Int Journal of Social Sciences Management and Entrepreneurship 8(4): 254-265 2024

ISSN 2411-7323

www.sagepublishers.com

INVENTORY CONTROL STRATEGIES AND PERFORMANCE OF OIL MARKETING FIRMS IN KENYA

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ABSTRACT

Inventory control strategies are typically a key aspect of every organization. Despite the relentless effort research has shown that the promotion of inventory control in the public sector has not been very effective in terms of implementation. Inventory control strategies face numerous implementation challenges. The purpose of the study was to examine the influence of inventory control strategies on performance of oil marketing firms in Kenya. Specifically, the study sought to find out how ABC Analysis influences the performance of oil marketing firms in Kenya and to assess the influence of demand forecasting on the performance of oil marketing firms in Kenya. The research used a cross-sectional survey design. The unit of analysis was the 98 oil marketing firms while the unit of observation was management employees working in the oil marketing firms. In each firm, the study targeted 1 top management employees, 2 middle level management employee and 3 lower level employees. The total target population was therefore 588 management employees. The study used Yamane (1967) formula to determine the size of the sample. From the formula, the sample size was 238 respondents. Primary data was obtained using structured and semi-structured questionnaires. Quantitative data collected was analyzed using descriptive statistical techniques which are frequencies, mean, standard deviation. Inferential statistics which include Pearson correlation and the Regression Analysis Model was used to test the relationship between study variables. The significance of the model was tested at 5% level of significance. Data was analysed using Statistical Package for Social Sciences (SPSS) software version 26. The study concludes that ABC analysis has a positive and significant effect on performance of oil marketing firms in Kenya. The study also concludes that demand forecasting has a positive and significant effect on performance of oil marketing firms in Kenya. Based on the findings, the study recommends that Oil marketing firms should invest in advanced demand forecasting tools and techniques, incorporating both historical sales data and market trends to accurately predict future demand. This will enable firms to optimize their inventory levels, minimize stockouts or overstocking, and better align supply with demand. Effective demand forecasting will lead to improved decision-making, cost savings, and enhanced operational efficiency, ultimately boosting overall firm performance.

Key Words: Inventory Control Strategies, Abc Analysis, Demand Forecasting, Performance Of Oil Marketing Firms In Kenya

Background of the Study

The oil industry is usually divided into three major sectors which are upstream, midstream and downstream (Lyson, 2019). The upstream sector involves the exploration, drilling and production of crude oil and natural gas. It involves activities such as seismic surveys, well drilling and reservoir evaluation. The midstream sector is responsible for the transportation, storage and wholesale marketing of crude oil and natural gas. It includes activities such as pipeline transportation, storage terminal and liquefied natural gas (LNG) facilities (Robert, 2020). The downstream sector involves refining crude oil into petroleum product such as gasoline, diesel, jet fuel and lubricants. It also includes the distribution and retailing of these products to consumers. According to Kenneth and Ihunwo (2022) the oil industry has generally experienced significant changes in past decades globally; these changes are as a result of both external and internal forces. External forces are triggered by the global forces, internally, the oil industry has found ways of cutting down the cost of finding, producing and supplying oil products (Choy, 2019). It is not about small scale improvements but an entirely different way of doing business with a primary emphasis on distribution flexibility and quick response to the changing markets.

Worldwide, business organizations including the public sector are keen to managing inventory as a step towards minimizing operational costs. Business logistics costs as a percentage of US Gross Domestic Product (GDP) significantly grew to 9.5 percent and, out of a total expenditure of $1 trillion spent on logistics, approximately 33% was absorbed to the cost of holding inventory. Moreover, inventory is a prerequisite for production, they are expensive to store and they tie up productive capital (McLaren, Head & Yuan 2014).

Inventory management is an important function of any business for several reasons (Chen, Frank & Wu 2015). First, the sheer magnitude of performance outlays has a great impact on the economy and needs to be well managed. Indeed, in all countries in the world, estimates of the financial activities of banking inventory managers are believed to be in the order of 10%-30% of GDP (Koumanakos, 2019).

