



**EFFECTS OF INVENTORY MANAGEMENT SYSTEMS ON PERFORMANCE OF MANUFACTURING COMPANIES IN
ELDOROT TOWN, KENYA**

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EFFECTS OF INVENTORY MANAGEMENT SYSTEMS ON PERFORMANCE OF MANUFACTURING COMPANIES IN ELDORET TOWN, KENYA

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ABSTRACT

This study examined effect of inventory management systems on performance of manufacturing companies in Eldoret Town, Kenya. A cross sectional research design was used. Manufacturing companies' staff benefited to know the contributions of inventory management systems and how it enhances effectiveness and efficiency of inventory in manufacturing companies. It also benefited them to know the challenges faced in the adoption of inventory management systems and how to improve the performance of the manufacturing company. The study found out that Material Requirement Planning (MRP) affects manufacturing companies performance in Eldoret Town, Kenya with $p=0.048$. It was reported that Distribution Resource Planning (DRP) System affects performance of manufacturing companies in Eldoret Town, Kenya with $p=0.000$. It was found that Vendor Managed Inventory (VMI) system affects performance of manufacturing companies in Eldoret Town, Kenya with $p=0.000$. In addition the study revealed that Just in Time (JIT) System affects performance of manufacturing companies in Eldoret Town, Kenya with $p=0.000$. The study concluded that manufacturing companies benefit from adoption of inventory management systems. The study recommended that the management of manufacturing companies need to adopt proper inventory management systems in order to reduce operation costs such as holding costs, ordering costs among others hence increasing company performance. The management of manufacturing companies need to train employees on how to use the inventory management systems in order for them to understand how it operates efficiently and effectively hence increasing firm performance; and the supply chain department needs to provide policies and rules to govern the inventory management systems in order to protect the system.

Keywords: Inventory Management Systems; Performance of Manufacturing Companies; Material Requirement Planning (MRP); Distribution Resource Planning (DRP) System; Vendor Manage Inventory (VMI) System; and Just in Time (JIT) System.

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INTRODUCTION

Inventory management systems play a vital role in minimizing costs and maximizing profits, also meeting customer demands by making sure there is enough stock at the right quantity, quality and available at the right time and the right place. To make sure inventory is managed properly, there needs to be adoption of inventory management systems. Inventory management systems refers to control and set of policies that manage the level of inventory, assess the inventory which will be maintained, raw materials will be used for production and the finished goods will be delivered (Jonsson & Mattsson, 2016). Performance of manufacturing companies is where a business is giving high returns in terms of customer loyalty, reduction of operations costs incurred in inventory and increasing of service delivery (Stanton, 2016).

Inventory management systems have played a role in the business operations for many years in the global arena. Inventory management systems play a vital role in enhancing performance in controlling inventory in manufacturing companies. Companies in developed countries such as China, USA have continually tried to maintain in the competitive market through firm operations. It is high time for companies in developing countries such in Africa and India to implement effective inventory management systems in order enhance competitive advantage (Rajeev, 2016). Handling of inventories such as raw materials, work in progress, and finished goods are stored as buffer stock in order to manage running out of goods (Salawati, Tinggi & Kadri, 2015). Too much of handling of stock especially finished goods occupy a lot of space hence increasing inventory costs such as handling costs and also negatively affects business operations (Dimitrios, 2016).

In Kenya, more organizations such as large business enterprises have implemented inventory management systems in achieving firm performance and competitive advantage (Nyabwanga & Ojera, 2012). Nyabwanga and Ojera (2012) did a study on 71

manufacturing firms and 129 business companies in Kisii County where they found out around 70% of the firms and companies selected had adopted inventory management systems in firm operations hence increasing competitive advantage. Irungu and Wanjau (2014) asserted that new upcoming supermarkets are continuing adopting inventory management systems which improves customer service, business efficiency and retail firm performance. This recommends that companies, retail business among others continue to adopt inventory management systems around the world.

Kenya manufacturing firms such as in Eldoret are facing competition from other manufacturing companies where they need to adopt efficient techniques of controlling and assessing the inventory is managed by eliminating waste in the production process, reducing holding costs, ordering costs and many others. Many companies in developing countries like Kenya have adopted inventory management systems in improving their business operations but still they experience challenges in managing of inventory and increasing operation costs. For the companies to survive in the market they need to implement advance stock management systems (Kenya Association of Manufactures, 2016). Therefore, it is upon this background information the study determined how inventory management systems affect performance of manufacturing companies in Eldoret Town, Kenya.

