Adoption of Vendor Managed Inventory Practices on Supply Chain Performance in the Selected Automobile Industries in Nairobi County, Kenya

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Abstract: **Following the Corona pandemic, which has spread across the world by September 2020, many companies around the world have been aware of the fact that they should always strive to inculcate and rely on the efficient supply chains and networks in order to compete effectively in international markets and to sustain their competitive edge. As a matter of fact, the management of supply chain has caused a paradigm shift in the way most organisation operates (Brandt, 2009) The main objective of this study was to determine role of adoption of vendor managed inventory practices on supply chain management performance in the selected automobile industries in Nairobi County, Kenya with specific objective to establish role of supplier demand visibility, communication mechanism, inventory decisions, replenishment decisions and supply chain management performance in the selected automobile industries. The study adopted a cross sectional research design. The target population comprised employees in supply chain department in selected automobile companies in Nairobi according to their size. Snowball sampling technique was adopted in this study. A semi- structured questionnaire was administered through the e-mail survey and hand delivery. Secondary data was obtained from both published and unpublished records. The questionnaire was tested for validity and reliability. Both quantitative and qualitative techniques was used to analyses the data with the assistance of SPSS software program version 25. The study found that supplier demand visibility, communication mechanism, inventory decisions, replenishment decisions have significant role on supply chain management performance in the selected automobile industries. In conclusion the study recommended that automobile manufacturing companies should source for more resources, work on its time constraints and negative attitude from some stakeholders and public when undertaking the process. Further the companies need to gain visibility into their complex network of suppliers and logistics providers to collectively sense and properly respond to changes in supply and demand, customers are less likely to tolerate delivery or product errors. Supply chain demand visibility is crucial in preventing order errors and will prevent customers from taking their business elsewhere. This will ensures them are knowledgeable about every aspect of your inventory and allows firms to better help customers by improving performance and reducing errors. Putting in place the right infrastructure can help firms to achieve better supply chain visibility and therefore reduce costs, improve performance and identify problems, ultimately improving your reputation and growth.**

Keywords: **supplier demand visibility, communication mechanism, inventory decisions, replenishment decisions, supply chain management performance.**

1. INTRODUCTION

Following the Corona pandemic, which has spread across the world by September 2020, many companies around the world have been aware of the fact that they should always strive to inculcate and rely on the efficient supply chains and networks in order to compete effectively in international markets and to sustain their competitive edge. As a matter of fact, the management of supply chain has caused a paradigm shift in the way most organisation operates (Brandt, 2009). Companies are now seen to focus on their core competencies and rope in external suppliers, distributors and logistics providers to ensure that products are manufactured and delivered in accordance with the provisions of their customers (Zammori, Braglia, & Frosolini, 2009). It is therefore imperative that close cooperation be established between the various members of the supply chain.

Vendor management inventory (VMI)'s underlying concept is that the vendor, or retailer, is responsible for handling the inventory at the location of the customer (Kuk, 2004). In comparison to consumers who also handle a large inventory of bought goods, vendors are typically responsible for a more narrow selection of products that they have more detailed experience of and may thus be best able to anticipate and handle the distribution of their products to the end customer. Having the retailer responsible for replenishment could result in a decrease in procurement and logistics costs across the whole supply chain (Disney, & Towill, (2003).

In order for the supplier to be able to manage this inventory, information about inventory levels, expected demand, promotional activities, and product related costs should be made available to the supplier by the buyer (Barratt, 2004; Kumar and Kumar, 2003). This information enables the supplier to make better replenishment decisions based on total supply chain costs and prevent local sub-optimization when both players would try to optimize their own profits individually. Early availability of such information enables the supplier to be pro-active (Kaipia et al., 2002), which should result in reduced lead times. Effective implementation of VMI thus requires a cross-functional and inter-organizational approach. Accurate and timely demand information needs to be shared between the marketing and supply functions of the buyer as well as with the planning function of the supplier. Vendor management inventory (VMI) has been one of the industry's supply chain management practices that enables to bridge the gap and that of other supply chain members. It helps to ensure a much more profound integration and cooperation between them (Dresner et al ., 2009; Disney and Towill, 2003). VMI is a key strategy which would also be based on the principle that manufacturing companies or suppliers are willing to take responsibility for both management and all product inventory decisions on the client's side through using customer request information (Zammori et. al., 2009; Claassen et al ., 2008; Chopra and Meindl, 2008), and is also known as continuous replenishment or supplier managed inventory, which takes the responsibility for managing the customers.

Vendor management inventory rapid expansion has been triggered by the globalization of the supply chain. The VMI concept was developed in the belief that suppliers were better equipped to manage the inventory of the customer because they have been adept at assessing lead times. Consistent and effective details relating to the customer's expected demand and inventory levels enables providers to plan manufacturing and delivery, prevent stock out, improve inventory visibility and reduce inventory costs (Leung et al., 2009; Croson & Donahue, 2005). Therefore, the implementation of Vendor management inventory rejects a prediction echelon of demand and order, dampens the bullwhip effect, and minimizes interruption with the decision making of the production process.