Inventories are part of current assets, which are convertible to other forms of working capital (cash and other receivables) in less than one year (Milicevic, Davidovic & Stefanovic, 2015) Inventory is a stock of goods that is maintained by a business in anticipation of some future demand. inventory management has an impact on all business functions, particularly operations, marketing, accounting, and finance. He established that there are three motives for holding inventories, which are transaction, precautionary and speculative motives (Schroeder, 2018).

The transaction motive is said to occur when there is a need to hold stock to meet production and sales requirements. Inventory management is vital for an effective and efficient firm. It is also important since it helps the firm in the determination of the optimal amount of materials and goods a firm can hold at any given time (Kumar & Bahl, 2019).

There is a need for the installation of proper inventory techniques in any business organization. said inventory management refers to all the activities involved in developing and managing the inventory levels of raw materials, semi-finished materials (work in progress) and finished goods so that adequate supplies are made available and the costs of over or under stocks are low. Inventory represents a cost to their owner (Chen, Frank & Wu, 2015). The manufacturer has the expense of materials and labor. Therefore, the basic goal of the manufacturer is to maintain a level of inventory that will provide optimum stock at the lowest cost. Effective inventory management is essential in the operation of any business (Kotler, 2019).

The main goal and objective of inventory management systems are to keep the required inventory at any time so that production runs smoothly without interruption whatsoever (Panigrahi, 2018). Inventory in a brewery industry is the second-largest asset as shown in

the statement of financial position in the brewery industry. It's only exceeded by equipment and the physical facilities (Helmsing, 2019)

In the US, a study on the effect of excess inventory on long term stock price performance of banks was done. The study estimated the long-run price effects of excess inventory using 900 excess inventory announcements made by publicly traded firms. These announcements are clear and unambiguous acknowledgement by affirm that it is suffering from excess inventory. He found evidence suggesting that stock market partially anticipates excess inventory situations and those firms do not recover quickly from negative effects of excess inventory. They further noted that the negative effect of excess inventory is economically and statistically significant (Chen, Frank & Wu, 2015).

In Nigeria, the study conducted by Wever, Wognum and Omta (2010) on supply chain practices identified inventory control strategies and a critical supply chain activity that every organization must engage in. Kakwezi and Nyeko (2010) associated procurement performance with inventory control strategies. On the other hand, Gunasekaran, Patel & Tirtiroglu (2016) pointed out that inventory control strategies is associated with reduced procurement costs and improved achievement of procurement organizational goals respectively.

In the private sector, things are no different, Cadbury Kenya announced that it will close down its manufacturing plant in Nairobi by the end of October 2014 (RoK,2014). In the full-year to September 2013 results, Eveready's net profit fell 58.7 per cent to $493,237 from $784,783 the previous year. Its production capacity dropped to 50 million units annually down from a previous high of 180 million per year mainly caused by contingencies (RoK, 2014). Tata Chemicals Magadi scaled down its operations by closing down its main factory (Kandie, 2014). Providing the right degree of inventory control strategies and having an efficient supply chain at the same time is a goal that is hard to achieve and that typically involves trade-off decisions by management, since increased inventory control strategies can be perceived to come at the expense of reduced efficiency and vice versa (Rappaport, 2015).

Statement of the Problem

Petroleum is Kenya's primary source of commercial energy and has consistently accounted for 80% of the country's commercial energy requirements. The Kenyan petroleum industry contributed approximately 2.8% to GDP in 2019, with net domestic sales of petroleum products increasing by 6.5% to 5,044.2 thousand Tonnes (KPA, 2020). The oil marketing sector has an annual average growth rate of 14%, which has prompted oil marketing firms to develop effective strategies to sustain their performance and growth (Muchiri, Ombui, & Iravo, 2021). The declining performance of oil marketing firms in Kenya is characterized by significant revenue losses and fierce competition. Leading firms like Total Kenya saw their turnover drop by 32.6% to KSh 55.7 billion, while KenolKobil's revenues fell by 19.2% to KSh 34.8 billion. These declines have been attributed to shrinking wholesale markets, high operational costs, debt issues, and increasing competition from smaller firms. Furthermore, regulatory price caps imposed by the Energy Regulatory Commission have constrained profit margins (Ndiwa & Chege, 2022).

