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Factors That Affect the Effectiveness of Inventory Management of Ethio Telecom

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Abstract
The aim of this study is to provide empirical indications for the factors that affect the effectiveness of inventory management of ethio telecom at the corporate level and recommend ways on the observed problems, and gaps. Information Technology, Procurement Procedures, Internal control over inventory and Inventory Carrying Costs has been taken as a major parameter for the comparison. To meet the Objectives, the researchers used a quantitative approach with explanatory research design. The primary data were collected through questionnaires. A sample of 94 respondents was taken using a stratified sampling technique and then after simple random and purposive methods for sampling were used to select a sample from those strata. The study has employed statistical techniques such as correlation and regression analysis and test of assumptions to analyze the data from the survey using SPSS 20 software. The result of study showed that information technology and internal control over inventory has a significant positive relation with the effectiveness of Inventory management whereas procurement procedure and inventory carrying costs have significant negative relation. The researcher recommended that the organization should exhaustively integrate ERP Supply chain and financial modules. Item standardization should be implemented throughout the company to minimize obsolescence and over stocking of items. Modernizing the procurement process, to realize real time procurement thus increasing transparency in procuring goods. Inventory carrying costs should be kept at a minimum possible level since the goal of every business is to hold as little inventory as possible and keep their business running. In such a way, the concerned authority should work properly in keeping the entire flow of resource of the organization and keep them in a safe, protected, and proper place.

1. INTRODUCTION
Inventory management is defined as a scientific art of guaranteeing enough inventory stock which is held by an organization to meet its demand (Coleman, 2000). It is a set of policies that controls and monitors inventory levels and determine what level should be preserved, how large orders should be made and when stock should be replenished to support the operation of the business (Miller,2010).

Coyle et al (2003), stated that, inventory is the existence of any stock or resources at right quantity and quality used in an organization. Coyle defines inventory as raw materials, work-in-progress, finished goods and supplies required for creation of a company's goods and services. It is also the number of units and/or value of the stock of goods a company holds. The basic reason why stock is held is to avoid stock out and its resulting problems.

According to Gudum (2002), the uncertainty and variability of the timing and content of information flow and goods flow leads to insecure planning, increased costs, stock outs and delays. Therefore, there is the need to take measures especially on inventory to deal with uncertainty and dynamism on the operational level of business.

Investment on inventory holds a big amount of the total budget, but inventory management is one of the most neglected areas in most organizations. Many companies hold excess amount of inventory due to improper inventory management practices. As per Gudum (2002), keeping inventory amount at the lowest possible level leads to economizing use of working capital and to minimize the cost of storage. Therefore, frequently there is a challenge of managing inventory to balance supply with demand to satisfy the need of consumers.

1.1. Statement of the problem
The well-organized operation of any organization requires a significant strategic flow of materials to deliver its services competently. This could be effective when the organization keeps stock of materials for current and future uses. To achieve the objectives of the organization, one may think of how to control inventory in the organization to ensure availability of supplies at the right time and at their right quantity. If resources are not provided at the right time and right quantity, it hampers the day to day operation of the company and have negative impact on it. In other words, materials will also be obsolete, will cause the capital tied up, increase purchasing and inventory holding cost which result in delay on operational activities and ongoing projects beyond the planned schedule. (Gudum ,2002).

The company is a monopoly service rendering institution in the country and the one that holds huge number and variety of inventories to smooth up its operations. Maximum quantities of stock are purchased from foreign countries with very coasty price and foreign currency. However, by keeping huge amount of inventory the company comprises high inventory holding costs which result with capital tied up and obsolescence of materials. (Co. Finance Division Annual Report, 2018).

In addition, there is a frequent internet interruption throughout the country and most of ethio telecom projects are delayed exceeding the estimated completion date of the project due to unavailability of spare parts and telecom materials. These problems mainly affect the appropriate service of the ethio telecom itself, banking industry, Ethiopian Electric Utilities, Customs, and operations of other public & private organizations.

Currently, company has a large amount of loan for capital investment. Materials for these investments are purchased and shipped to warehouse. To have high-level of return on investment the delivered items should be handled properly. Even though the company has large amount of loan there are items that are not transacted for more than three years. In addition, numerous obsolete items are found in the warehouse that affects the return on investment (ROI) of the company.

Since the problem is quite serious and affects the organizational objectives, the study assessed the factors that affect the effectiveness of inventory management in case of ethio telecom having the following research questions.

1.2. Hypothesis

Hypothesis are used to state the relationship between dependent and independent variables. Thus, the study was based on the following hypothesis:

I. H0: There is no significant relationship between Information technology and Effectiveness of inventory management.
    HA: There is a significant relationship between Information technology and Effectiveness of inventory management.

II. H0: There is no significant relationship between Procurement procedure and Effectiveness of inventory management.
     HA: There is a significant relationship between Procurement procedure and Effectiveness of inventory management.

