

## Investigating the Nexus between Inventory Management Strategies and Operating Performances of Fast Food Vendors in Akwa Ibom State, Nigeria.

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### ABSTRACT

This study examines the relationship between inventory management strategies and operating performances of fast food businesses. The motivation for this study stems from the importance of inventory to the survival of fast food businesses. The independent variables for the study are just-in-time, economic order quantity and material requirement planning while the dependent variables include quality of product, timely delivery of services and profitability. Data for the study were obtained through questionnaires administered on selected personnel of fast food vendors operating in Uyo. The panel data were analyzed using ordinary least squares regression technique. The result of the analysis indicates that the three variables are positively related to the operating performances. This implies that firms that adopt sound inventory management strategies stand the chance of improved operating performances. The study recommends amongst others the institution and implementation of sound inventory management strategies as a way of value creation.

Keywords: Just-in-time; Material Requirement Planning; Economic Order Quantity; Operating, Performances.

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### INTRODUCTION

Inventory management is critical in the survival fast food businesses. The complex nature of fast food businesses makes it imperative to employ sound inventory management approach in order to realize the organizational objectives. Basic food items used by fast food vendors are perishable and do not last long on shelf as they are subject to decay and spoilage. Thus care must be taken in order to ensure that neither excessive stock nor less than normal quantities are procured in order to maintain the equilibrium. On the other hand, due to difficulties in obtaining some of the raw materials used for production it is important for adequate planning on the acquisition and storage of the materials in order to ensure that production continues without disruption.

Since Fast food businesses depend to a large extent on raw material inventory, the importance of proper management of

their inventory cannot be overstressed. To accomplish their objective of maximizing profit necessary mechanisms should be put in place by firms to ensure that materials are not only sourced from the right place but also ensure that they are received well on time to meet the constant flow of production process. In the same vein, the process should take into consideration the minimization of all associated costs of inventory. This is mindful of the fact that when inventory is not properly planned or managed the existence of the entity could be seriously threatened. This is important if the firm must attain its organizational objectives of profit maximization.

Huge capital is usually required to acquire inventory and therefore when not properly managed, the capital may be tied down on inventory thereby depriving the organisation of channeling the capital to other productive use. Moreover, the costs

associated with improper inventory management can be very huge thereby adversely affecting the attainment of organizational objectives. Apart from inventory being the subject of pilfering and stealing by employees and even outsiders, it can be manipulated in order to be fraudulently misrepresented in the financial statements in order to deceive users of such financial statements.

Various costs associated with inventory include cost of placing order, cost of handling the inventory, stock-out cost, obsolescent cost as well as cost of theft and pilfering. Thus management would at all times strive to ensure that these costs are minimized as much as possible. To this extent, inventory managers would attempt to ensure that organisation derives maximum benefits from proper inventory management. Inventory management is the process of ensuring that inventory are obtained at the right price, the right quantity and quality; is received at the right time; it is received and properly custodied; it is made available to the users at the right time; and exposure to obsolescence, theft and pilfering reduced to the barest minimum. It can also be seen as the process of ordering, storing and using a company inventory. [1] sees inventory management as the process of planning, coordinating, controlling and organizing all inventory levels of raw materials, work-in-progress and finished goods.

Generally inventory refers to the current assets that are held for the purpose of further production; as an intermediary production (work-in-progress); for sale or resale; and for use in the day-to-day running of the organisation. According to [2] inventories are stock of raw materials, work-in-progress and finished goods held by a business organisation to facilitate operation in the process. In the same vein, [3] posits that inventories encompass goods purchased and held for resale as well as finished goods or work-in-progress being produced by the entity, materials and supplies awaiting use in the production process, and goods purchased or produced by an entity which are for distribution.

Inventory management can be seen as an arrangement whereby the required inventory of an organization are appropriately ordered, delivered and received for the purpose of meeting the production needs as and when required. It involved the timing of the receipts of the inventory order as well as the control of associated cost. [4] identifies inventory management to encompass the method adopted by firms to organize, store and replace inventory in order to keep an adequate supply of goods and at the same time minimizing cost.