Inventory control strategies such as just-in-time inventory and real-time tracking can significantly improve the efficiency and profitability of oil marketing firms by reducing overstocking, lowering holding costs, and avoiding fuel shortages (Mbugi & Lutego (2022). Firms can streamline operations, optimize distribution networks, and reduce wastage, leading to enhanced financial performance. This would help mitigate the effects of declining revenues and rising costs, ultimately stabilizing the performance of the oil sector (Sunarta, Rohman & Kawedar, 2020). This study therefore sought to examine the influence of inventory control strategies on performance of oil marketing firms in Kenya.

Objectives of the Study

The General Objective of the Study

The main objective of the study was to examine the influence of inventory control strategies on performance of oil marketing firms in Kenya

Specific Objectives

i. To find out how ABC Analysis influences the performance of oil marketing firms in Kenya
ii. To assess the influence of demand forecasting on the performance of oil marketing firms in Kenya

Theoretical Review

Decision Theory

Decision theory as discussed by Jurison (2015) indicates that a manager should be accountable for decisions made. Managers should be concerned about the outcome of their actions by weighing the risks of taking any of the options to reduce the risks of the outcome. This is achieved by identifying values, uncertainties and other things that might influence the decisions.

According to Dickert, Fielder, Andreas and Nicklisch (2013), one might decide between giving up resources to influence the well-being of others often without expecting direct benefits. Decision theories can be basically grouped into; normative and descriptive decision theory. While normative theory explains how decisions should be made, descriptive theory explains how decisions are made. Decisions in this case entail ABC analysis, where items are categorised into the three groups.

The inventory manager needs critical thinking in his decision making in order to ensure that manager maintains optimal quantity of stocks that balances between holding costs and stock out costs having in mind the three ABC categories. Top procurement management is also responsible of ensuring that staff responsible of inventory management possesses relevant training and that any functional conflict between production, finance and procurement departments is resolved in order to ensure proper management of inventory (Kader & Akter, 2014). This theory is relevant to the study because making critical decision in categorization of inventory is a key component in effective and efficient performance in the industry.

Theory of Constraints (TOC)

The Theory of Constraints (TOC) is a management philosophy introduced by Eliyahu Goldratt in his book "The Goal" (1984). It revolves around the idea that any organization is limited in achieving its goals by a small number of constraints, or bottlenecks, rather than by its overall capabilities. TOC aims to identify these constraints and systematically improve them to enhance overall system performance. Central to TOC is the concept of identifying the "constraint," which is any factor that limits the organization from achieving its goals. This could be a physical bottleneck in a manufacturing process, a policy restricting efficiency, or a market demand outpacing supply capabilities (Sunarta, Rohman & Kawedar, 2020). The goal is to focus resources and attention on improving or alleviating these constraints to maximize throughput and achieve organizational objectives effectively. Once a constraint is identified, TOC advocates a process of exploiting, elevating, and subordinating other activities to it. Exploiting means fully utilizing the constraint's capacity to maximize output. Elevating involves taking actions to increase the capacity of the constraint, whether through technological improvements, process redesign, or resource allocation. Subordinating non-constraints ensures that the entire system operates in alignment with the constraints' needs, preventing wasted effort and resources elsewhere (Younus, Zaidan & Mahmood, 2020).