In different sectors, such as retail, manufacturing the adoption of Vendor Managed Inventory had been considered (Zachariassen, et.al. 2014), This same approach has also been taken into consideration in the automotive sector (Bhakoo et al. 2012). The car industry constantly seeks opportunities for cost-cutting, operational efficiencies, and better care quality (Chen et al., 2013). Increasing automobile costs, heavy competition and complex requirements and regulations have brought changes to the Automotive Industries environment. These have increased the focus on increasing demand-driven automotive supply chains, enhancing cooperation among supplying players and implementing better and better standards (Rossetti et al. 2012). The approach was drawn to the attention of the automobiles firms given the claimed potential advantages of Vendor Managed Inventory, including improved performance, a reduction in costs and improved customer satisfaction (Haavik 2009). However, Vendor Managed Inventory has not become a standard mode of operation in supply chains (Niranjan et al., 2012).

Implementation of the Vendor Managed Inventory does not in itself ensure that the organizations benefit from the advantages and benefits claimed. There are challenges in implementing, managing, and sustaining Vendor Managed Inventory initiatives that may reduce benefits or lead to failures in implementation. The literature noted lack of trust, incorrect information sharing, delays in the transmission of information, and inefficient coordination as potential challenges to Vendor Managed Inventory adoption (Waller et al., 1999; Sari, 2007; Niranjan et al., 2012). The challenges and benefits may vary significantly in different contexts (Elvander et al., 2007). It is clear that " Vendor Managed Inventory cannot be a universally applicable solution" (Niranjan et al., 2012). The main purpose of this research is to investigate whether VMI is beneficial to automotive supply in the Kenyan context, so that automotive organizations can improve their supply chain function.

Supply chain performance

The performance of the supply chain is measured in accordance with the standard or prescript indicators of efficiency and environmental obligations indicated by Adeyemi and Salami (2010), which include cycle time, productivity, waste reduction and regulatory compliance. An organization should therefore measure the input as well as the output of

inventory management to improve operational efficiency. Better inventory management would end up making the funds available productive elsewhere for use (Ghosh & Kumar, 2003). Control of inventory therefore facilitates the coordination of the access, control, use as well as procurement of material. The direction of activity to get the right stock at the right time and in the right quantity is stock control and is directly related to each and every organization's production function..

This means that the operation of an inventory management directly and indirectly affects the financial performance of any organization (Miller 2010). Due to the relatively large inventory of NGOs (NGOs) in Kenya, a great chunk of the fund of the organization is committed to the inventory levels-keeping. In order to avoid the costs of changing production rates, overtime costs, sub-contracting, unnecessary selling costs and back order penalties in high demand periods it is essential to deploy advanced techniques to manage inventory efficiently (Chen, 2005).

Automotive industry in Kenya

In Kenya, the automotive industry mainly involves motor vehicle assembly, retailing and distribution. In the country, there are several motor car dealers. Major retailers are Toyota East Africa/Toyota Kenya, Cooper Motor Corporation, General Motors East Africa (GMEA), Simba Colt, DT Dobie, Inchcape Kenya Ltd, Beiben Trucks - Nelion Trading Ltd, Urysia Limited, Trans Africa Motors Ltd (FAW & IVECO), while Major assemblers are the following Kenya Vehicle Manufacturers (KVM) - Also Assembles for Hyundai Motor Corp and Peugeot South Africa, General Motors East Africa (GMEA), Honda Motorcycle Kenya Ltd, Associated Vehicle Assemblers Ltd (AVA), Toyota (East Africa)/ Toyota Kenya Ltd (TKL).

Statement of the Problem

Inventory accounted for an important part of current assets in most automotive manufacturing industries. Effective inventory management can lead to cost savings that are considerable. The efficient inventory management can achieve a potentially 6 percent saving in total costs (Bell & Sturkhart, 2007). The cost of carrying stock in a business is now commonly agreed to be between 4% and 10% higher than the stock value (PPOA, 2020). In 2020, poor inventory management related cases in terms of low-performance projections were affected during the pandemic car manufacturing industries (Covid-19) (KAM, 2020). This led to deliberately misinterpret delivery, late delivery and inflexibility in the company and therefore also influenced their customer satisfaction (KAM, 2020). Downstream chain tends to result in chain profit loss.

A few local researches have been performed out to establish the role of inventory management in improving the performance of commercial firms in Kenya. There are studies carried out in the developed world on the private sector's adoption of inventory management systems (Krichanchai, & MacCarthy, 2017; Parsa, Rossetti, Zhang, & Pohl, 2017). In the context of developing countries and, in specific, of the private sector in developing countries, this has created the need to validate the others. In terms of improving the effectiveness and efficiency of inventory management in the private sector, the implementation of vendor management inventory systems will adversely affect performance. The study thus focuses on how vendor management enhances the performance of companies in Kenya in the supply chain. This study therefore sought to establish the role of adoption of vendor managed inventory practices on supply chain management performance in the selected automobile industries in Nairobi County, Kenya.

Objective of study

This section consisted of both general and specific objectives of the study

General Objectives of the study

The main objective of the study will be to determine role of adoption of vendor managed inventory practices on supply chain management performance in the selected automobile industries in Nairobi County, Kenya.

Specific objectives of the study

1. To establish role of supplier demand visibility on supply chain management performance in the selected automobile industries in Nairobi County, Kenya.