Statement of the Problem

Inventory management is very important in manufacturing companies since it increases firm operations. Manufacturing companies have high levels of finished goods which offer a variety of products and also delivery goods to its customers at the right time (Stanton, 2016). In Kenya, there has been high decrease of sales margin 3.1% from 2013 to 2015 with inefficiency of inventory management systems implemented. This is due to company weakness due to over stocking, under stocking, and

failure to meet company targets (Kenya Bureau of Statistics, 2016). The company's stores are overcrowded making the movement of goods to be hard hence affecting the service delivery in the stores (Wood, 2015).

Manufacturing companies' managers are familiar how inventory plays in running of organization operations. In most manufacturing companies, direct materials help in the production process hence affecting company performance. Poor inventory management systems leads most of finished goods to stay in the store before being delivered to its final consumption hence affecting organization ineffectiveness (Kenya Association of Manufactures, 2016).

But for firms operating in industries that feature high volume turnover of raw materials and/or finished products, computerized tracking systems have emerged as a key component of business strategies aimed at increasing productivity and maintaining competitiveness. Poor implementation of inventory management systems affects the company performance in managing inventory hence decreasing sales volume (Davila, 2013).

Eshun (2013) reported that industries in Africa Countries such in Kenya have ignored on how inventory management systems helps in reduction of costs incurred by inventory but they end up using more funds in investing on inventory. The companies are not able to meet customer demands due poor supply of inventory hence affecting firm performance. Industries gain profit from effective and efficient inventory since it amounts between 59%-67% of total costs (Mulumba, 2016). It forms the basis of the study.

Mogere, Oloko and Okibo (2013) investigated on how inventory control systems affects performance of Gianchore Tea Factory, Nyamira County, Kenya where they found out that inventory management systems helps in controlling of inventory, improves lead time

management, enhancing customer supplier relationship hence enhancing competitive advantage.

Wambua, Okibo, Nyang'au and Ondieki (2015) did a study where they found out that all departments engage so much in inventory warehousing systems as a way of improving their financial performance of Adventist Book Centers (ABC), Kenya

Kitheka and Ondieki (2014) found out that inventory management automation in retail shops increases the effectiveness and efficiency of operations where it reduces operation costs, and increases service delivery.

From the above studies there is no study which has focused on how Material Requirement Planning (MRP); Distribution Resource Planning (DRP) System; Vendor Managed Inventory (VMI) System; and Just in Time (JIT) System affects performance of manufacturing companies in Kenya. This study therefore bridged the gap of knowledge in the relationship between inventory management systems and performance of manufacturing companies in Eldoret Town, Kenya.

Objectives of the Study

- To examine effects of Material Requirement Planning (MRP) on performance of manufacturing companies in Eldoret Town, Kenya.
- To assess effects of Distribution Resource Planning (DRP) System on performance of manufacturing companies in Eldoret Town, Kenya.

Research Hypotheses

- H₀₁. There is no statistically significant effect of Material Requirement Planning (MRP) on performance of manufacturing companies in Eldoret Town, Kenya.
- H₀₂. There is no statistically significant effect of Distribution Resource Planning (DRP) System on performance of manufacturing companies in Eldoret Town, Kenya.

THEORETICAL REVIEW

Adaptive Structuration Theory

The study used Adaptive Structuration Theory (AST) by Giddens (2014). Giddens (2014) explains that the theory shows interaction between improved systems, firm structures and group involvement where it focuses on the structures, rules and resources provided by the systems as a reason for enhancing firm operations.

Giddens (2014) asserted that Adaptive Structuration Theory is important on how inventory management systems affect performance of manufacturing companies. The theory evaluates the change process on two perspectives: the types of systems used in managing the inventory in the firm and the structures which govern the systems in order to perform effectively and efficiently.

