized in such a way that achieves the best performance. A group of individual companies can be formed to make the supply chain an extension of the organisation, and structured in such a way to suit a particular environment. If an ideal model can be established for the group of companies there is potential to improve performance of the entire supply chain

There are some criticisms of the theory. One of the biggest is lack of flexibility. Burns believed that because our natural leadership style is fixed, the most effective way to handle situations is to change the leader. He did not allow for flexibility in leaders. For instance, if a low-LPC leader is in charge of a group with good relations and doing unstructured tasks, and they have a weak position, then, according to the model, the best solution is to replace them with a high-LPC leader instead of asking them to use a different leadership style. There is also an issue with the Least-Preferred Co-Worker Scale if you fall near the middle of the scoring range, then it could be unclear which style of leader you are

Conceptual Framework

A conceptual framework shows the connection between the independent and dependent variables. The independent variables are supplier pricing, lead time, quality compliance and supplier capacity while performance of pharmaceutical companies is the dependent variable.
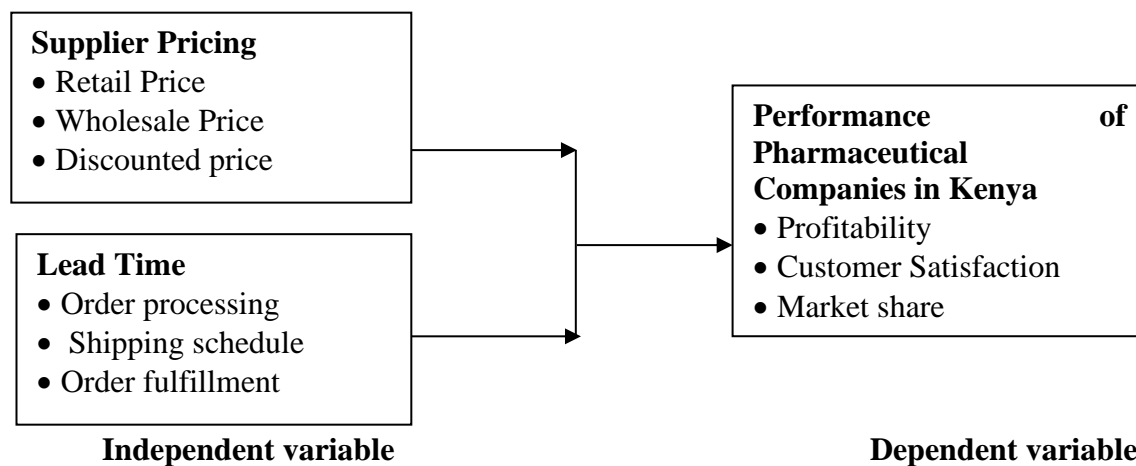
Figure 1: Conceptual Framework

Supplier pricing

Supplier pricing refers to the pricing strategy and terms negotiated between a buyer (customer) and a supplier for goods or services. It is a critical aspect of the procurement process and has a significant impact on the overall cost of goods or services acquired by the buyer. Supplier pricing involves determining the appropriate price for the products or services offered by the supplier, as well as the conditions and terms of payment (Cavallo & Rigobon, 2016).

A discounted price refers to a reduced or lowered price offered for a product or service, typically as part of a promotional or sales strategy. The discount is a deduction from the regular or original price, providing customers with the opportunity to purchase the item at a more affordable rate. Discounts are commonly used by businesses to attract customers, boost sales, clear inventory, and reward loyalty (Yao & Oppewal, 2016). Indeed, decades of research provide evidence that in a grocery shopping context, the presence of unit price information for pre-packaged products effectively shifts consumer choices toward lower unit priced products, resulting in consumer saving on expenditures for groceries. However, understanding is still limited with regard to why the unit pricing effect occurs and how robust it is (Shirai, 2017).

Wholesale price refers to the price at which goods are sold in large quantities, typically to retailers or other businesses for resale. It is the price charged by manufacturers or wholesalers to their customers who purchase goods in bulk or significant quantities. Wholesale pricing allows businesses to buy products at a lower cost per unit compared to retail prices, as it is intended for those who buy in larger volumes. (Yao & Oppewal, 2016). Establishing whether this effect exists is important, because its presence will signify that unit prices influence consumer decisions even when unit price information seems unnecessary, such as when products have identical sizes (Fecher, Robbert & Roth, 2019).