2. To determine role of communication mechanism on supply chain management performance in the selected automobile industries in Nairobi County, Kenya.

3. To assess role of inventory decisions on supply chain management performance in the selected automobile industries in Nairobi County, Kenya.

4. To assess the role of replenishment decisions on supply chain management performance in the selected automobile industries in Nairobi County, Kenya.

Research Questions

1. What is the role of supplier demand visibility on supply chain management performance in the selected automobile industries in Nairobi County, Kenya?

2. What is the role of communication mechanism on supply chain management performance in the selected automobile industries in Nairobi County, Kenya?

3. What is the role of Inventory decisions on supply chain management performance in the selected automobile industries in Nairobi County, Kenya?

4. What is the role of Replenishment Decisions on supply chain management performance in the selected automobile industries in Nairobi County, Kenya?

Significance of the Study

The study was significant to the Policy Makers and Government, Scholars, Researchers and Research Institutions, Manufacturing Firms

Scope of the Study

The focus of this study was on all automobile companies in Kenya as the setting. It was, however, be limited only to auto companies within Nairobi County and its environs have been one of the fastest large-scale retail automotive growth centers, notably with easy connectivity to the right infrastructure. All of these leading automobile retailers are positioned in these regions, particularly in Nairobi County. The study was focusing on the adoption of vendor-managed inventory practices in the selected automotive industries in Nairobi County, Kenya, on supply chain management performance.

2. LITERATURE REVIEW

Theoretical Framework.

A theoretical framework refers to the theory that a researcher chooses to guide him / her in his / her research. In this study, the theoretical framework consist of theories/models, which exhibit the influence of resourcing strategies on employee retention using four theories namely: Resource Dependency Theory , Network Theory, Economic Order Quantity (EOQ) Model and Transaction Cost Analysis theory.

Conceptual Framework
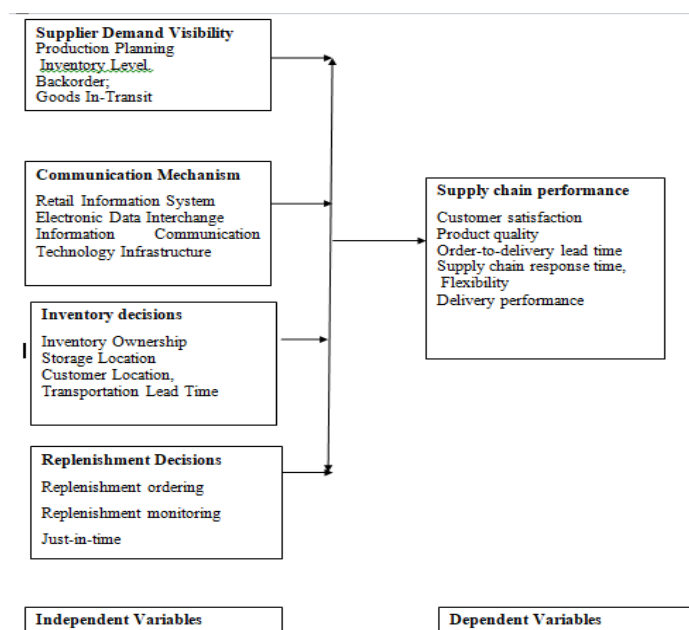
3. RESEARCH METHODOLOGY

Research Design.

According to Orodho (2008), the study design is a comprehensive data collection and analysis plan. Researchers' beliefs and understanding of the world have an influence on research design. The study adopted a Cross-sectional research design.

Target Population.

A target population is that population to which a researcher wants to generalize the findings of the study. In this study, the target population was comprised employees in supply chain department in selected automobile companies in Nairobi according to their size.

Sampling frame.

According to Mugenda and Mugenda (2003), a sampling frame is a list of sampling units for a study. The sample frame for this study was consisted of a list of all employees in supply chain department in selected automobile companies in Nairobi. The list was obtained from the human resourse department of all companies was visited and could also be obtained from their respective central and personnel registries.

Sample size and Sampling Technique

In this section, the study was examined sampling technique, sampling procedures, sampling frame as well as derivation of the sample size. Snowball sampling technique was adopted in this study. This study defines sampling as the process of selecting these groups hence Snowball sampling it is used when group of people recommends potential participants for a study, or directly recruits them for the study.

Data Collection Instruments.

In this study the researcher was used both primary and secondary sources of data. According to, Mugenda and Mugenda (2003) primary data are those items that are original to the problem underway. Primary data was gathered using structured and semi-structured questionnaires. The questionnaire was designed to address specific objectives, research question or test hypothesis.

Secondary information sources are data neither collected directly by the user nor specifically for the user. Secondary data means data that are already available (Kothari, 2006). It involves gathering data that already has been collected by someone else. This involves the collection and analysis of published material and information from internal sources. This is often referred to as desk research.

Pilot test

Before the actual data collection, the pilot test was done. In accordance with (Kothari 2006) at least 10% of the sample was consisted the pilot test. In this study, the questionnaire was pre-tested using a representative sample identical to, but not those to be included in the actual study, before administering it to respondents in a field setting. . The suitability of the questionnaires of this study was pre-tested by first administering it to about 10 respondents.