Theory of Inventory and Production

Also the research employed the theory of inventory and production by Weber and Rick (2015). Weber and Rick (2015) explains the theory explains organizations especially companies need to improve and implement inventory management systems which are efficient and effective and are in line with organization operations hence meeting firm objectives and goals

The theory focuses on all manufacturing operations which include: manufacturing, production, warehousing, supply chain, spare part allocation and distribution. According to Weber and Rick (2015), companies need to follow guidelines and rules when implementing a new system for effective work properly of the system such as inventory management system. The guideline include: the need for adopting the system, evaluate and assess the environment, assess the amount of inventory the company usually have, develop a mathematical model which describes the behavior of inventory; examine the challenges will experience in implementing of the system, develop and adopt the inventory rules with firms strategic management, and

design the information system that helps in providing inventory levels information design. Frank, Rachel and Izak (2013) also asserted that the adoption of the system considered the costs incurred in the inventory management.

Lean Theory

In addition the study employed Lean theory by Eroglu and Hofer (2011). The model is a expansion of Just in Time. The approach helps the management of business in making inventory management decisions, enhance ordering of goods, improve lead time management and helps in purchasing and supply decisions. Inman and Green (2016) the theory helps in reduction of waste as the production is ongoing and also it eliminates stock of raw materials. Eroglu and Hofer (2011) reported that lean management enhances efficiency and effectiveness of business operations. The lean management helps to control the ordering and receiving of goods where it makes sure there is no stock out in order to improve re-ordering process. It helps in the inventory management flexibility.

Empirical Literature Review

Material Requirement Planning (MRP)

Sanghal (2015) studied effects of excess inventory on long term stock price performance in U.S.A manufacturing firms. The objective of the study was to assess how inventory affects stock price performance. A descriptive survey design was used. The target population included 109 manufacturing companies where 2189 employees were targeted. Simple random sampling technique was used to select 61 companies and 457 employees were sampled. Both primary and secondary data were used as data collection instruments. Quantitative and qualitative analysis were used in analyzing, presentation and interpretation of data. Both descriptive and inferential statistics were used in analyzing and presentation of data. The study found out that long run price enhances too much of

inventory to stay in the store hence increasing holding costs. This affects the performance of manufacturing companies. The study concludes high increase of price affects holding of inventory. The study recommended that the manufacturing companies needs to implement inventory management systems especially the Material Requirement Planning (MRP) system in order to calculate the quantities required to be manufactured hence reducing holding costs of finished goods (Sanghal, 2015).

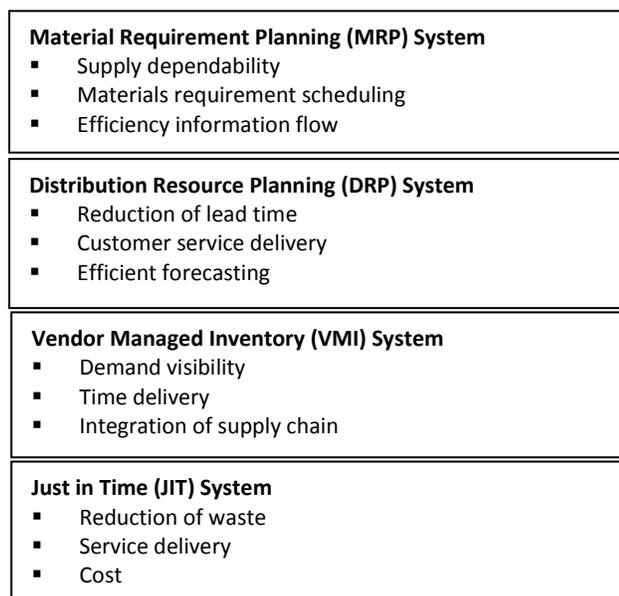
Distribution Resource Planning (DRP) System

Koumanakos (2016) focused on how inventory management practices affects performance manufacturing companies in Greece. A descriptive survey design was used. The target population included 115 manufacturing companies where 5761 employees were targeted. Simple random sampling technique was used to select 91 companies and 721

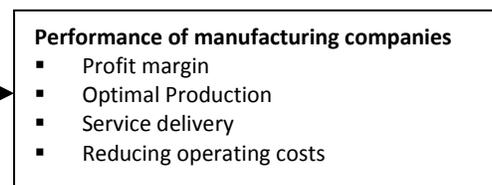
employees were sampled. Both primary and secondary data were used as data collection instruments. Quantitative and qualitative analysis were used in analyzing, presentation and interpretation of data. Both descriptive and inferential statistics were used in analyzing and presentation of data. Koumanakos indicated that Distribution Resource Planning and Just In Time Systems enhance service delivery where the goods are delivered to its customers at the right time and at the right place hence increasing customer satisfaction and firm performance. The study concluded that inventory management systems affects firm performance. The study recommends that food, textile and chemicals factory management needs to improve the inventory control systems in order to increase its firm performance through delivery its goods to its customers at the right time and right place.