The importance of proper inventory management cannot be overstated. [5] maintains that inventory management is an important organizational function which facilitates the development of policies aimed at optimal investment in inventory. In the same vein [6] states that a company should maintain adequate stock of materials for a continuous supply to the factory for an uninterrupted production.

Prior studies have focused on other sub-sectors of manufacturing firms such as textile, small and medium enterprises, while none or little have been written on a very critical sector which is the fast food companies. Fast food businesses all over Nigeria are faced with the problem of proper inventory management. Considering the nature of Fast Food business, the importance of sound inventory management cannot be overstated. This kind of business uses basic food items on a daily basis and considering the fact that foods are perishable in nature, there is need to ensure that necessary food items are obtained, stored and used in the right quantity and at the right time bearing in mind that anything contrary will spell disaster for the firm. Firms stand to lose huge sums of money through wrong decisions on inventory and this will in turn impact negatively on their profitability.

The fast food companies contribute substantially to the economic development of the country. Apart from creating employments, they also add to the gross domestic product of the

economy. Hence a study of this sector is not only important but necessary in order to emphasize its contributions to the socio-economic development of the society. Thus the outcome of this study will continue to widen the scope of study on this very important area. Its findings will add to existing literature on inventory management.

### Research Problem

Different organisations usually adopt one form of strategy or the other in the management of their inventory in order to minimize the total cost associated with inventory. This is in view of the importance of inventory to the sustenance of the organisation. Various writers have focused on minimization of carrying costs and ordering costs. However, not many studies have focused on how inventory management strategies of just-in-time, material requirement planning and economic order quantity affect the operating performance measured in terms of quality of products and effective delivery of services which is the focus of fast food businesses. This study therefore is expected to narrow the gap in this area.

### Objectives of the Study

The main objective of the study is to investigate the existence of any relationship between inventory management strategies and operating performances. The other objectives include:

- a. To investigate the relationship between just-in-time inventory management strategy and operating performances;
- b. To investigate the relationship between material requirement

### Conceptual Literature

Inventory can be described as materials that are held in store for the purpose of further production or for sale to the final consumers. The emphasis of inventory planning is to ensure that the right quantity and quality of materials are ordered and received as and when they are needed. This takes into consideration

- planning inventory strategy and operating performances; and
- c. To investigate the relationship between economic order quantity inventory management strategy and operating performances

### Research Hypotheses

Three hypotheses were developed in order to realize the objectives of the study.

Hypothesis One: The introduction of just-in-time strategy is to reduce operating cost relating to inventory and as well increase value creation of the firm. Consequently, the hypothesis relating to this is developed.

**Ho<sub>1</sub>:** There is no significant relationship between just-in-time inventory management strategy and operating performances of the firm.

Hypothesis Two: The adoption of economic order quantity strategy in inventory management is to reduce cost of inventory. This is so in view of the fact that when optimal order quantity is arrived at and used in controlling inventory it will eliminate speculative orders and thereby save cost. This will also impact positively on operating performances of the firm. Thus a second hypothesis is developed as follows:

**Ho<sub>2</sub>:** The applications of economic order quantity strategy in inventory management does not have any effect on operating performances

Hypothesis Three: The use of material requirement planning strategy is also expected to reduce inventory cost and enhance value creation. Thus a third hypothesis is formulated.

**Ho<sub>3</sub>:** The adoption of material requirement inventory planning strategy does not significantly affect operating performances of the firm.

### LITERATURE REVIEW

that any delay or interruption in the process will be disastrous to the firm. Moreover, huge capital is usually tied down in inventory. Thus there is need to adopt strategies that will not only reduce associated cost but also enhance the quality of products or effective delivery of services.

Various writers have used ordering and handling costs as proxies for inventory management and profitability as proxy for performance. However, this study adopts a different approach and uses three inventory strategies as proxies for inventory management and quality of products and effective delivery of services as proxies for firm performance. These include the just-in-time, economic order quantity as well as material requirement planning strategies. In order to enhance performance in the context of fast food supply chain, these strategies are expected to lead to reduction in the two most important costs associated with inventory management, the handling or carrying cost and ordering cost. So rather than focusing on direct reduction of the handling and ordering costs, emphasis of this work is on the adoption of strategies that will reduce the two costs and at the same time add value to the firm.