Lead Time

Lead time is the amount of time that passes from the start of a process until its conclusion. Companies review lead time in manufacturing, supply chain management, and project management during pre-processing, processing, and post-processing stages (Zamorano, Becker & Stolletz, 2018). By comparing results against established benchmarks, they can determine where inefficiencies exist. Reducing lead time can streamline operations and improve productivity, increasing output and revenue. By contrast, longer lead times negatively affect sales and manufacturing processes. The lead time varies among supply chain sources, causing difficulty in predicting when to expect the delivery of items and coordinating production. Frequently the result is excess inventory, which places a strain on a company's budget (Cotteleer & Bendoly, 2016).

Manufacturing lead time, or production lead time, is the amount of time between a merchant placing an order and the manufacturer completing it. This includes the time taken to procure supplies, manufacture, and ship the goods (Noori-Daryan, Taleizadeh & Jolai, 2019). Lead times are an essential part of the manufacturing process and can significantly impact the speed at which products are brought to market. Companies should consider all types of lead time when planning production to ensure they can meet customer demand in a timely manner. Lead time reduction takes time, energy, and data but can help your business improve its sales and fill rate. The most important factor when trying to reduce lead time is looking at your historical data. These numbers can help you determine average lead times and help you discover where lead times are increasing so you can head them off (Zhai, Zhong, Li & Huang, 2017).

Understanding and controlling lead time is paramount in inventory management. Lead time affects each step in the supply chain and can cause all operations to fall behind. This can cause further delays with subsequent orders leading to ever-growing lead times and unhappy customers (Poi & Nwokah, 2022). Improperly managed lead time in inventory management can cause a lack of stock, canceled orders, delays at the online marketplace level, and loss of revenue. The most important thing for anyone trying to manage inventory is to track average lead times and act quickly when any variances are found. Uncontrolled lead times can have drastic effects on a business. Keeping lead times minimal can save businesses thousands of dollars from the loss of sales to halted production runs (Vetrivel, 2020).

Empirical Review
Supplier Pricing and performance of pharmaceutical companies

Danzon and Percy (2019) did a study to measure productivity growth over time and to compare productivity levels cross-nationally for the pharmaceutical industry in four major European markets and the United States. The pharmaceutical industry raises interesting issues for productivity measurement. The product mix includes thousands of different compounds, and the range available differs significantly across countries and over time. The high rate of technological change leads to potential bias in measuring price change. The study illustrates the bias from treating generics as new drugs rather than as new forms of old drugs. The study however was done in USA unlike the current study which is a case of Kenya.

Asmirantho and Somantri (2017) aims to determine the effect of unit price as an indicator, of the pharmaceutical company listed in Indonesia Stock Exchange during the period 2012-2016 to stock price. The type of research is explanatory survey verification and research technique used is inferential statistic. The results showed that in partial EPS significantly effects stock price, while CR, ROE, DER, and TATO had not significantly affected the stock price. Adjusted R square value was 0,5040 which showed that CR, DER, TATO, ROE, and EPS influenced the dependent variable by 50,40%, while the remaining 49,6% was influenced by other variables. The study however failed to indicate the performance of pharmaceutical companies as it is the case of the current study.

Lead time and performance of pharmaceutical companies

Chang and Lin (2019) examines the lead-time effect on resilience performances across different stratifications in a supply chain comprising a factory, a distributor, and a retailer. By modeling supply chain system dynamics with a multi-echelon design, this study provides an in-depth understanding of the system-wide impact based on four measurements, namely crisis readiness, response effectiveness, recovery speed, and impact propagation rate under different supply chains characterized by various lead-time durations. The results show that the major disruption impacts, such as impact propagation, deteriorate along with lead-time. Then, the effectiveness of two practices that can be used to mitigate the impacts is analyzed. The results show that constraining

the order rate from the demand side perspective is effective only when lead-time is long while it is detrimental to firms' resilience when lead time is short. The study however failed to focus on pharmaceutical companies hence necessitated the current study.

Eberle, Sugiyama and Schmidt (2017) did a study on improving lead time of pharmaceutical production processes using Monte Carlo simulation. Reliable product supply is one of the most critical missions of the pharmaceutical industry. The lead time, that is, the duration between start and end of an activity, needs to be well managed in any production facility in order to make scheduling predictable, agile and flexible. Monte Carlo simulation is applied for quantifying the total lead time (TLT) of batch production as a probability distribution and sensitivity analysis reveals the ranking of sub-processes by impact on TLT. Based on these results, what-if analyses are performed to evaluate effects of investments, resource allocations and process improvements on TLT. The study was important in informing the current study on lead time and performance of pharmaceutical companies.