Conceptual Framework

Inventory Management Systems



Performance of Manufacturing Companies



Independent Variable

Dependent Variable

Figure 1: Conceptual Framework

Source: Author (2019)

METHODOLOGY

A cross sectional research design was used. The study was carried out in Eldoret Town, Uasin Gishui County. The Ministry of Industrialization have enhance improvement of manufacturing industries where there has been an increase of new manufacturing industries being open in Eldoret where there are small and large industries in the area which has improve the economy of the town to increase. The residents of Uasin Gishu County do not need to purchase products from different counties but can access the products in the same town. Manufacturing industries in Eldoret include: Rift Valley Bottlers, Rai Plywoods (K) Ltd, Unga Group Millers, Rivatex Limited, and Eldoret Grains Limited. The companies in Eldoret Town had been experience challenges in managing their inventory hence affecting the performance of the company. The target population comprised of 47 top level management, 45 middle level management (stores, production, supply chain, finance, ICT, material handling department, sales and marketing, transport, total quality management) and 1032 employees working in the departments of the 5 manufacturing companies in Eldoret Town (Ministry of Industrialization Report 2017, Uasin Gishu County). The target population was 1124 respondents. Questionnaire was used as data collection instrument. The questionnaires were administered to the employees working in manufacturing companies within Uasin Gishu County. Quantitative analysis was

used in analyzing, presentation and interpretation of data with the help of inferential and descriptive statistics. Data was analyzed and presented through descriptive and inferential statistics with the help of SPSS (Version 21) and Ms Excel.

Multiple regression analysis was used to show correlation of the variables. The regression model is as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$$

Where:

Y = Performance of Manufacturing Companies

X₁= Material Requirement Planning (MRP) System

X₂= Distribution Resource Planning (DRP) System

X₃= Vendor Managed Inventory (VMI) System

X₄= Just in Time (JIT) System

ε= Is the error in the observe value for the with case

β₀= The constant in the equation

β= is the Coefficient of X

While β₁, β₂, β₃ and β₄ are coefficients of determination and ε is the random error term.

RESULTS

Descriptive Analysis of Material Requirement Planning (MRP)

The research sought to examine effects of Material Requirement Planning (MRP) on performance of manufacturing companies in Eldoret Town, Kenya.

Table 1: Descriptive Results of Material Requirement Planning (MRP)

Statement		SD	D	UD	A	SA	Mean	Std	Skw	Kurt
It makes sure there is enough inventory to meet production demands hence reducing interruption of production	Freq	63	81	37	42	56	2.81	1.33	-0.28	-1.13
	%	22.6	29	13.3	15.1	20.1	56.2			
It plays a role in holding of inventory ensures uninterrupted business operations hence increasing efficiency and	Freq	38	64	30	102	43	3.19	1.33	-0.28	-1.21
	%	13.6	22.9	10.8	36.6	16.1	63.8			

effectiveness of firm operations										
Helps in speeding up production execution hence meeting customer demands	Freq	34	95	34	73	43	2.99	1.31	0.11	-1.27
	%	12.2	34.1	12.2	26.2	15.4	59.8			
It enhances capability and speed to providing products that meet customers' demands hence increasing customer satisfaction	Freq	76	49	57	85	12	2.67	1.28	-0.03	-1.36
	%	27.2	17.6	20.4	30.5	4.3	53.4			
Helps in managing lead time hence minimizing ordering costs	Freq	33	0	10	94	142	4.12	1.27	-1.64	1.59
	%	11.8	0	3.6	33.7	50.9	82.4			
There is enough inventory in order to meet the production demands	Freq	10	0	17	98	154	4.42	0.76	-1.36	1.65
	%	3.6	0	6.1	35.1	55.2	88.4			

The results indicated that 22.6% of the participants strongly disagreed, 29% disagreed, 13.3% were undecided, 15.1% agreed and 20.1% strongly agreed that use of MRP systems makes sure there is enough inventory to meet production demands hence reducing interruption of production. It had a mean of 2.81, Std=1.33, skweness = -0.28 and kurtosis=-1.33. The data was normally distributed and suitable for regression with skweness and kurtosis values ranging between -2.0 and +2.0. The data was normally distributed and suitable for regression. The standard deviation showed a lower uniformity of data and there was no homogeneity of data.