#### **Just-in-Time Strategy**

This arrangement seeks to facilitate the delivery of materials directly into the production process. The just-in-time usually results in the supplier guaranteeing the quality of materials before they are delivered into the production stream. The implication of JIT includes savings in material handling expenses. These savings come in form of elimination of cost intensive activities such as store/warehouse maintenance cost, reduction in distribution chain, handling costs as well as material investment cost. Companies that have implemented JIT purchasing techniques claims to substantially reduce their investment in raw materials, work in progress stocks [7]. Moreover, costs are saved through quantity discounts, reduction in clerical activities resulting from issuance of long term orders as well as time savings in negotiating with fewer suppliers. Another important benefit of JIT is its flexibility for the supply of small batches which enables firms to respond more quickly to market changes. In the same vein, [8] opined that JIT results in greater customer satisfaction resulting from higher quality, better deliveries and greater product delivery.

JIT is premised on the assumption that inventory does not add value and consequently holding inventory is an expense for which there is no benefit. It aims at producing the right products or service at the right time, only when they are needed and only in quantity. Thus materials are kept moving in continuous flow with no stoppages and no storage [9]. In this study, JIT is seen as a strategy to reduce or eradicate cost thereby leading to profitability. However, there must be balance between cost reduction or eradication and efficiency of delivery of service and quality of products. In this case, JIT is considered profitable when it leads to cost reduction as well as efficiency in delivery of service and enhanced quality of products.

The application of JIT is very suitable for fast food businesses. This kind of business continuously maintains one line of products. Thus, according to [10] JIT works on the assumption that the production process is repetitive and that product variation is allowable only within a fairly narrow range, narrow enough to where production process will not be adversely affected.

#### **Material Requirement Planning Strategy**

This is a planning package which emphasizes that complete evaluation of the available material on hand in order to determine the material to procure as well as the quantity of product to produce. It encompasses the determination of material required to produce a specified product. It involves the identification of inventory on hand, the additional material needed to achieve the desired quantity of product, and subsequent arrangement to procure or produce them. This arrangement enables managers to control the types and quantities of inventory which are needed to purchase strategically, as well as, the product to produce and in the required quantity. The main aim of this approach is to ensure that the firm produces enough to meet the current and future demand of customers at the minimum cost.

Material requirement planning breaks down inventory requirements into planning periods so that production can

be completed in a timely manner while inventory levels and related carrying costs are kept to a minimum. When properly implemented, MRP can help managers plan production according to needs and allocate production time.

#### **Economic Order Quantity Strategy**

This is the quantity of material to order at a time so that the associated total annual cost of the order is minimized. The two associated costs of inventory are the carrying cost and the ordering cost. Economic order quantity is the number of units that a company should add to inventory with each order to minimize the total costs of inventory such as holding and shortage costs. It is used as part of a continuous review inventory system in which the level of inventory is monitored at all levels and a fixed quantity is ordered each time the inventory level reaches a specific re-order point [11].

Accordingly, the economic order quantity is an inventory strategy designed to identify and retain the ideal balance between holding cost of stock and the ordering cost associated with inventory. Thus, the efficiency gained in inventory management from this strategy can significantly improve the company's performance [12]. The EOQ operates under some assumptions some of which include the presumption of continuous stay of the rate of demand which should allow buyers to procure materials in current amount; the ability of a supplier to ship the materials and deliver based on agreement without necessarily changing the lead time.

The importance of EOQ strategy in inventory management cannot be overemphasized. According [13], it