Furthermore, TOC emphasizes the importance of a holistic view of the system rather than optimizing individual parts in isolation. It encourages organizations to consider the impact of local decisions on the entire system's performance. This systems thinking approach helps in balancing capacity, inventory, and throughput across different parts of the organization to achieve overall efficiency and goal attainment (Mbugi & Lutego, 2022). Another critical aspect of TOC is continuous improvement through a cycle of ongoing identification, improvement, and reassessment of constraints. This iterative process ensures that as constraints are alleviated or removed, new ones may emerge, requiring attention and optimization. By consistently refining and optimizing the constraints, organizations can achieve sustainable improvements in performance and maintain competitive advantage in dynamic environments (Debala, Khan & Bhat, 2022).

Conceptual Framework

A conceptual framework is s a lot of wide thoughts and standards taken from important fields of enquiry and used to structure an ensuing introduction (Cooper and Schindler, 2018). Applied systems are utilized to clarify how the free factors influence the reliant variable.

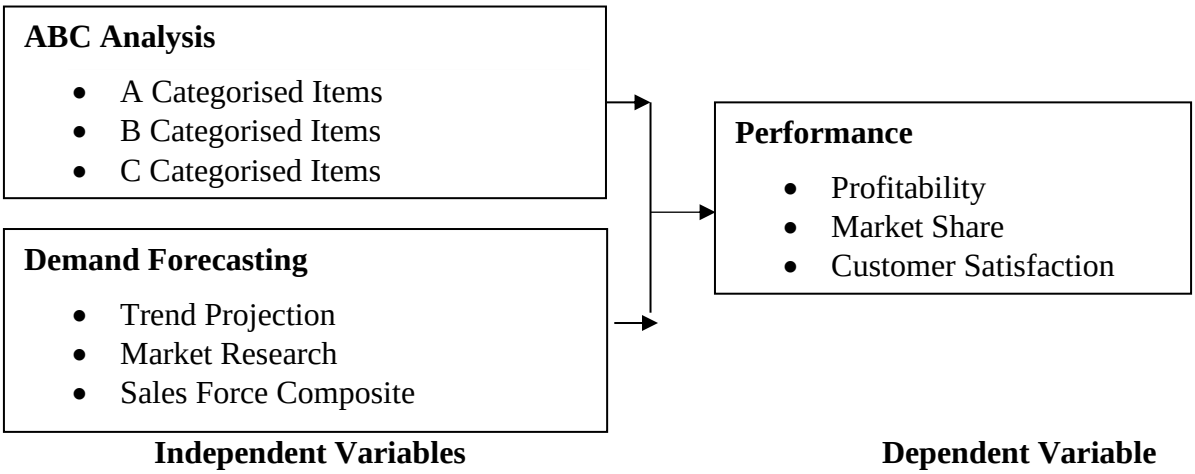

Figure 2. 1: Conceptual Framework

ABC Analysis

This strategy utilizes the Pareto standard as the reason for this procedure. The Pareto standard expresses that, for some occasions, generally 80% of the impacts originate from 20% of the causes. The ABC strategy utilizes this rule to expect that 20% of the parts in a distribution center identify with 80% of the deals, these are the "A" things (Kimutai, 2015). The guideline is then stretched out to two different classes where "B" things represent 30% of the things and 15% of deals and "C" things speak to half of the things in the distribution center, however just 5% of deals.

The things in the stockroom must be distinguished as A, B or C things. This is typically accomplished with the assistance of a PC framework, for example, stock control programming. When every one of the things in the distribution center has been allocated a classification, the occasions every class ought to be tallied should be resolved. The things with the most noteworthy deals worth ought to be checked more as often as possible than things that have low deals. In this manner, a thing that has been relegated as an "A" thing will be tallied more as often as possible than things that are assigned as "C" things (Koumanakos, 2018).

Demand Forecasting

Demand forecasting is the process of estimating future customer demand for a product or service based on historical data, market analysis, and other relevant factors. The goal of demand forecasting is to predict how much of a product will be needed over a specific period, which

helps businesses make informed decisions about inventory levels, production schedules, staffing, and financial planning (Ndiwa & Chege, 2022).