The findings indicated that 13.6% of respondents strongly disagreed, 22.9% disagreed, 10.8% were undecided, 36.6% agreed and 16.1% agreed that it plays a role in holding of inventory ensures uninterrupted business operations hence increasing efficiency and effectiveness of firm operations. It had a mean of 3.19, Std=1.33, skweness=-0.28 and kurtosis=-1.21. The data was normally distributed and suitable for regression with skweness and kurtosis values ranging between -2.0 and +2.0. The standard deviation showed a lower uniformity of data and there was no homogeneity of data.

According to table 1, 12.2% of employees strongly disagreed, 34.1% disagreed, 12.2% were undecided,

26.2% agreed and 15.4% strongly agreed that helps in speeding up production execution hence meeting customer demands. It had a mean of 2.99, Std=1.31, skweness=0.11 and kurtosis=-1.27. The data was normally distributed and suitable for regression with skweness and kurtosis values ranging between -2.0 and +2.0. The standard deviation showed a lower uniformity of data and there was no homogeneity of data.

From the results 27.2% of participants strongly disagreed, 17.6% disagreed, 20.4% were undecided, 30.5% agreed and 4.3% strongly agreed that it enhances capability and speed to providing products that meet customers' demands hence increasing customer satisfaction. It had a mean of 2.67, Std = 1.28, skweness=-0.03 and kurtosis=-1.36. The data was normally distributed and suitable for regression with skweness and kurtosis values ranging between -2.0 and +2.0. The standard deviation showed a lower uniformity of data and there was no homogeneity of data.

The findings indicated 11.8% of the respondents strongly disagreed, 3.6% were undecided, 33.7% agreed and 50.9% strongly agreed that helps in managing lead time hence minimizing ordering costs hence increasing profit volume. It had a mean of 4.12, Std=1.27, skweness=-1.64 and kurtosis=1.59. The data was normally distributed and suitable for

regression with skewness and kurtosis values ranging between -2.0 and +2.0. The standard deviation showed a higher uniformity of data and there was homogeneity of data.

Moreover table 1 indicated 3.6% of the employees strongly disagreed, 6.1% were undecided, 35.1% agreed and 55.2% strongly agreed that there is enough inventory in order to meet the production demands hence meeting customer demands and production effectiveness of the company. It had a mean of 4.42, Std=0.76, skewness=-1.36 and kurtosis=1.65. The data was normally distributed and suitable for regression with skewness and kurtosis values ranging between -2.0 and +2.0. The standard

deviation showed a higher uniformity of data and there was homogeneity of data.

From the results majority of respondents with 88.4% (mean=4.42) were of the opinion that there is enough inventory in order to meet the production demands hence meeting customer demands and production effectiveness of the company.

Descriptive Analysis of Distribution Resource Planning (DRP) System

The researcher sought to assess effects of Distribution Resource Planning (DRP) System on performance of manufacturing companies in Eldoret Town, Kenya.

Table 2: Descriptive Results of Distribution Resource Planning (DRP) System

Statement		SD	D	UD	A	SA	Mean	Std	Skw	Kurt
Enables physical resources requirement to be planned together with production and purchasing control hence increasing production process	Freq	69	82	52	48	28	2.58	1.30	0.40	-0.98
	%	24.7	29.4	18.6	17.2	10	51.6			
Helps smoothing the operations of the company hence reducing lead time	Freq	55	61	73	83	7	2.73	1.16	-0.14	-1.16
	%	19.7	21.9	26.2	29.7	2.5	54.6			
Helps to coordinate the flow of goods inside and outside the factory hence increasing efficiency and effectiveness of firm operations	Freq	53	42	23	109	47	2.75	1.21	0.05	-1.11
	%	20.8	15.1	8.2	39.1	16.8	55			
Helps in controlling under stocking and overstocking hence promoting inventory management	Freq	45	70	46	42	76	3.16	1.42	-0.37	-1.31
	%	16.1	25.1	16.5	15.1	27.2	63.2			
Provides the company with high level of customer service through meeting the demands of customers	Freq	52	74	61	76	16	2.75	1.21	0.05	-1.11
	%	18.6	26.5	21.9	27.2	5.7	75			
Helps in making sure there are no excess of products produced using the bullwhip effect	Freq	40	22	59	119	39	3.34	1.24	-0.68	-0.53
	%	14.3	7.9	21.1	42.7	14	66.8			