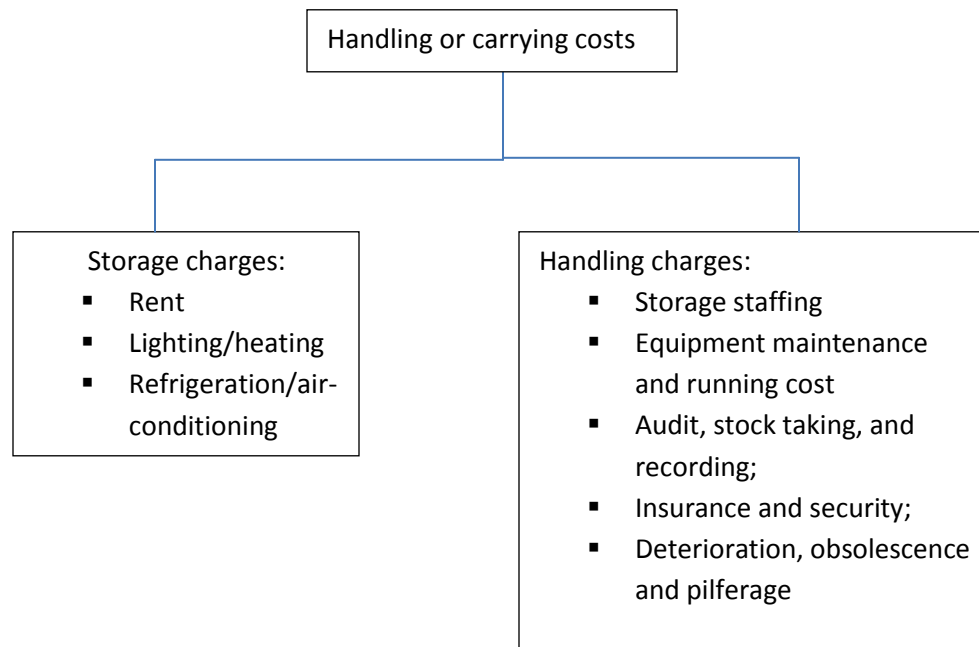
recognizes the smallest possible point in ordering expenses which are related to inventory and also it aims at guaranteeing that the order of clients are delivered promptly. [14] documents that the use of EOQ system will reduce the effect associated with incorrect forecast of demand and consequently improve set-up time, endure better planning production, reduce administrative costs of customers, increase service level and decrease risk of stock out.

#### **Handling Costs**

Handling cost can be seen as the costs that are associated with the reception and custody of inventory (materials of finished products) until when they are issued to production or sold [15]. Generally, handling or carrying costs are unavoidable in the production chain. However, they could be minimized through the implementation of the effective strategy that could enhance optimal activity level. The effective strategy is that one which ensures that associated costs in the receipts and custody of inventories are reduced to the barest minimum. The implication is that reduction in those costs will ultimately lead to enhanced performance.

Caution must be exercised in order to be sure that reduction in the handling cost would not compromise the quality of product and efficiency of service delivery. Thus a balance must be arrived at between cost reduction and quality or product or service delivery.

The handling or carrying costs can be categorized into two: those that are associated with storage of the inventory and those that are associated with handling of the inventory.



**Ordering Costs**

Material inventory can be procured from outside or produced internally. The procurement process entails series of administrative documentations. Each of these processes involves cost. Thus, ordering costs represent those cost which are associated with placing and receiving order for materials. These costs must be operated at a minimum in order for the organisation to realize its organisational objectives. Generally, these costs become imperative for the survival of the firm. This is in view of the fact that materials must constantly be ordered as and when needed to meet the production flow without interruption.

Consequently, there must be a balance between reduction in ordering costs and quality of products/service. Ordering cost is also categorized into two: administrative and reception costs. The administrative cost includes salaries of clerical staff and ordering documentations. On the other hand, reception cost include transportation, freight, insurance, loading and off-loading costs.

**Empirical Literature**

Inventory management has generated a reasonable research interest among

scholars over time. This is due to the importance attached to inventory management. The outcomes have been in varied forms. Most studies have focused on areas such as manufacturing and agriculture. For instance, [15] studied the impact of inventory management on performances of selected manufacturing firms in Ghana using cross sectional secondary data over a ten-year period. The proxies for performances were profitability and cash flows. The study which used regression analysis found that firms' performance is negatively insignificant to inventory but that efficient management leads to profitability.

[16] conducted a study on the effects of inventory management on organizational performances among textile manufacturing firms in Kenya. Using primary data obtained from questionnaires and interviews and using multiple regression and correlation to test the relationship, the findings show that inventory management have positive impact on performances. [17] studied the impact of inventory management practice on firm's competitiveness and organizational performances with empirical evidence from micro and small

enterprises in Kenya. Using data collected through questionnaires from small and medium enterprises operators in Kenya and analyzing through STATA version 13, the findings reveal the presence of intermediate measure of competitive advantage between inventory management practices and organizational performances.