Trend projection is a quantitative forecasting method that involves analyzing historical data to identify patterns or trends and then extending these patterns into the future. This approach relies on the assumption that past trends will continue into the future, making it useful for predicting demand based on historical performance. Trend projection can be applied using various statistical techniques, such as moving averages or exponential smoothing, which help smooth out short-term fluctuations and highlight longer-term trends. While this method is relatively straightforward and effective when historical trends are stable, it may not account for sudden changes or disruptions in the market. As a result, trend projection is best used in conjunction with other forecasting methods to provide a more comprehensive view of future demand (Sunarta, Rohman & Kawedar, 2020).

Market research involves gathering and analyzing information about market conditions, consumer preferences, and competitive dynamics to forecast future demand. This qualitative approach helps businesses understand external factors that may impact demand, such as shifts in consumer behavior, economic trends, or technological advancements. Market research can include surveys, focus groups, interviews, and analysis of industry reports. By incorporating insights from these sources, companies can adjust their forecasts to better align with current market conditions and emerging trends. While market research provides valuable contextual information, it can be time-consuming and may introduce subjective biases, so it is often used alongside quantitative methods to enhance forecasting accuracy (Younus, Zaidan & Mahmood, 2020).

Sales force composite is a forecasting method that relies on the input and expertise of a company's sales team to predict future demand. In this approach, sales representatives, who are directly engaged with customers and have insights into market conditions and purchasing intentions, provide their estimates of future sales. These individual forecasts are then aggregated to produce a comprehensive demand forecast. This method benefits from the sales team's frontline knowledge and understanding of customer needs, which can provide valuable insights that statistical methods might overlook. However, the accuracy of sales force composite forecasting can be influenced by individual biases or inconsistent input, so it is often supplemented with quantitative data and other forecasting techniques to ensure a more balanced and reliable prediction (Mbugi & Lutego, 2022).

Empirical Review

ABC Analysis and Organization Performance

Lyson (2019) contends that ABC investigation must be overseen well to accomplish the exhibition objectives. An observable pattern in stock administration research is the expanding use of scientific models/PC innovation, bringing issues to light on the monetary advantages of hearty stock administration, however critical exploration coordinated at completely describing stock administration methods (IMTs) has been somewhat scanty, in spite of its significance for reasonable money related administration.

Robert (2020) likewise attempted to legitimize the utilization of altered Just in Time (JIT) strategic based way to deal with overseeing stock of transitory items. Sari (2008) utilized factual procedure observing devices with stock levels and stock-outs as key measurements in accomplishing proactive stock arrangement intercession with regards to helpful gracefully chains. Their outcomes demonstrated the chance of identifying wild provider flags in advance and essentially decreasing stock-outs through unique changes of stock levels.

Additionally, Baker (2021) utilized ABC investigation information to set up the nexus between stock administration and firm productivity among U. S. producing firms. The specialists found that a lower proportion of stock to deals for a firm is related with higher overall revenue for the firm, however the particular IMTs that helped the ventures to accomplish gainfulness were not

the focal point of the investigation. In comparable vein, Arrowsmith et al., (2013), utilized the ABC examination framework to feature the adequacy (or inadequacy) of interior control of a whole association.

Demand Forecasting and Firm Performance

Sunarta, Rohman and Kawedar (2020) examined on demand forecasting and organizational performance: hotel starred in Bali province, Indonesia. Data were collected using a questionnaire sent directly to the main managers of three, four and five-star hotels in the Province of Bali, Indonesia. The study found that demand forecasting had a positive and significant effect on organizational performance. The study concluded that demand forecasting affects organizational performance.

Younus, Zaidan and Mahmood (2020) assessed on the effects of demand forecasting on organizational performance in Malaysian small and medium sized enterprises (SMEs). The study applied a quantitative research approach and the survey elicited responses from 260 respondents representing all SMEs firms. The study found that demand forecasting had a positive effect on organizational performance in SMEs. The study concluded that demand forecasting is important to an organization's success.