The results showed that 24.7% of the participants strongly disagreed, 29.4% disagreed, 18.6% were undecided, 17.2% agreed and 10% strongly agreed that enables physical resources requirement to be planned together with production and purchasing control hence increasing production process. It had a mean of 2.58, Std=1.30, skewness=0.40 and kurtosis=-0.98. The data was normally distributed and suitable for regression with skewness and kurtosis values ranging between -2.0 and +2.0. The data was normally distributed and suitable for regression. The standard deviation showed a lower uniformity of data and there was no homogeneity of data.

From the findings, 19.7% of employees strongly disagreed, 21.9% disagreed, 76.2% were undecided, 29.7% agreed and 2.5% strongly agreed that helps smoothing the operations of the company hence reducing lead time. It had a mean of 2.73, Std=1.16, skewness=-0.14 and kurtosis=-1.16. The data was normally distributed and suitable for regression with skewness and kurtosis values ranging between -2.0 and +2.0. The data was normally distributed and suitable for regression. The standard deviation showed a high uniformity of data and there was homogeneity of data.

The findings indicate that 20.8% of the respondents strongly disagreed, 15.1% agreed, 8.2% were undecided, 39.1% agreed and 16.8% strongly agreed that helps to coordinate the flow of goods inside and outside the factory hence increasing efficiency and effectiveness of firm operations. It had a mean of 2.75, Std=1.21, skewness=0.05 and kurtosis=-1.11. The data was normally distributed and suitable for regression with skewness and kurtosis values ranging between -2.0 and +2.0. The data was normally distributed and suitable for regression. The standard deviation showed a high uniformity of data and there was homogeneity of data.

According to the results, 16.1% of participants strongly disagreed, 25.1% disagreed 16.5% were

undecided, 15.1% agreed and 27.2% strongly disagreed that helps in controlling under stocking and overstocking hence promoting inventory management. It had a mean of 3.12, Std=1.46, skewness=0.01 and kurtosis=-1.42. The data was normally distributed and suitable for regression with skewness and kurtosis values ranging between -2.0 and +2.0. The data was normally distributed and suitable for regression. The standard deviation showed a lower uniformity of data and there was no homogeneity of data.

Table 2 indicated 18.6% of the respondents strongly disagreed, 26.5% disagreed, 21.9% were undecided, 27.2% agreed and 5.7% strongly agreed that provides the company with high level of customer service through meeting the demands of customers. It had a mean of 2.75, Std=1.21, skewness=0.05 and kurtosis=-1.11. The data was normally distributed and suitable for regression with skewness and kurtosis values ranging between -2.0 and +2.0. The data was normally distributed and suitable for regression. The standard deviation showed a high uniformity of data and there was homogeneity of data.

In addition the study shows 14.3% strongly disagreed of the employees strongly disagreed, 7.9% disagreed, 21.1% were undecided, 42.7% agreed and 14% strongly agreed that helps in making sure there are no excess of products produced using the bullwhip effect hence reducing overstocking and holding of stock. It had a mean of 3.34, Std=1.24, skewness=-0.68 and kurtosis=-0.53. The data was normally distributed and suitable for regression with skewness and kurtosis values ranging between -2.0 and +2.0. The data was normally distributed and suitable for regression. The standard deviation showed a high uniformity of data and there was homogeneity of data.

From the findings majority of participants with 66.8% (mean 3.34) were of the view that helps in making sure there are no excess of products produced using

the bullwhip effect hence reducing overstocking and holding of stock.

From the findings is concurred by Koumanakos (2016) who indicated that Distribution Resource Planning

and Just In Time Systems enhance service delivery where the goods are delivered to its customers at the right time and at the right place hence increasing customer satisfaction and firm performance.