Data Analysis and Presentation

Data analysis refers to examining the coded data critically and making inferences. The presentation of data refers to ways of arranging data to make it clearly understood. Data was analyzed using both descriptive and inferential statistics. The SPSS Version.23 will be used because it is favored for it will give quantitative results.Both qualitative and quantitative data was analyzed. Qualitative data was analyzed by reading the questionnaire. Descriptive statistics (frequencies and percentage) was computed for all the five objectives. Quantitative data was computed for inferential statistics with a 0.05 (5%) test significance level the resulting P values and Coefficients was used to compare the variables, where two sets of the variable was compared to see the extent to which they are related and if they can be used to predict each other. In this study, the findings was presented using tables, graphs, histograms, bar charts and pie charts. Data presentation was made used of percentages, tabulations, means and other means of central tendencies. Tables was used to summarize respondents for further analysis and will facilitate comparison. Percentages was used to determine the extent to which respondents view the contributions towards the adoption of vendor managed inventory practices on supply chain performance in the selected automobile industries in Nairobi county, Kenya. Vendor managed inventory practices will be X (independent variables) and dependent variables will be Y (supply chain performance).

4.   RESEARCH FINDINGS AND DISCUSSION

The Response Rate

The targeted respondents in the study were supply chain managers of the automobile industries in Nairobi County, Kenya and which were registered members of Kenya Association of Manufacturers (KAM) in the year 2020. A total of 80 self-administered questionnaires were filled out of the expected 51 yielding a response rate of 63.8 % as depicted in Table 4.1. This response rate was good and representative and confirms to Mugenda (2008) stipulation that a response rate of 50% is adequate for analysis; a rate of 60% is good and a response rate of 70% and over is excellent. This good response rate was attributed to the data collection procedure, where the researcher personally administered questionnaires to the respondents who filled them. The researcher collected the filled questionnaires later. This response rate demonstrated willingness to respond to study. Babbie (2004) asserts that return rates of 60% is good to study and publish.

Table 4.1 Response rate

Status	Response	% Response
Successful	51	63.8%
Unsuccessful	29	36.2%
Total	**80**	**100%**

Reliability Analysis

Results on reliability are presented in Table 4.2. The Cronbach's Alpha from the instruments on supplier demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions was 0.721, 0.740, 0.732 and 0.722 respectively which was higher than the reliability cut off conventional value of 0.7. All the variables were considered reliable since they had above 0.7 coefficients for Cronbach Alpha and were hence accepted for the study.

Table 4.2 Reliability Results

Variable	Cronbach's Coefficient	Remark
Supplier demand visibility	0.721	Accept
Communication mechanism	0.740	Accept
Inventory decisions	0.732	Accept
Replenishment decisions	0.722	Accept
Supply chain Performance	0.782	Accept

Validity of the Research Instrument

This study used face validity, construct and content validity. Construct validity refers to the suitability of the scale used for the purpose of operationalising the theoretical construct and measuring it. Content on the other hand is the degree to which the items on a test are representative of the universe of behaviour that the test was designed to sample. To verify content validity, a pre-test was done by administering the instrument to conveniently selected focus group of two experts in the field of procurement and supply chain management and to the supervisor who provided input, comments and estimation of the suitability of the survey items. This was meant to assess the clarity of the instrument items so that those items found to be inadequate in measuring the variables were either discarded or modified to improve the quality of the research instrument thus increasing its validity.

Descriptive Analysis for Study Variables on the Likert-Type Scale

The interpretation of research findings by use of Likert Scale determine the accuracy of results. In the self-administered questionnaire in this study, four of the sections comprised of items in a Likert type scale format using a scale of SD–Strongly Disagree; D-Disagree; N–Neutral; A–Agree; and SA–Strongly Agree as recommended by Alan (2001). The items in the Likert Scale were affirmative statements. Each of the four sections of Likert type scale format had six items. Items were limited to six so as to increase the response rate. Frauke et al., (2008) argue that when a questionnaire is too lengthy, the response rate is low and the quality of the responses is compromised. In the study on equidistance of Likert-type scales and validation of inferential methods using experiments and simulations, Lantz (2013) indicates that Likert-type data are often assumed to be equidistant by applied researchers so that they can use parametric methods to analyse the data. Since the equidistance assumption is rarely tested, Lantz (2013) argues that the validity of parametric analyses of

Likert-type data is often unclear and that the preferred statistical method to analyse Likert-type data depends on the nature of their non-equidistance as well as their skewness. In addition, during analysis of Likert-type data, Carifio and Rocco (2007) indicates Strongly Disagree (SD) $1 < SD < 1.8$; Disagree (D) $1.8 < D < 2.6$; Neutral (N) $2.6 < N < 3.4$; Agree (A) $3.4 < A < 4.2$; and Strongly Agree (SA) $4.2 < SA < 5.0$. This scale gives an equidistance of 0.8. This weighting criteria of responses of Likert-type data advanced by Carifio and Rocco (2007) were followed in data analysis in this study in the interpretation of results obtained by use of Likert scale.

Descriptive Analysis for Study of role of adoption of vendor managed inventory practices on supply chain performance in the selected automobile industries in Nairobi County,

This section presents findings on the independent variables (supplier demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions) and their influence on supply chain performance.