III. H0: There is no significant relationship between Internal control and Effectiveness of inventory management.
      HA: There is a significant relationship between Internal control and Effectiveness of inventory management.

IV. H0: There is no significant relationship between Inventory cost and Effectiveness of inventory management.
     HA: There is a significant relationship between Inventory cost and Effectiveness of inventory management.

2. LITERATURE REVIEW

Inventory is one of the main parts of the major business's assets that is ready to use or will be ready for sale. It can be the raw materials, work in progress, and finished goods. Inventory turnover represents one of the primary sources that enable businesses to produce revenue and continuous earnings to the company's stakeholders. (Ackah & Ghansah, 2016).

Stock and Lambert (2001), summarized that an organization hold inventory for the following reasons: to enable the firm to achieve economies of scale, to balances supply and demand, to enable specialization in manufacturing ,to provide protection from uncertainties in demand and order cycle and to act as a buffer between a critical look at interfaces within the supply chain.

Inventory management system is the set of policies that controls and monitors inventory level and determine what level should be maintained, how large orders should be made and when stock ought to be restocked to sustain the function of a business. (Miller, 2010). According to Reid & Saunders (2007), Inventory management is used to raise an order at the right time from the right source with the right quantity and quality.

According to Simchi (2004), IT application is extremely broad and deep in supply chain management(SCM) through various approaches, for instance, in-house information systems and their integration, inter-organizational information transmission and sharing (in real-time or not), collaborative inter-organizational information systems, tracking technologies in which barcode, RFID and GPS are paradigms, internet, intranet, extranet. All in all, IT can be found everywhere when there is a need or a possibility.

According to Susan & Michael (2000), the primary objectives of purchasing are to buy materials at the lowest responsive and responsible cost and to ensure faithfulness to purchasing terms and conditions. Maintaining stability of supply and uniformity of quality are also important objectives that go hand in hand with searching for new products and vendors and developing alternative supply sources.

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Inventory control is a very important activities of inventory management and it plays an essential role for managing economic operation. To achieve higher operational efficiency and profitability of an organization, it is very vital to reduce the amount of capital locked up in inventories. this will not only help in achieving return on investment by minimizing tied-up working capital but will also improve the liquidity position of the concern. Inventory management is ready when required and utilize available storage space and the items are in balance (Sharma,2009).

Stock and Lambert (2001), described inventory carrying costs as follows:
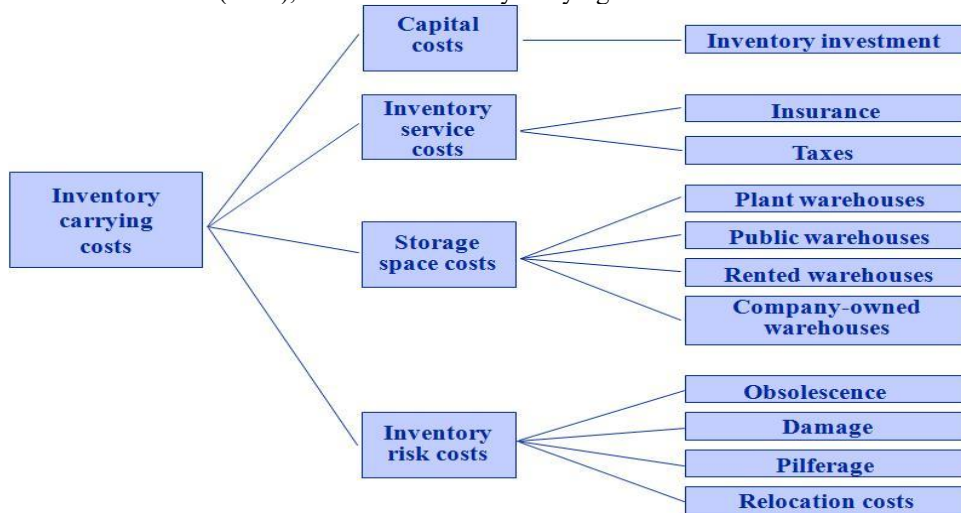
Source: Goldsby (2005)

Figure 1: Inventory Carrying Costs

Effectiveness of Inventory Management can be influenced by Information Technology, Procurement Procedure, Inventory Carrying Costs, and Internal control over Inventory. This research examined the factors affecting inventory management's effectiveness.
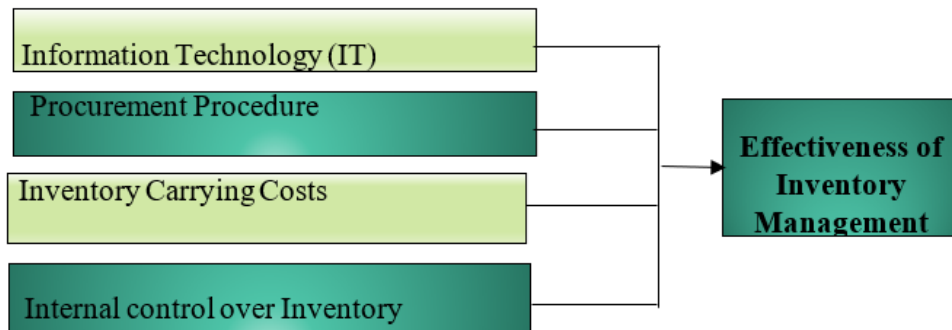
Source: Otchero (2016)
Figure 2: Conceptual Framework