Ndiwa and Chege (2022) investigated on demand forecasting and supply chain performance of dairy processing firms in Kiambu County, Kenya. The study employed descriptive research design. The target population was three diary firms in Kiambu therefore the study used census sampling method to sample 96 respondents. The study found that there is a significant relationship between demand forecasting and supply chain performance. The study concluded that demand forecasting impacts supply chain performance of dairy processing firms in Kiambu County, Kenya.

RESEARCH METHODOLOGY

Research Design

The research used a cross-sectional survey design. Within a cross-sectional survey, the study measures the results and experiences of the sample subjects at the same time (Setia, 2019). Cross-sectional survey design gives a clear image of the patterns and is useful at a particular point in time to monitor current research population circumstances, characteristics and their opinion. A cross-sectional survey also describes the prevalence of a given attribute in a specified population at a particular time point.

Target population

According to Energy Regulatory Commission (2023), there are 98 oil marketing firms in Kenya. The unit of analysis was the 98 oil marketing firms while the unit of observation was management employees working in the oil marketing firms. In each firm, the study will target 1 top management employees, 2 middle level management employee and 3 lower level employees. The total target population was therefore be 588 management employees.

Sample Size and Sampling Technique

The sample size of the study was determined using Yamane's Formula (Yamane, 1997):

$$n = \frac{N}{1+N(e^2)}$$

Where N= target population (588)

e = margin of error (0.05)

$$n = \frac{588}{1+588(0.05^2)} = 238$$

Therefore, the sample size for the study was 238 respondents. This represented 40.48% of the study target population. Mugenda and Mugenda (2018) recommends that the sampling of at least 30% of the population should be represented thus the choice of 238 respondents is considered a representative sample.

Table 3. 1: Sample Size

Category	Target Population	Sample Size
Top Management Employees	98	40
Middle Management Employees	196	79
Lower Management Employees	294	119
Total	**588**	**238**

The study adopted a simple random sampling because the method is free of sampling error or classification error. Creswell (2018) assert that, in simple random sampling, each member of the population under study has an equal chance of being selected. In this study, bias was avoided by use of random sampling, because there is a high probability that all the population characteristics are represented in the sample.

Data Collection Instruments

This research used a questionnaire to collect primary data. According to Patton *et. al* (2019), a questionnaire is appropriate in gathering data and measuring it against a particular point of view. It provides a standardized tool for data collection. The researcher obtained research permit from relevant authorities required for data collection. Structured and open questions were used to collect primary data from the field. The questionnaires were pilot tested to ascertain the extent to which the instrument is correct and to eliminate ambiguous questions, and improve on validity and reliability

Pilot Test

Cooper and Schindler (2019) noted that the pilot study is undertaken to identify flaws in the design, composition as well as to provide proxy data for the selection of the probability sample. In this case, the methods used in the pre-test of the questionnaire should be the same as those used in the actual analysis or data collection. Pilot studies are imperative in detecting vagueness and help in assessing the type of responses given to assess if they assist the investigator to meet the objectives laid down for the study (Viechtbauer *et al,* 2019). According to Mugenda and Mugenda (2019), the pre-test number is expected to be low, around one (1) percent to ten (10) percent of the target population. In this investigation, the research questionnaires were tested on ten percent of the total sample size.

Data Analysis and Presentation

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 hypothesis. The descriptive statistical techniques of frequency, mean, and standard deviation was used to analyze the quantitative data acquired. The results were displayed using frequency distribution tables, which kept track of how many times a score or response appears. Qualitative data collected was analysed using content analysis and presented in prose form.

Inferential statistics including regression and correlation analysis was used in the study. According to Saunders *et al.* (2019), correlation is a statistical tool that helps to determine the relationships between two or more variables. Cooper and Schindler (2019) indicate that correlation, as measured by a correlation coefficient, is the degree to which a linear predictive relationship exists between random variables. Pearson correlation coefficient was used for testing associations between the independent and the dependent variables. According to

Wagana (2019), a correlation coefficient (r) has two characteristics, strength and direction. The strength of the relationship is indicated by how r tends toward 1, the maximum value possible. r is interpreted as follows; when r = +1 it means there is perfect positive correlation between the variables, when r = 0 it means there is no correlation between the variables, that is the variables are uncorrelated, when r = -1 it means there is perfect inverse correlation between the variables.