Descriptive Analysis for Study on Supplier Demand Visibility

The researcher sought to know whether automobile industries was doing enough in terms of Supplier Demand Visibility and if not, what could be done to improve this step in Vendor management inventory.

Thirty one percent of the participants in the study indicated that there are familiar with Supplier Demand Visibility in their business. However, majority of the participants in the study (68.6%) indicated that there are not familiar with Supplier Demand Visibility in their business and suggested that for automobile industries to make Supplier Demand Visibility better, the companies should source for more resources, work on its time constraints so so that it can achieve it.

Also Majority of the participants in the study (82.4%) agreed that their organization collects and share information from multiple organizations about supplies. Leaving the rest disagreeing

Ninety two percent of the participants in the study agreed that Visibility of suppliers present to organization a detailed picture about our supplier. Majority of the participants in the study (86.2%) agreed that Production Planning assist in supplier visibility as part of consideration. The overall mean was 4.2 with a standard deviation of 0.74.

These findings imply that Supplier Demand Visibility as an independent variable was adequately measured by the statements as indicated by majority of the participants in the study. Further, the findings imply that Supplier Demand Visibility was well fit as a proxy variable for Vendor managed Inventory in measuring the role of adoption of vendor managed inventory practices on supply chain management performance in the selected automobile industries in Nairobi County, Kenya. The findings were consistent with those of Babatunde and Adebisi (2012) who studied vendor managed inventory and performance in a competitive business setting in Cadbury and Nestle Nigeria PLCs and the results exposed that there is an important affiliation between Supplier Demand Visibility and performance..

Table 4.3 Supplier Demand Visibility

Statement	S D	A	N	A	SA	Mean	Std. Dev
I am familiar with Supplier Demand Visibility in our business	2.0	7.8	7.8	54.9	27.5	4.0	0.93
Our organization collects and share information from multiple organizations about supplies	0.0	3.9	3.9	58.8	33.3	4.2	0.70
Visibility of suppliers present to organization a detailed picture about our supplier	0.0%	0.0	7.8	58.8	33.3	4.3	0.60
Production Planning assist in supplier visibility as part of consideration	0.0	5.9	2.0	60.8	31.4	4.2	0.74
Our organisations always concentrate at stock level as part of strategic plans	0.0	3.9	9.8	52.9	33.3	4.2	0.76
Average						**4.2**	**0.74**

Descriptive Analysis for Study on communication mechanism

The researcher sought to determine role of communication mechanism on supply chain management performance in the selected automobile industries in Nairobi County, Kenya. The findings were presented in Table 4.4. Majority of the participants in the study (94.2%) agreed that they are familiar with all communication mechanism for vendor managed

inventory practices in their business. Ninety percent (90.2%) of the participants in the study agreed that company has a good communication channels with all the suppliers. Eighty six percent of the participants in the study agreed that any objective set in the agency was well specified, measurable, achievable realistic and time bound. Majority of the participants in the study (66.6%) agreed that strategy development was well carried out in the agency involving all affected stakeholders in the process.

Eighty four percent (84.3%) of the participants in the study agreed that company has adopted Vendor-managed inventory (VMI) systems among other current technologies. The overall mean was 4.1 with a standard deviation of 0.90 and the rest was as table below

Table 4.4 communication mechanism

Statement	SD	A	N	A	SA	Mean	Std.
I am familiar with all communication mechanism in our business	0.0	3.9	2.0	66.7	27.5	4.2	0.65
Our company has a good communication channels with all the suppliers	0.0	5.9	3.9	54.9	35.3	4.2	0.78
The company has adopted Vendor-managed inventory (VMI) systems among other current technologies.	2.0	7.8	3.9	29.4	56.9	4.3	1.01
The company applies current inventory management technologies like, Vendor Managed Inventory (VIM) and Electronic data interchange (EDI).	0.0	19.6	13.7	43.1	23.5	3.7	1.05
The company maintains Cooperation and effective communication mechanisms	5.9	3.9	5.9	54.9	29.4	4.0	1.03
Average						4.1	0.90

Descriptive analysis for study on role of inventory decisions on supply chain performance in the selected automobile industries in Nairobi County, Kenya

The researcher sought to assess the role of inventory decisions on supply chain performance in the selected automobile industries in Nairobi County, Kenya. The findings were presented in Table 4.5. Eighty eight percent (88.2%) of the participants in the study agreed that they are familiar with inventory decisions in their business. Majority of the participants in the study (86.3%) agreed that excessive inventory level lead to inventory write off losses . Eighty two percent (82.3%) of the participants in the study agreed that excessive inventory level results in stock outs and production delays. Eighty eight percent of the participants in the study agreed that Management of the order will result in excessive total inventory management costs. Majority of the participants in the study (72.5%) agreed that inventory decision required considerable knowledge skills of cost and management accounting. The overall mean was 4.1 with a standard deviation of 0.94. These findings imply that inventory decisions has an independent variable was adequately measured by the statements as indicated by majority of the participants in the study. Further, the findings imply that inventory decisions was well fit as a proxy variable for Vendor management inventory in measuring the influence of Vendor management inventory practices on organizational performance in the selected automobile industries in Nairobi County, Kenya.