3. RESEARCH DESIGN AND METHODOLOGY

The study adopts a quantitative approach to evaluate factor that affect inventory management of the company. Thus, attempt was made to evaluate the relationship between inventory management effectiveness (dependent variable) and Information technology, Procurement procedure, Inventory carrying costs and Internal control over inventory (Independent variables).To undertake this study, primary data have been collected from employees and managements through distributing questionnaires to the respondents.

The total population or universe of the study was all ethio telecom employees, corporate, zonal, and regional offices. The target population for this study was ethio-telecom's employees and management groups of the selected departments of the Supply Chain Division and from one section of the Finance Division.
In this research sample size was determined using sample size calculation formula from Solvin.

Solvin Sample Size Calculation Formula

$$n = \frac{N}{1+Ne^2}$$

Source, **Zigju. S ,(2016)**

Where: n = sample size
     N = the size of the population =124
     e = the margin of error

The sample size of the study was 94 employees who have been selected to fill questionnaires.
    n = 124/1+[124(0.05²)]
    n=124/1.31
- = 93.75 (final answer)≈94

To collect data a 1 to 5-point Likert Scale from strongly disagree to strongly agree and from very low to very high to get perception of the respondents. Questionnaire for the study covers closed ended questions. The questionnaires used for this study are taken from Daniel (2015), and Godana (2014).

3.1 Method of Data Analysis and Interpretation

According to Mosby (2009), data analysis is the process of coding, classifying and tabulating information required to perform quantitative analysis according to the research design and appropriate to the data. Data collected was analyzed by using Statistical Package for Social Sciences (SPSS) software 20. After the quantitative data is collected, edited, and came into SPSS software, a test for reliability has been made.

An appropriate test to analyze the data like Multicollinearity, Autocorrelation, Normality and Heteroscedasticity tests were made before starting the multiple regression analysis. In addition, test of Pearson's correlation coefficient, Regression coefficients and ANOVA tests were made.

3.2 Model Specifications and Data Analysis

The equation of multiple linear regressions is built to show the relationship between a response(dependent) variable and a factor (independent variable) to predict the behavior of the response variable. (Rudolf J., William. and Ping 2006). The basic objective of using multiple linear regression equation on this study was to make the researcher more effective at describing, understanding, predicting, and controlling the stated variables.

According to Godana, B. E. & Ngugi, K. (2014), a multiple linear regression model is used to link the independent variables to the dependent variable as follows.

$Yi = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$

An interval scale quantitative data was collected for using five scale structured questionnaire ranges from 1-5 strongly disagree to strongly agree and from very low to very high and coded accordingly. There is a partially agree and moderate response in the middle of the response. The responses of each respondents were scored and the scores of each item were aggregated to form an overall score. Finally, the coded data was analyzed for descriptive and inferential statistics by using Statistical Package for Social Sciences (SPSS) version 20.As a result, significance level was measured at 95% confidence level with significance differences (Sg) recorded at p-value less than 0.05.

3.3 Data Quality Assurance (Reliability and Variability)

Table 1: Case Processing Summary

Case Processing Summary		N	%
Cases	Valid	90	100.0
	Excluded[a]	0	0.0
	Total	90	100.0

a. Listwise deletion based on all variables in the procedure.

(Source: Own Survey results from SPSS Output, 2019)

Table 2: Over all Reliability Statistics

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.786	.782	41

Table 3:Reliability Statistics for each variable

Item Name	Cronbach's Alpha	No of Items
Information Technology	0.811	7
Procurement Procedure	0.766	7
Internal Control	0.859	7
Inventory Cost	0.868	7
Exiting Challenges	0.855	8
Effectiveness of Inventory Management	0.778	5
Total No of Questionnaire		41

(Source: Own Survey results from SPSS Output, 2019)

4. RESULTS, DISCUSSION OF KEY FINDINGS

4.1 Response Rate

Mitchell, (2009), argues that, the survey response rate should be calculated as the number of returned questionnaires divided by the total sample which were sent for the survey. Out of 94 questionnaires distributed for data collection, 90 of them were returned and used for data analysis. Therefore, the response rate for this study was 90/94*100= 95.7% and the remaining 4.3% (N=4) was non respondents. The 90 % is considered adequate response rate (Mugenda & Mugenda 2010). Thus, the study returned a very good response rate at 95.7% and was considered adequate for analysis and reporting.