A multiple regression model was used to test the significance of the influence of the independent variables on the dependent variable. Multiple regression analysis was used to determine how push supply chain strategy influence performance of oil marketing firms in Kenya

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Descriptive Statistics

ABC Analysis and Performance of Oil Marketing Firms

The first specific objective of the study was to find out how ABC Analysis influences the performance of oil marketing firms in Kenya. The respondents were requested to indicate their level of agreement on ABC Analysis and the performance of oil marketing firms in Kenya. The results were as shown in Table 4.1.

From the results, the respondents agreed that A categorised items plays a significant role in profitability improvement (M=3.983, SD= 0.765). In addition, the respondents agreed that B categorised items plays a significant role in profitability improvement (M=3.806, SD=0.845). Further, the respondents agreed that C categorised items plays asignificant role in profitability improvement (M=3.785, SD=0.688). The respondents also agreed that A categorised items plays a significant role in expanding market share (M=3.718, SD=0.788). In addition, the respondents agreed that B categorised items plays a significant role in expanding market share (M=3.698, SD=0.686). The respondents agreed that C categorised items plays asignificant role in expanding market share (M=3.662, SD=0.617).

Table 4. 1: ABC Analysis and Performance of Oil Marketing Firms

	Mean	Std. Deviation
A Categorised items plays a significant role in profitability improvement	3.983	0.765
B Categorised items plays a significant role in profitability improvement	3.806	0.845
C Categorised items plays asignificant role in profitability improvement	3.785	0.688
A Categorised items plays a significant role in expanding market share	3.718	0.788
B Categorised items plays a significant role in expanding market share	3.698	0.686
C Categorised items plays asignificant role in expanding market share	3.662	0.617
Aggregate	**3.731**	**0.743**

Demand Forecasting and Performance of Oil Marketing Firms

The second specific objective of the study was to assess the influence of demand forecasting on the performance of oil marketing firms in Kenya. The respondents were requested to indicate their level of agreement on various statements relating to demand forecasting and the performance of oil marketing firms in Kenya. The results were as presented in Table 4.2.

From the results, the respondents agreed that trend projection effectively predicts future demand based on historical data. (M=3.955, SD= 0.895). In addition, the respondents agreed

that using trend projection helps in identifying long-term demand patterns (M=3.946, SD=0.886). Further, the respondents agreed that market research provides valuable insights into consumer demand and preferences (M=3.907, SD= 0.725). The respondents also agreed that their demand forecasts are more accurate due to thorough market research (M=3.902, SD= 0.881). The respondents agreed that the sales force composite method incorporates frontline insights into demand forecasting (M=3.898, SD=0.683). In addition, the respondents agreed that sales force input significantly improves the accuracy of our demand forecasts (M=3.884, SD=0.796).

Table 4. 2: Demand Forecasting and Performance of Oil Marketing Firms

	Mean	Std. Deviation
Trend projection effectively predicts future demand based on historical data.	3.955	0.895
Using trend projection helps in identifying long-term demand patterns.	3.946	0.886
Market research provides valuable insights into consumer demand and preferences.	3.907	0.725
Our demand forecasts are more accurate due to thorough market research.	3.902	0.881
The sales force composite method incorporates frontline insights into demand forecasting.	3.898	0.683
Sales force input significantly improves the accuracy of our demand forecasts.	3.884	0.796
Aggregate	**3.878**	**0.757**

Correlation Analysis

The present study used Pearson correlation analysis to determine the strength of association between independent variables (ABC Analysis and demand forecasting) and the dependent variable (performance of oil marketing firms in Kenya).