Kiriinya (2021) did a study to determine the influence of supply chain relationship management practices on the performance of pharmaceutical firms in Kenya. Descriptive research design was used to explain what, where, when and how of the problem. To test for data characteristics, normality test, hypothesis test, heteroscedasticity test and multicollinearity tests were carried out, while to test the strength and direction of relationship between independent and dependent variables, Correlation analysis and linear regression analysis were done. The results of the study showed positive and significant relationship between transparency, resilience building, collaborative planning, process alignment and firm performance. The results further showed that inter-organization systems significantly moderated the relationship between supply chain relationship management practices and organizational performance. The study however focused on supply chain in general, unlike the current study which is specific on lead time.

RESEARCH METHODOLOLOGY

Research design

Cross-sectional research was used in the study. It is a type of observational study that collects data from a population or a sample at a single point in time. It aims to examine relationships between variables or characteristics within a given population or sample at a specific moment. In a cross-sectional study, the investigator measures the outcome and the exposures in the study participants at the same time.

Target population

Mugenda and Mugenda (2003) describes target population as the complete set of individual's cases or objectives, with some common characteristics to which the researcher used to generalize the results of the study. The target population was the 35 registered pharmaceutical firms in Kenya.

sampling Technique

Bhardwaj (2019) describes sampling as the process of selecting samples from individuals or large populations for specific research purposes. According to (Smith, 2015) census is more suitable for small populations i.e. 200 or less. It eliminates sampling error and provides data on

all individuals in the population. The study adopted census technique since all the 35 registered pharmaceutical firms in Kenya were considered. The respondents of the study were 105 respondents drawn from the 35 registered pharmaceutical firms in Kenya who comprised of supply chain manager, purchasing manager and operations manager because they are the people who are actively involved in the procurement function and will therefore be purposively selected to engage in the study.

Research Instrument

The study made use of questionnaire to collect data. Primary data was collected by use of structured questionnaire that capture the various variables of the study. Questionnaires are set of questions which gave answers of the research participants in a set of ways.

Pilot study

Pilot study was carried out in a manufacturing firm to enable validity and reliability of research instruments to be determined. The respondents used in pilot test represent 10 percent of the units to be used in data collection. The study therefore used 11 respondents to test the degree of accuracy of the instrument to be used to collect data. Those selected for the pilot test were not included in the main study.

Data analysis and presentation

Data analysis involves interpretation, organization and presentation of collected data so as to decrease the information collected from the field to be practical (Safa et al., 2016). Collected data was organised and edited to remove any inconsistencies, repetitions or errors that make analysis difficult. Descriptive statistics was used to analyse the data with the aid of the Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics includes percentages, frequencies, mean mode and standard deviation. Data was represented inform of tables and figures.

Descriptive statistics such as frequency distribution, mean (measure of dispersion), standard deviation, and percentages were used. Descriptive statistics therefore enables researchers to present the data in a more meaningful way, which allows simpler and easier interpretation (Singpurwalla, 2017). Inferential data analysis was conducted by use of Pearson correlation coefficient, and multiple regression analysis. Inferential statistic is used to make judgments about the probability that an observation is dependable or one that happened by chance in the study.

ANALYSIS AND INTERPRETATION OF DATA

Descriptive Statistics Analysis

Supplier Pricing and Performance of Pharmaceutical Companies

The first specific objective of the study was to establish the influence of supplier pricing on performance of pharmaceutical companies in Kenya. The respondents were requested to indicate their level of agreement on statements relating to supplier pricing and performance of pharmaceutical companies in Kenya. A 5 point Likert scale was used where 1 symbolized strongly disagree, 2 symbolized disagree, 3 symbolized neutral, 4 symbolized agree and 5 symbolized strongly agree. The results were as presented in Table 4.1.