Table 4.5 Descriptive analysis for study on role of inventory decisions on supply chain performance in the selected automobile industries in Nairobi County, Kenya

Statement	SD	A	N	A	SA	Mean	Std.
I am familiar with inventory decisions in our business	2.0	2.0	7.8	49.0	39.2	4.2	0.83
Excessive inventory level lead to inventory write off losses	2.0	5.9	5.9	51.0	35.3	4.1	0.91
Excessive inventory level results in stock outs and production delays	5.9	2.0	9.8	52.9	29.4	4.0	1.01
Management of the order will result in excessive total inventory management costs	2.0	5.9	3.9	58.8	29.4	4.1	0.87
Inventory decision required considerable knowledge skills of cost and management accounting	2.0	13.7	11.8	39.2	33.3	3.9	1.09
Average						4.1	0.94

Descriptive analysis for study on role of replenishment decisions on supply chain performance in the selected automobile industries in Nairobi County, Kenya

The researcher sought to investigate the role of replenishment decisions on supply chain performance in the selected automobile industries in Nairobi County, Kenya. The findings were presented in Table 4.6. Majority of the participants in the study (94.1%) agreed that the company is familiar with replenishment decisions in our business. Ninety percent of the respondent agreed that replenishment decisions requires reorder point strategy that select a stock level that signal when it is time to reorder inventory. Majority of the participants in the study (90.2%) agreed that the company requires periodic strategy of replenishing inventory at specific intervals.

Eighty four percent (84.3%) of the participants in the study agreed that Lean time replenishment takes advantage of times when picking operations are slow to bring stock to acceptable levels in forward pick locations. Ninety percent of the participants in the study agreed that the campany use the demand strategy for inventory replenishment of goods out of stocks. The overall mean was 4.1 with a standard deviation of 0.79.

These findings imply that replenishment decisions as an independent variable was adequately measured by the statements as indicated by majority of the participants in the study. Further, the findings imply that replenishment decisions was well fit as a proxy variable for Vendor management inventory practices in measuring the role of replenishment decisions on supply chain performance in the selected automobile industries in Nairobi County, Kenya..

Table 4.6 Role of replenishment decisions on supply chain performance in the selected automobile industries in Nairobi County, Kenya

Statement	SD	A	N	A	SA	Mean	Std.
I am familiar with replenishment decisions in our business	0.0	3.9	2.0	60.8	33.3	4.2	0.68
Replenishment decisions requires reorder point strategy that select a stock level that signal when it is time to reorder inventory	2.0	2.0	5.9	60.8	29.4	4.1	0.78
The company requires periodic strategy of replenishing inventory at specific intervals	0.0	5.9	3.9	64.7	25.5	4.1	0.73
Lean time replenishment takes advantage of times when picking operations are slow to bring stock to acceptable levels in forward pick locations	2.0	9.8	3.9	54.9	29.4	4.0	0.96
Our campany use the demand strategy for inventory replenishment of goods out of stocks	2.0	3.9	3.9	62.7	27.5	4.1	0.81
Average						4.1	0.79

Organisational Performance

Several parameters were used to measure firm performance in the current study. The respondents were requested to indicate their opinions with regard to firm performance measurement on a five point Likert scale. The study findings showed that 45.7% of the respondents reported that their firm's sales growth rate was better, whereas 54.3% reported that their sales were greater. Second, 52% of the manufacturing firms reported that their profit growth rate was better, while 59.5% reported that their profit for the last five years improved and 50.4% reported that their profitability ratio was enhanced. On overall, 56.3% reported that their firms overall performance improved as represented in Table 4.7. This supports the earlier findings by Allen et al., (2006), Thompson et al. (2008) and Datta (2009) who contends that Vendor management inventory practices can successfully be linked to organizational performance. The researcher then concludes that Vendor management inventory practices have a strong predictive effect on performance of manufacturing firms in Kenya.

Table 4.7

	MW	W	I	B	MB	Mean	STD
Sales growth rate for the past 5 years	1.6	8.7	15	45.7	29.1	3.9	1.0
Profit growth rate for the past 5 years	2.4	7.1	18.1	52	20.5	3.8	0.9
Profitability ratio for the past 5 years	0.8	8.7	14.3	59.5	16.7	3.8	0.8
Efficiency ratio that is asset turnover ratio for last 5 years	1.6	7.9	22	50.4	18.1	3.8	0.9
						3.8	0.9

Inferential Statistics

This section presents the inferential findings for the study. Pearson's moment of correlation is presented first then regression analysis follows.

Pearson's Correlation Coefficient

Pearson's bivariate correlation shows the affiliation amid two factors and starts from 1 to -1 where 1 shows a robust positive link and a -1 indicates a sturdy negative affiliation. The more the association moves to zero the feebler it turn out to be. The research findings were presented in Table 4.8. The affiliation amid supplier demand visibility and supply chain performance was affirmative and sturdy (0.640) and the variable was statistically important (0.000). The affiliation amid communication mechanism and supply chain performance was affirmative and sturdy (0.692) and the variable was statistically important (0.000).