[18] conducted a study to ascertain the extent to which inventory control affect productivity as well as the extent of demand management and customer satisfaction in selected manufacturing firms. Using survey instrument descriptive statistics, they found that inventory control significantly affect productivity and concluded that inventory management is essential in the operations of any business.

This study uses data obtained from primary sources. Questionnaires were developed and administered on selected operators and workers of selected fast food businesses in Uyo, Akwa Ibom State. The questions were organized in order to enable appropriate responses which will cover areas of interest. Purposive and stratified sampling techniques were used to isolate the sample for the study. This was in view of the fact that it was difficult to access the respondents and moreover this method was found relevant as the researcher was already familiar with the stratification of respondents.

The test re-test method was adopted to test the validity of the instruments. The result shows 0.6 which was considered consistent and shows that the instrument was reliable and would enable appropriate data to be elicited. The questions used simple response of 'yes' or 'no'. The yes response was to indicate concurrence or acceptability of the availability of the required variable. The no indicated otherwise. The questionnaires were administered on seventy (72) respondents

[19] studied the effects of inventory management practices on operational performances of selected flour milling companies. Using structured survey instrument and descriptive statistics, they found a significant difference between effective management of inventory and operational performance.

[12] studied the relationship between inventory control and organizational performance. The data for the study were obtained through primary sources and one-sample t-test was used to analyze the data. The result indicates that inventory control has significant positive impact on performance organisations. The study recommends the institution of robust strategies and policy framework for effective inventory control.

#### METHODOLOGY

of which sixty (60) representing about eighty two percent (83%) were returned. The proxies for inventory management strategies were classified into three: just-in-time strategy (JITS) which was used to measures the effect of adoption of just-in-time on cost reduction and value enhancement; Economic Order Quantity strategy (EOQS) which was also included in order to measure the effect of cost reduction associated with EOQ and; material requirements planning strategy (MRPS) which was included to measure the effect of material requirement planning of holding and ordering cost. The dependent variable was measured by customer satisfaction (CS) and timely delivery of services (TMS). These proxies were chosen in view of the fact that performances of fast food businesses are usually adjudged from these perspectives. However, a third measure of performance is the profitability (PROF) which was added as justification for quality of services. Consequent upon the above, the followings models are developed:

$$PERF = f\{JITS, EOQS \text{ and } MPRS\} \dots (i).$$

$$PERF = f\{CS, TMS \text{ and } PROF\} \dots (ii).$$

Thus,

$$PERF = f\{\beta_0 + \beta_1 JITS + \beta_2 EOQS + \beta_3 MRPS + \mu \dots (iii).$$

Where:

PERF = Firms' performance.  
JITS = Just-in-time Strategy.  
EOQS = Economic Order Quantity Strategy.  
MRPS = Material Requirement Planning Strategy.