From the results, the respondents agreed that the affordability and accessibility of medications are affected by the supplier pricing. This is supported by a mean of 3.968 (std. dv = 0.905). In addition, as shown by a mean of 3.959 (std. dv = 0.885), the respondents agreed that variations in the supplier pricing of pharmaceutical products across different manufacturers and suppliers impact competition within the industry. With a mean of 3.920 (std. dv = 0.605), the respondents agreed that regulatory policies and guidelines play a crucial role in monitoring and controlling the supplier pricing of pharmaceutical products. Further, with a mean of 3.815 (std. dv = 0.981), the respondents agreed that the transparency of pricing information provided by pharmaceutical suppliers is crucial for making informed decisions. The respondents also agreed that consistency in pricing from pharmaceutical suppliers is essential for budget planning and financial stability. This is shown by a mean of 3.811 (std. dv = 0.873). Further, the respondents agreed that

competition among pharmaceutical suppliers directly affects the pricing dynamics in the market. This is shown by a mean of 3.798 (std. dv = 0.786).

Table 4. 1: Supplier Pricing and Performance of Pharmaceutical Companies

	Mean	Std. Deviation
The affordability and accessibility of medications are affected by the supplier pricing	3.968	0.905
Variations in the supplier pricing of pharmaceutical products across different manufacturers and suppliers impact competition within the industry	3.959	0.885
Regulatory policies and guidelines play a crucial role in monitoring and controlling the supplier pricing of pharmaceutical products	3.920	0.605
The transparency of pricing information provided by pharmaceutical suppliers is crucial for making informed decisions	3.815	0.981
Consistency in pricing from pharmaceutical suppliers is essential for budget planning and financial stability	3.811	0.873
Competition among pharmaceutical suppliers directly affects the pricing dynamics in the market	3.798	0.786
Aggregate	**3.890**	**0.867**

Lead Time and Performance of Pharmaceutical Companies

The second specific objective of the study was to determine the influence of lead time on performance of pharmaceutical companies in Kenya. The respondents were requested to indicate their level of agreement on the statements relating to determine the influence of lead time and performance of pharmaceutical companies in Kenya. The results were as shown in Table 4.2

From the results, the respondents agreed that the institution uses a good order of processing friendly for good performance. This is supported by a mean of 4.084 (std. dv = 0.997). In addition, as shown by a mean of 3.917 (std. dv = 0.831), the respondents agreed that the firm has an effective shipping schedule. Further, the respondents agreed that for the previous procurements, the company has enjoyed complete order fulfillment. This is shown by a mean of 3.858 (std. dv = 0.563). The respondents also agreed that the lead time provided by pharmaceutical suppliers significantly impacts their inventory management. This is shown by a mean of 3.831 (std. dv = 0.851). With a mean of 3.751 (std. dv = 0.935), the respondents agreed that a shorter lead time from pharmaceutical suppliers allows them to respond more effectively to market demands. The respondents also agreed that the accuracy of lead time estimates provided by pharmaceutical suppliers is crucial for their supply chain planning. This is shown by a mean of 3.691 (std. dv = 0.893).

Table 4. 2: Lead Time and Performance of Pharmaceutical Companies

	Mean	Std. Deviation
The institution uses a good order of processing friendly for good performance	4.084	0.997
The firm has an effective shipping schedule	3.917	0.831
For the previous procurements, the company has enjoyed complete order fulfillment	3.858	0.563
The lead time provided by pharmaceutical suppliers significantly impacts our inventory management.	3.831	0.851
A shorter lead time from pharmaceutical suppliers allows us to respond more effectively to market demands.	3.751	0.935
The accuracy of lead time estimates provided by pharmaceutical suppliers is crucial for our supply chain planning.	3.691	0.893
Aggregate	**3.836**	**0.818**

Inferential Statistics

Correlation Analysis

The present study used Pearson correlation analysis to determine the strength of association between independent variables (supplier pricing and lead time) and the dependent variable (performance of pharmaceutical companies in Kenya) dependent variable. Pearson correlation coefficient range between zero and one, where by the strength of association increase with increase in the value of the correlation coefficients. The current study employed Taylor (2018) correlation coefficient ratings where by 0.80 to 1.00 depicts a very strong relationship, 0.60 to 0.79 depicts strong, 0.40 to 0.59 depicts moderate, 0.20 to 0.39 depicts weak.