The affiliation amid inventory decisions and supply chain performance was affirmative and sturdy (0.621) and the variable was statistically important (0.000). The affiliation amid replenishment decisions and supply chain performance was affirmative and sturdy (0.691) and the variable was statistically important (0.000). The results show that all the study factors were all affirmatively linked with supply chain performance.

They also show that supplier demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions were all key contributing factors of supply chain performance as significance threshold were less than 0.05. The findings imply that all the predictor factors: supplier demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions were key determinants of supply chain performance.

The findings are consistent with those of Rintari & Makori (2012) did a research aiming to scrutinize the part of supplier demand visibility on the performance of Kenya's Public Service Commission and the results showed a positive association between supplier demand visibility and performance of the Public Service Commission of Kenya.

Maroa and Muturi (2015) studied the influence of communication mechanismas a proxy of vendor management inventory practices on the performance of Floriculture Firms in Kenya and found that it is positively associated to performance.

Table 4.8 Pearson's Correlation Coefficient

Variable		Supply Chain Performance	Supplier Demand Visibility	communication mechanism	Inventory Decisions	Replenishment Decisions
Supply Chain Performance	Pearson Correlation	1	.640**	.692**	.621**	.691**
	Sig. (2-tailed)		0.000	0.000	0.000	0.000
Supplier Demand Visibility	Pearson Correlation	.640**	1	.546	.428	.584
	Sig. (2-tailed)	0.000		0.000	0.000	0.000
Communication Mechanism	Pearson Correlation	.692**	.546	1	.506	.580
	Sig. (2-tailed)	0.000	0.000		0.000	0.000
Inventory Decisions	Pearson Correlation	.621**	.428	.506	1	.572
	Sig. (2-tailed)	0.000	0.002	0.000		0.000
Replenishment Decisions	Pearson Correlation	.691**	.584	.580	.572	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	

Model Fitness

Results on the goodness of fit were presented in Table 4.9 below. The findings designate that the study factors: supplier demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions were fittingly enlightening Supply Chain Performance. This deduction is reinforced by the finding of R square of 0.672 which shows that supplier demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions jointly explain 67.2% of Supply Chain Performance.

Table 4.9 Model Fitness

Model	Coefficient
R	0.820
R Square	0.672
Adjusted R Square	0.644
Std. Error of the Estimate	0.31764

Analysis of Variance

ANOVA statistics were presented on Table below. The findings indicate that the overall model was statistically significant. The findings show that the F Critical was of 23.578 which was greater than the F Critical which was 3.789 at p value 0.000. This indicates that there was goodness of fit of the model. These results indicate that supplier demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions are significant predictors of Supply Chain Performance.

Table 4.10 Analysis of Variance

Model	Sum of Squares	Df	Mean Square	F Stat	Sig.
Regression	9.516	4	2.379	23.578	0.000
Residual	4.641	46	0.101		
Total	14.157	50			

Regression of Coefficients

Findings on the beta coefficients of the joint regression model were presented in Table 4.11. The outcomes demonstrate an affirmative link amidst supplier demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions and Supply Chain Performance and whose coefficients of beta are 0.267, 0.310, 0.253 and 0.235 respectively. The outcomes of the study show that; a unit rise in supplier demand visibility contributes to a rise in Supply Chain Performance by 0.267 units; a unit rise in communication mechanism by one unit contributes to a rise in Supply Chain Performance by 0.310 units; a unit rise in Inventory decisions by one unit contributes to a rise Supply Chain Performance by 0.253 units a unit rise in Replenishment Decisions by one unit contributes to a rise Supply Chain Performance by 0.235 units.

Supplier demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions were satisfactorily explaining Supply Chain Performance as they were all statistically significant as they had significance levels of 0.041, 0.009, 0.041 and 0.045 which was less than the conventional significance level of 0.05. These results indicate that Supply Chain Performance is predicted by supplier demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions.

Table 4.11 Regression of Coefficients

Variable	Unstandardized Coefficients	Std. Error	t	Sig.
(Constant)	-0.257	0.476	-0.541	0.591
Supplier Demand Visibility	0.267	0.127	2.103	0.041
Communication Mechanism	0.310	0.113	2.748	0.009
Inventory Decisions	0.253	0.121	2.103	0.041
Replenishment Decisions	0.235	0.114	2.065	0.045

Overall, the regression equation is as follows:

Supply Chain Performance = 0.267 Supplier Demand Visibility + 0.310 Communication Mechanism + 0.253 Inventory Decisions + 0.235 Replenishment Decisions - 0.257

5. SUMMARY, RECOMMENDATION AND CONCLUSION

Summary of the study

The current study stemmed from the realization of the research problem in literature role of adoption of vendor managed inventory practices on supply chain performance in the selected automobile industries in Nairobi County, Kenya. Empirically most of the studies on the role of adoption of vendor managed inventory practices have been skewed towards

use of primary data and only specific vendor managed inventory practices (supplier demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions) had been evaluated. Among the several studies which had been done in the Kenyan perspective majority have not examined the causal joint role of adoption of vendor managed inventory practices on supply chain performance in the selected automobile industries. Consequently, the researcher's primary purpose was to examine the role of adoption of vendor managed inventory practices on supply chain performance in the selected automobile industries in Nairobi County, Kenya. Further, the study sought to test this hypothesis; there is no significant role of adoption of vendor managed inventory practices on supply chain performance in the selected automobile industries in Nairobi County, Kenya.