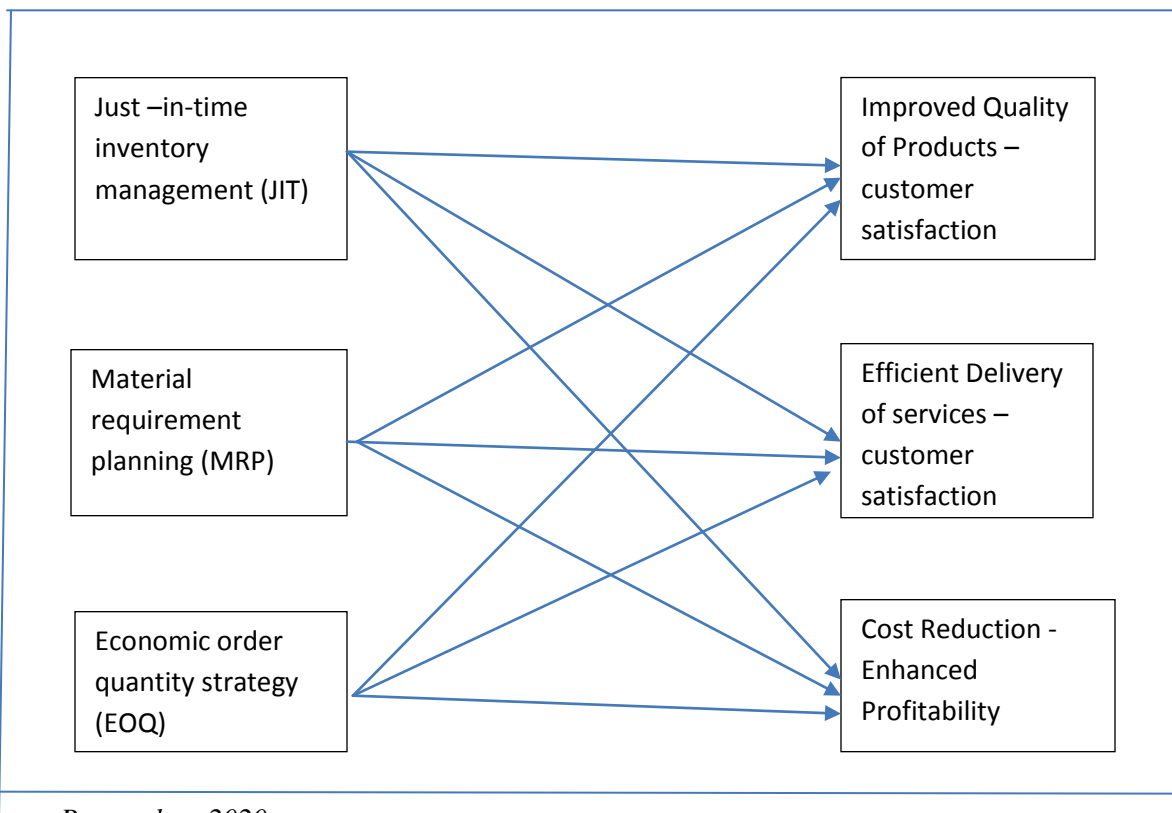
$\beta_0, \beta_1, \beta_2, \beta_3$  are unknown parameters which are to be determined while  $\mu$  is included to measure the effect of other factors on performance which are not captured in the model.

The interpretation of the model is that increase in the adoption of just-in-time, economic order quantity and material requirement planning will lead to increase in the operating performance of the firms.

**Interactions of Variables**

The application of the various inventory management strategies is expected to result in enhanced quality of products, efficient delivery of services and reduction in inventory cost thereby leading to increased profitability. Thus when just-in-time, material requirement planning and economic order quantity strategies are stringently applied this will lead to improvement in overall operating performances.

*Interaction of variables*



Source: Researcher, 2020

**DATA PRESENTATION**

The responses from the questionnaires administered on selected respondents are presented in the tables below.



**Table 1: Responses with regard to operating performances**

S/No	Dependent Variables	No of Responses			Percentage of Responses	
		Total	Yes	No	Yes	No
1.	The firm usually attain the standard Quality of products	60	42	18	70	30
2.	The firm usually renders services on time without delay.	60	36	24	60	40
3.	The firm usually realizes its target profit.	60	46	14	77	23

Source: Researcher, 2020.

The table 4.1 above indicates the responses regarding the operating performances of the selected firms. The three measures of operating performances were in focus. From the responses 70% are in agreement that the firm still produces high standard of products, 60% agree that the firms

renders services without undue delay arising from inventory mismanagement while 77% agree that the firm still realizes its target profit without any disruption occasioned by poor inventory management. The implications of the above is that the performance indicators of the selected are in the positives.

**Table 2: Responses with regard to implementation of inventory management strategies**

S/No	Independent Variables	No of Responses			Percentage of Responses	
		Total	Yes	No	Yes	No
1.	The firms usually adopt just-in-time policy in material procurement	60	50	10	83	17
2.	The firm usually adopts material requirement planning in material purchases.	60	34	26	57	43
3.	The firm adopts economic order quantity model in material purchase	60	42	18	70	30

Source: Researcher, 2020.

The responses here were used to show the responses of personnel involved in the procurement of materials in the selected firms. The responses show that 83% of respondents admit that the firms use just-in-time inventory strategy in the procurement of materials, 56% are in agreement that the firm uses material requirement planning strategy in their inventory management while 68% are in agreement that the firms use economic order quantity strategy in determining the quantity of materials to order at a time.