Multiple Regression Analysis

Table 3: Multiple Regression Model Summary

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.838 ^a	.702	.697	.45240	

a. Predictors: (Constant), Just in Time (JIT) System, Vendor Managed Inventory (VMI) System, Material Requirement Planning (MRP) System, Distribution Resource Planning (DRP) System
 b. Dependent Variable: Performance of manufacturing companies

The R-Squared is the proportion of variance in the dependent variable which can be explained by the independent variables. The R-squared in this research was 0.702, which shows that the independent variables [Just in Time (JIT) System, Vendor Managed Inventory (VMI) System, Distribution Resource Planning (DRP) System, and Material Requirement

Planning (MRP) System] can explain 70.2% of the change in dependent variable (Performance of manufacturing companies). This showed that the other factors not studied in this research explained 29.8% of the dependent variable (Performance of manufacturing companies).

Table 4: Multiple Regression Model Goodness of Fit

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	131.947	4	32.987	161.172	.000 ^b
	Residual	56.079	274	.205		
	Total	188.025	278			

a. Dependent Variable: Performance of manufacturing companies
 b. Predictors: (Constant), Just in Time (JIT) System, Vendor Managed Inventory (VMI) System, Material Requirement Planning (MRP) System, Distribution Resource Planning (DRP) System

The results indicated that the $p=0.000 < 0.05$ and hence the model can predict how the independent variables [Just in Time (JIT) System, Vendor Managed Inventory (VMI) System, Distribution Resource Planning (DRP) System, and Material Requirement Planning (MRP) System] affect performance of

manufacturing companies. Also the $F=161.172$ was more than the F-critical (2.46) which showed that the model was fit in showing the effect of independent variables on performance of manufacturing companies.

Table 5: Multiple Regression Coefficients

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	-.293	.184		-1.588	.113
	Material Requirement	-.079	.040	-.075	-1.983	.048

Planning (MRP) System					
Distribution Resource Planning (DRP) System	.711	.048	.649	14.812	.000
Vendor Managed Inventory (VMI) System	.318	.048	.296	6.647	.000
Just in Time (JIT) System	.143	.033	.144	4.336	.000

a. Dependent Variable: Performance of manufacturing companies

The regression equation was modeled as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$$

The regression equation computed was:

$$Y = -0.293 - 0.079 + 0.711 + 0.318 + 0.143 + 0.184$$

Y (Performance of manufacturing companies) = -0.293 – 0.079 (Material Requirement Planning (MRP) System) + 0.711 (Distribution Resource Planning (DRP) System) + 0.318 (Vendor Managed Inventory (VMI) System) + 0.143 (Just in Time (JIT) System) + 0.0.184 (Standard Error)

Table 5 indicated that holding all the other independent variables constant, a unit increase in Material Requirement Planning (MRP) System would lead to a -0.079 increase in performance of manufacturing companies. Also, holding on the other independent variables constant, a unit increase in Distribution Resource Planning (DRP) System would lead to a 0.711 increase in performance of manufacturing companies. In addition holding on the other independent variables constant, a unit increase in Vendor Managed Inventory (VMI) System would lead to a 0.318 increase in performance of manufacturing companies. Moreover holding on the other independent variables constant, a unit increase in Just in Time (JIT) System would lead to a 0.143 increase in performance of manufacturing companies.

Hypotheses Testing

H₀₁. There is no statistically significant effect of Material Requirement Planning (MRP) on performance of manufacturing companies in Eldoret Town, Kenya.

The study findings indicated there was a statistically significant effect of Material Requirement Planning (MRP) on performance of manufacturing companies in Eldoret Town, Kenya (p=0.048<0.05). The study therefore rejected the null hypothesis.

This revealed that adoption of Material Requirement Planning (MRP) in production section helps to monitor on inventory such as raw materials, working in progress, spare parts among others it helps the production to work efficiently without any hindrance.

From the findings is concurred by Roumiantseva and Netessinet (2017) who found out inventory management systems affects financial performance of textile companies especially material requirement planning system where it enhance efficiency flow of materials, increases speed of production and improves execution of information along the production process with a p>0.016.

H₀₂. There is no statistically significant effect of Distribution Resource Planning (DRP) System on performance of manufacturing companies in Eldoret Town, Kenya.