In order to meet the overall objective and test the study hypotheses the study adopted Cross-sectional research design. Snowballing was used to select a sample of 80 selected automobile industries in Nairobi County, Kenya. Primary data was collected from 80 selected automobile industries and out of 80 questionnaires which were issued only 51 were completely filled and returned which yielded a response rate of 63.8%. The independent variables attributed examined in the study were supplier demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions. Descriptive analysis such as frequency, percentage, mean and standard deviation were used to analyze the data which was summarized using figures and tables. Correlation analysis was used to examine the strength of the relationship between organizational performances and supplier demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions and regression analysis was used to examine the nature of the role of adoption of vendor managed inventory practices on supply chain performance in the selected automobile industries in Nairobi County, Kenya. On overall 66.3% of the variation in supply chain performance in the selected automobile industries can be explained by supplier demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions while the remaining percentage can be explained by other factors excluded in the model. The findings of the study demonstrated that vendor managed inventory practices have role on organizational performance.

Conclusion of the study

This section presents the conclusions made in the current study. This study was to assess role of adoption of vendor managed inventory practices on supply chain performance in the selected automobile industries in Nairobi County, Kenya. The indicators of vendor managed inventory practices were supply chain demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions. The indicators for supply chain performance in this case were Customer satisfaction, Product quality, Order-to-delivery lead time, Supply chain response time and Flexibility. supply chain demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions has a positive significant role with the organisational performance. It was therefore concluded that there was a positive and significant role of adoption of vendor managed inventory practices on supply chain performance in the selected automobile industries in Nairobi County, Kenya. To improve on the supply chain performance in the selected automobile industries in Nairobi County, Kenya. it was therefore concluded that to some extent, Production Planning, Inventory Level. Backorder and Goods In-Transit as supply chain demand visibility play a critical role on Customer satisfaction, Product quality, Order-to-delivery lead time, Supply chain response time and Flexibility, In addition it was concluded that to some extent, also Retail Information System, Electronic Data Interchange, Information Communication Technology Infrastructure as communication mechanism play a critical role on Customer satisfaction, Product quality, Order-to-delivery lead time, Supply chain response time and Flexibility, Moreover it was concluded that to some extent, Inventory Ownership, Storage Location, Customer Location, Transportation Lead Time mechanism play a critical role on supply chain performance. Lastly , it was concluded that to some extent, Replenishment ordering, Replenishment monitoring and Just-in-time play a critical role on supply chain performance.

Recommendation of the study

On supply chain demand visibility, the researcher recommends that automobile manufacturing companies should source for more resources, work on its time constraints and negative attitude from some stakeholders and public when undertaking the process. Further the companies need to gain visibility into their complex network of suppliers and logistics providers to collectively sense and properly respond to changes in supply and demand., customers are less likely to tolerate delivery or product errors. Supply chain demand visibility is crucial in preventing order errors and will prevent customers from taking their business elsewhere. This will ensures them are knowledgeable about every aspect of your inventory and allows firms to better help customers by improving performance and reducing errors. Putting in place the

right infrastructure can help firms to achieve better supply chain visibility and therefore reduce costs, improve performance and identify problems, ultimately improving your reputation and growth.

On communication mechanism, the automobile manufacturing companies in Kenya should make efforts to communicate of its mandate better, devoting enough time to projects and make use of experts in Vendor management inventory practices. Communication should plays an important role in innovation, and open communication that can lead to innovation and new ideas in several ways. Employees should understand what is important to their organizations can focus on making improvements and identifying opportunities for innovation that can help further success rather than simply just doing the bare minimum required by their job descriptions.

On Inventory Decisions, Automobile manufacturing should intensify resource mobilization to address lack of resources to be applied in the strategy. Automobile manufacturing should ensure effective inventory management that will optimize the supply chain, eliminate cash flow, and reduce the possibility of occurrence on inventory shortage caused by variable orders.Lastly on Replenishment decisions, A vendor should be given complete authority to decide on the quantity need to replenish the stock and the time it would be delivered. Vendors should also be given limited authority on either the quantity or the delivery time by the retailers, with the retailer's having authority over the other one.

Area of further studies

From the findings, the R^2 was 67.1% which means that the independent variables (supply chain demand visibility, communication mechanism, Inventory decisions and Replenishment Decisions) explained supply chain performance to an extent of 67.1%. There are other factors which are not captured by the proposed model in this study which are captured by 32.9% which is not explained. Another study can be carried out to determine other factors explaining 32.9% of performance in view of the study context and scope.This research did not address all the issues around the Vendor management inventory practices in any way and for that reason it is recommended that alternative study be done in other institutions for instance in the Kenyan Public and private sector perhaps applying the same factors used in this study so as to find out whether the outcomes will be consistent in an unlike setting. An additional study can also be executed using the same topic on the Vendor management inventory practices but applying different proxies to measure the variable in determining overall performance to find out whether the study outcomes will be inconsistent or consistent to the present study.

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