**Data Analysis**

The various data obtained through questionnaires above were analyzed through e-view statistical packages. The results are presented as below.

**Table 3: Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.982 <sup>a</sup>	.963	.961	.25000	.964

a. Predictors: (Constant), Material Requirement Planning Strategy, Just in Time Strategy, Economic Order Quantity Strategy

b. Dependent Variable: PERFORMANCE

**Table 4: ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	92.233	3	30.744	491.911	.000 <sup>b</sup>
	Residual	3.500	56	.063		
	Total	95.733	59			

a. Dependent Variable: PERFORMANCE

b. Predictors: (Constant), Material Requirement Planning Strategy, Just in Time Strategy, Economic Order Quantity Strategy

**Table 5: Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients Beta	T	Sig.	Collinearity Statistics	
		B	Std. Error				Tolerance	VIF
1	(Constant)	.000	.164		.000	1.000		
	Just in Time Strategy	.500	.119	.148	4.216	.000	.533	1.875
	Economic Order Quantity Strategy	1.750	.125	.635	14.000	.000	.317	3.150
	Material Requirement Planning Strategy	.750	.098	.294	7.635	.000	.440	2.275

a. Dependent Variable: PERFORMANCE

**Test of Hypothesis One**

*Ho<sub>1</sub>: Just in time strategy has no significant effect on operating performance*

The result of the analysis shown Table 4.3 indicates that the beta value of 0.148 was obtained for Just-in-time strategy while the p-value stood at 0.000. The t-cal was

4.216 while the t-tab was -1.67109. In line with the decision rule of the study, the research hypothesis one was rejected and the alternate accepted because t-cal > t-tab and p-value < 0.05. This implies that just-in-time strategy has significant effect on performance.

### Test of Hypothesis Two

*Ho<sub>2</sub>: Economic order quantity strategy has no significant effect on operating performance*

The result of the analysis shown Table 4.3 indicates that the beta value of 0.635 was obtained for economic order quantity strategy while the p-value stood at 0.000. The t-cal was 14.000 while the t-tab was -1.67109. In line with the decision rule of the study, the research hypothesis two was rejected and the alternate accepted because t-cal > t-tab and p-value < 0.05. This implies that economic order quantity strategy has significant effect on performance.

### Test of Hypothesis Three

*Ho<sub>3</sub>: Material Requirement Planning Strategy has no significant effect on performance*

The result indicates that just-in-time strategy has significant effect on operating performance. This is indicated by the result of the analysis where the beta coefficient was 0.148 or 14.8%. This means that 14.8% variation in performance is accounted for by just-in-time strategy. In the same vein, the result also indicates that economic order quantity strategy has significant effect on operating performance. This is indicated by the result of the analysis where the beta coefficient was 0.635 or 63.5%. This means that 63.5% variation in performance is accounted for by economic order quantity strategy.

### CONCLUSION AND RECOMMENDATIONS

The study has revealed the yearning need for sound inventory management strategy to be applied in the day to day inventory control. The findings of the study revealed that applications of the three inventory management strategies have positive impact on performances of the firm. The impact is noticed majorly in cost reduction and value creation which ultimately lead to enhanced profitability. The use of just-in-time as a strategy of inventory management which was most applicable in the perishable goods did not only lead to elimination of cost consuming activities but also led to improved value in areas of quality of

The result of the analysis shown Table 4.3 indicates that the beta value of 0.294 was obtained for material requirement planning strategy while the p-value stood at 0.000. The t-cal was 7.635 while the t-tab was -1.67109. In line with the decision rule of the study, the research hypothesis three was rejected and the alternate accepted because t-cal > t-tab and p-value < 0.05. This implies that Material Requirement Planning Strategy has significant effect on performance.

### Model Estimate

The model estimate of the study is presented as follows:

$$PERF = \beta_0 + \beta_1 JITS + \beta_2 EOQS + \beta_3 MPRS + e$$

Inserting the results into the model we have:

$$PERF = 0.000 + 0.148JITS + 0.635EOQS + 0.294MPRS + 0.164$$

### DISCUSSION OF FINDINGS

Moreover the result indicates that material requirement planning strategy also has significant effect on operating performance. This was indicated that by the result of the analysis where the beta coefficient was 0.294 or 29.4%. This means that 29.4% variation in operating performances is accounted for by material requirement planning strategy.