Table 4.3: Correlation Coefficients

		Organization Performance	Supplier Pricing	Lead Time
Organization Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	97		
Supplier Pricing	Pearson Correlation	.879**	1	
	Sig. (2-tailed)	.001		
	N	97	97	
Lead Time	Pearson Correlation	.841**	.271	1
	Sig. (2-tailed)	.002	.060	
	N	97	97	97

From the results, there was a very strong relationship between supplier pricing and performance of pharmaceutical companies in Kenya (r = 0.879, p value =0.001). The relationship was significant since the p value 0.001 was less than 0.05 (significant level). The findings are in line with the findings of Danzon and Percy (2019) who indicated that there is a very strong relationship between supplier pricing and organization performance.

Moreover, the results revealed that there is a very strong relationship between lead time and performance of pharmaceutical companies in Kenya (r = 0.841, p value =0.002). The relationship was significant since the p value 0.002 was less than 0.05 (significant level). The findings conform to the findings of Chang and Lin (2019) that there is a very strong relationship between lead time and organization performance.

Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables (supplier pricing, lead time, product quality and supplier capacity) and the dependent variable (performance of pharmaceutical companies in Kenya)

Table 4.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.920	.846	.847	.10332

a. Predictors: (Constant), supplier pricing and lead time

The model summary was used to explain the variation in the dependent variable that could be explained by the independent variables. The r-squared for the relationship between the independent variables and the dependent variable was 0.846. This implied that 84.6% of the variation in the

dependent variable (performance of pharmaceutical companies in Kenya) could be explained by independent variables (supplier pricing and lead time).

Table 4.5: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	8.027	2	2.007	28.27	.000[b]
1	Residual	6.568	94	.071		
	Total	14.595	96			

a. Dependent Variable: Performance of pharmaceutical companies in Kenya

b. Predictors: (Constant), supplier pricing and lead time,

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 28.27 while the F critical was 2.471. The p value was 0.000. Since the F-calculated was greater than the F-critical and the p value 0.000 was less than 0.05, the model was considered as a good fit for the data. Therefore, the model can be used to predict the influence of supplier pricing and lead time on Performance of pharmaceutical companies in Kenya.

Table 4.6: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.238	0.061		3.902	0.000
	supplier pricing	0.349	0.094	0.350	3.853	0.004
	lead time	0.428	0.102	0.430	4.196	0.001

a Dependent Variable: Performance of pharmaceutical companies in Kenya

The regression model was as follows:

$$Y = 0.238 + 0.349X_1 + 0.428X_2 + \varepsilon$$

According to the results, supplier pricing has a significant effect on performance of pharmaceutical companies in Kenya $\beta_1=0.349$, p value= 0.004). The relationship was considered significant since the p value 0.004 was less than the significant level of 0.05. The findings are in line with the findings of Danzon and Percy (2019) who indicated that there is a very strong relationship between supplier pricing and organization performance

The results also revealed that lead time has significant effect on performance of pharmaceutical companies in Kenya, $\beta1=0.428$, p value= 0.001). The relationship was considered significant since the p value 0.001 was less than the significant level of 0.05. The findings conform to the findings of Chang and Lin (2019) that there is a very strong relationship between lead time and organization performance

Conclusions

The study concludes that supplier pricing has a positive and significant effect on performance of pharmaceutical companies in Kenya. Findings revealed that retail Price, wholesale Price and discounted price influences performance of pharmaceutical companies in Kenya. This implies that a unit improvement in supplier pricing would lead to improvement in performance of pharmaceutical companies in Kenya

In addition, the study concludes that lead-time has a positive and significant effect on performance of pharmaceutical companies in Kenya. Findings revealed that order processing, shipping schedule

and order fulfillment influences performance of pharmaceutical companies in Kenya. This implies that a unit improvement in lead-time would lead to improvement in performance of pharmaceutical companies in Kenya

Recommendations

Pharmaceutical companies in Kenya should focus on developing a comprehensive pricing strategy that takes into account both retail and wholesale pricing. Consider conducting regular market analysis and competitor benchmarking to ensure that your pricing remains competitive while maintaining profitability. In addition, they should strengthen the relationship with their suppliers by engaging in open dialogues and negotiations regarding pricing. Collaborative discussions can lead to more favorable pricing terms and flexibility that benefits both parties.

In addition, the Pharmaceutical companies in Kenya should focus on optimizing their order processing procedures to reduce delays. They should also implement efficient order entry systems and minimize manual processes. The companies should enhance visibility across their supply chain to monitor inventory levels, production progress, and shipping status. Leveraging technology such as tracking systems will enable them to proactively address potential delays and maintain accurate delivery promises.

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