The study findings indicated there was a statistically significant effect of Distribution Resource Planning (DRP) System on performance of manufacturing companies in Eldoret Town, Kenya (p=0.000<0.05). The study therefore rejected the null hypothesis. The findings indicated that Distribution Resource Planning (DRP) System in the company helps in making sure the customer demands are made since the goods produced are enough to supply to its customers and still buffer stock is hold in the store.

The findings is concurred by Eroglu and Hofer (2016) where they found out that inventory management systems affects firm performance of coffee companies especially distribution resource planning where it enhance efficiency flow of goods to its customers and making sure the demand of its customers is meet with a $p>0.001$.

SUMMARY

The findings indicated that Material Requirement Planning (MRP) affects performance of manufacturing companies in Eldoret Town, Kenya since use of MRP systems makes sure there is enough inventory to meet production demands hence reducing interruption of production; it plays a role in holding of inventory ensures uninterrupted business operations hence increasing efficiency and effectiveness of firm operations; helps in speeding up production execution hence meeting customer demands; it enhances capability and speed to providing products that meet customers' demands hence increasing customer satisfaction; helps in managing lead time hence minimizing ordering costs hence increasing profit volume; and there is enough inventory in order to meet the production demands hence meeting customer demands and production effectiveness of the company.

From the results majority of the participants were of the opinion that effects of Distribution Resource Planning (DRP) System on performance of manufacturing companies in Eldoret Town, Kenya were it enables physical resources requirement to be planned together with production and purchasing control hence increasing production process; helps smoothing the operations of the company hence reducing lead time; helps to coordinate the flow of goods inside and outside the factory hence increasing efficiency and effectiveness of firm operations; helps in controlling under stocking and overstocking hence promoting inventory management; provides the company with high level of customer service through meeting the demands of customers; and helps in

making sure there are no excess of products produced using the bullwhip effect hence reducing overstocking and holding of stock.

CONCLUSIONS

The research revealed that Material Requirement Planning (MRP) affects performance of manufacturing companies in Eldoret Town, Kenya through Adaptive Structuration Theory (AST) where it evaluates the types of systems used in managing the inventory in the firm and the structures which govern the systems in order to perform effectively and efficiently. Therefore adoption of Material Requirement Planning (MRP) is important in production section since it helps to monitor on inventory such as raw materials, working in progress, spare parts among others it helps the production to work efficiently without any hindrance.

The study found out that Distribution Resource Planning (DRP) System affects performance of manufacturing companies in Eldoret Town, Kenya. This can be explained by theory of inventory and production where it focuses on all manufacturing operations which include: manufacturing, production, warehousing, supply chain, spare part allocation and distribution. Therefore Distribution Resource Planning (DRP) System is vital in the company since it helps in making sure the customer demands are made since the goods produced are enough to supply to its customers and still buffer stock is hold in the store.

RECOMMENDATIONS

The management of manufacturing companies needs to adopt proper inventory management systems in order to reduce operation costs such as holding costs, ordering costs among others hence increasing company performance. Also the supply chain department of company needs to make sure the inventory management systems work properly in order to improve the flow of information to other departments. In addition the management needs to emphasize on inventory management systems in all

company operations in order to increase effectiveness and efficiency of firm operations.

The management of manufacturing companies need to train the employees on how to use the inventory management systems in order for them to understand how it operations hence increasing firm performance. Also need the management needs to improve the effectiveness and efficiency of inventory management systems in order to increase firm performance and enhance competitive advantage.

The supply chain department needs to provide policies and rules to govern the inventory management systems in order to protect from the system being hacked. Also the government should collaborate with the manufacturing companies in order help them in using the inventory management systems through providing rules and policies.

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Suggestion for Further Studies

The study sought to determine how inventory management systems affect performance of manufacturing companies in Eldoret Town, Kenya. The study focused on only four inventory management systems, there is need for further research on how other inventory management systems affects performance of manufacturing companies. In conducting the study, most of the companies have not fully adopt the inventory management systems, the study recommends to assess factors affecting the adoption of inventory management systems on performance of manufacturing companies in Kenya. The research was done in manufacturing companies, there is need to replicate the study using other sectors and assess effects of inventory management systems on firm performance.

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