The findings of the study are consistent with the findings of other authors [3]; [4], [5] who found that inventory management have significant positive relationship with performances of organisations.

products as well as improved timely delivery of service. The results of the analysis also shows a positive relationship between the applications of material requirement planning and economic order quantity strategies in material inventory management. The implication of the results is that the use of the two models in management of inventory will lead to improved performances.

Consequently, this study recommends that firms that strive to maximize their objectives should not only install sound inventory management strategy but should continuously employ them in their

operations. It is also recommended that firms should create monitoring implementation unit as part of internal control function to constantly evaluate

the application of these strategies particularly among fast food vendors as there is always the temptation of abandoning the models midway.

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APPENDIX

**The firm usually attain the standard Quality of products**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO	18	30.0	30.0	30.0
	YES	42	70.0	70.0	100.0
	Total	60	100.0	100.0	

**The firm usually renders services on time without delay.**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO	24	40.0	40.0	40.0
	YES	36	60.0	60.0	100.0
	Total	60	100.0	100.0	

**The firm usually realizes its target profit.**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO	14	23.3	23.3	23.3
	YES	46	76.7	76.7	100.0
	Total	60	100.0	100.0	

**The firms usually adopt just-in-time policy in material procurement**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO	10	16.7	16.7	16.7
	YES	50	83.3	83.3	100.0
	Total	60	100.0	100.0	

**The firm usually adopts material requirement planning in procurement**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO	18	30.0	30.0	30.0
	YES	42	70.0	70.0	100.0
	Total	60	100.0	100.0	

**The firm adopts economic order quantity model in material purchase**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO	26	43.3	43.3	43.3
	YES	34	56.7	56.7	100.0
	Total	60	100.0	100.0	

E-VIEW RESULTS

Dependent Variable: PERF  
Method: Least Squares

Sample: 1 60  
Included observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EOQS	1.750000	0.123899	14.12445	0.0000
JITS	0.500000	0.089978	5.556924	0.0000
MRPS	0.750000	0.096735	7.753113	0.0000
R-squared	0.963440	Mean dependent var		5.066667
Adjusted R-squared	0.962157	S.D. dependent var		1.273813
S.E. of regression	0.247797	Akaike info criterion		0.096295
Sum squared resid	3.500000	Schwarz criterion		0.201013
Log likelihood	0.111136	Hannan-Quinn criter.		0.137256
Durbin-Watson stat	0.964286			

Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.982 <sup>a</sup>	.963	.961	.25000	.964

a. Predictors: (Constant), Material Requirement Planning Strategy, Just in Time Strategy, Economic Order Quantity Strategy

b. Dependent Variable: PERFORMANCE

ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	92.233	3	30.744	491.911	.000 <sup>b</sup>
	Residual	3.500	56	.063		
	Total	95.733	59			

a. Dependent Variable: PERFORMANCE

b. Predictors: (Constant), Material Requirement Planning Strategy, Just in Time Strategy, Economic Order Quantity Strategy

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.000	.164		.000	1.000	
	Just-in-Time Strategy	.500	.119	.148	4.216	.000	.533
	Economic Order Quantity Strategy	1.750	.125	.635	14.000	.000	.317
	Material Requirement Planning Strategy	.750	.098	.294	7.635	.000	.440

a. Dependent Variable: PERFORMANCE

**Collinearity Diagnostics<sup>a</sup>**

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Just in Time Strategy	Economic Order Quantity Strategy	Material Requirement Planning Strategy
1	1	3.913	1.000	.00	.00	.00	.00
	2	.053	8.626	.31	.03	.03	.33
	3	.023	13.179	.44	.22	.25	.44
	4	.012	17.787	.25	.75	.72	.23

a. Dependent Variable: PERFORMANCE

**Residuals Statistics<sup>a</sup>**

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.0000	6.0000	5.0667	1.25031	60
Residual	-.50000	.75000	.00000	.24356	60
Std. Predicted Value	-1.653	.746	.000	1.000	60
Std. Residual	-2.000	3.000	.000	.974	60

a. Dependent Variable: PERFORMANCE