Table 4. 3: Correlation Coefficients

		Firm Performance	ABC Analysis	Demand Forecasting
Firm Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	189		
ABC Analysis	Pearson Correlation	.846**	1	
	Sig. (2-tailed)	.001		
	N	189	189	
Demand Forecasting	Pearson Correlation	.869**	.179	1
	Sig. (2-tailed)	.000	.071	
	N	189	189	189

From the results, there was a very strong relationship between ABC Analysis and performance of oil marketing firms in Kenya (r = 0.846, p value =0.001). The relationship was significant since the p value 0.001 was less than 0.05 (significant level). The findings conform to the findings of Ekiyor, Amino, and Altan, (2019) that there is a very strong relationship between ABC Analysis and firm performance.

The results also revealed that there was a very strong relationship between demand forecasting and performance of oil marketing firms in Kenya (r = 0.869, p value =0.000). The relationship was significant since the p value 0.000 was less than 0.05 (significant level). The findings are in line with the results of Ajoke *et al* (2019) who revealed that there is a very strong relationship between demand forecasting and firm performance.

Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables (ABC Analysis and demand forecasting) and the dependent variable (performance of oil marketing firms in Kenya).

Table 4. 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.872	.760	.761	.10129

a. Predictors: (Constant), ABC Analysis and demand forecasting

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 0.760. This implied that 76% of the variation in the dependent variable (performance of oil marketing firms in Kenya) could be explained by independent variables (ABC Analysis and demand forecasting).

Table 4. 5: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.027	2	6.014	83.83	.000[b]
	Residual	6.552	186	.035		
	Total	18.579	188			

a. Dependent Variable: performance of oil marketing firms in Kenya

b. Predictors: (Constant), ABC Analysis and demand forecasting

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 83.83 while the F critical was 2.421. 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 ABC Analysis and demand forecasting on performance of oil marketing firms in Kenya.

Table 4. 6: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.330	0.084		3.929	0.002
	ABC Analysis	0.376	0.095	0.375	3.958	0.002
	demand forecasting	0.387	0.097	0.386	3.990	0.000

a Dependent Variable: Performance of oil marketing firms in Kenya

The regression model was as follows:

$$Y = 0.330 + 0.376X_1 + 0.387X_2 + \varepsilon$$

According to the results, ABC Analysis has significant effect on performance of oil marketing firms in Kenya, $\beta 1=0.376$, p value= 0.002). The relationship was considered significant since the p value 0.002 was less than the significant level of 0.05. The findings conform to the findings of Ekiyor, Amino, and Altan, (2019) that there is a very strong relationship between ABC Analysis and firm performance.

In addition, the results revealed that demand forecasting has significant effect on performance of oil marketing firms in Kenya $\beta 1=0.387$, p value= 0.000). The relationship was considered significant since the p value 0.000 was less than the significant level of 0.05. The findings are

in line with the results of Ajoke *et al* (2019) who revealed that there is a very strong relationship between demand forecasting and firm performance.

Conclusions

The study concludes that ABC analysis has a positive and significant effect on performance of oil marketing firms in Kenya. Findings revealed that, A Categorised Items, B Categorised Items and C Categorised Items influences performance of oil marketing firms in Kenya.

The study also concludes that demand forecasting has a positive and significant effect on performance of oil marketing firms in Kenya. Findings revealed that trend Projection, market Research and sales Force Compositeinfluences performance of oil marketing firms in Kenya.

Recommendations

In addition, Oil marketing firms should prioritize the implementation of ABC analysis to classify inventory based on value and consumption rates. This will enable firms to focus resources on high-value and fast-moving products (Category A) while optimizing the management of lower-priority items (Categories B and C). This approach will improve cost-efficiency, reduce wastage, and enhance overall financial performance.

Oil marketing firms should invest in advanced demand forecasting tools and techniques, incorporating both historical sales data and market trends to accurately predict future demand. This will enable firms to optimize their inventory levels, minimize stockouts or overstocking, and better align supply with demand. Effective demand forecasting will lead to improved decision-making, cost savings, and enhanced operational efficiency, ultimately boosting overall firm performance.

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