4,2 Assessment of Multicollinearity

Multicollinearity is a statistical problem which occurs when the explanatory variables (independent variables) are much correlated with each other (Hair, et al., 1998). It means when the strong correlation among predicators exist when tolerance value below 0.10, and Variance Inflation Factor (VIF) greater than 10 in the correlation matrix. Tolerance in this case defined as a statistical tool which used to indicate the variability of the specified independent variables from other independent variables in the model. Based on Table 10 above, the tolerance levels for all variables were greater than 0.10 and the Variance Inflation Factor (VIF) value for all variables were less than 10. Therefore, it was concluded that no multicollinearity exists between the explanatory/independent variables.

Table 4: Collinearity Statistics

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.217	.493		6.527	.000		
	Information Technology (IT)	.201	.095	.185	2.117	.037	**.884**	**1.132**
	Procurement Procedure	-.278	.092	-.254	-3.018	.003	**.952**	**1.050**
	Internal Control Over Inventory	.265	.079	.298	3.368	.001	**.864**	**1.158**
	Inventory Carrying cost	-.425	.083	-.426	-5.146	.000	**.984**	**1.016**

a. Dependent Variable: Overall Effectiveness of Inventory Management
(Source: Own Survey results from SPSS Output, 2019)

4.3 Assessment of Auto Correlation

If there are patterns in the residuals from a model, then they can be considered as auto correlated The Durbin-Watson (DW) is a test for first order auto correlation (Brooks, 2008). The Durbin-Watson statistic ranges in value from 0 to 4. A value close to 2 indicates non-autocorrelation; a value toward 0 indicates positive autocorrelation; a value toward 4 indicates negative autocorrelation. Based on Table 11 below, the Durbin-Watson (DW) statistics value of this study is near 2 that is 1.404. Therefore, there was no evidence of autocorrelation among error terms in this study.

Table 5: Durbin Watson Test Model Summary b

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.652[a]	.426	.399	.515	.426	15.747	4	85	.000	1.404

a. Predictors: (Constant), Inventory Carrying cost, Internal Control Over Inventory, Procurement Procedure, Information Technology (IT)
b. Dependent Variable: Overall Effectiveness of Inventory Management
(Source: Own Survey results from SPSS Output, 2019)

4.4 Pearson's Correlation Coefficient

Pearson's correlation coefficient is useful to determine the strength of the linear relationships between dependent variable with a set of Independent variables and shows the direction of relation. Theoretically there could be a perfect positive correlation between two variables which is by 1.0 or a perfect negative correlation between two variables which is represented by -1.0 (Rudolf J., William J., and Ping 2006). Pearson's correlation analysis is

performed to determine the relationship between the independent variables with the dependent variable. Table 12 above show that, there was a positive and significant correlation between effectiveness of inventory management (DV) with information technology and internal control over inventory (IV) with the value of 0.314 and 0.331. This implies that, when IT and internal control are going well, inventory management becomes more effective. There was a negative and significant correlation between effectiveness of inventory management (DV) with bureaucratic procurement procedure and inventory carrying costs (IV) with the value of -0.265 and -0.472. This implies that, when there is an increase in bureaucratic procurement procedure and inventory carrying costs, inventory management becomes ineffective. Therefore, these four variables can predict the effectiveness of inventory management of the company.

Table 6: Pearson Correlation Matrix

Correlations

		Overall Effectiveness of Inventory Management	Information Technology (IT)	Procurement Procedure	Internal Control Over Inventory	Inventory Carrying cost
Overall Effectiveness of Inventory Management	Pearson Correlation	**1**				
	Sig. (2-tailed)					
	N	90				
Information Technology (IT)	Pearson Correlation	.314**	1			
	Sig. (2-tailed)	.003				
	N	90	90			
Procurement Procedure	Pearson Correlation	-.265*	-.049	1		
	Sig. (2-tailed)	.011	.647			
	N	90	90	90		
Internal Control Over Inventory	Pearson Correlation	.331**	.325**	.155	1	
	Sig. (2-tailed)	.001	.002	.146		
	N	90	90	90	90	
Inventory Carrying cost	Pearson Correlation	-.472**	-.045	.113	-.030	1
	Sig. (2-tailed)	.000	.670	.289	.782	
	N	90	90	90	90	90

**. Correlation is significant at the 0.01 level (2-tailed).
 *. Correlation is significant at the 0.05 level (2-tailed).
(Source: Own Survey results from SPSS Output, 2019)

Table 7: Summary of Hypothesis and Related Objectives Test results

Objective	Hypothesis	Results	Remark on Hypothesis
To find the effect of Information technology (IT) on the effectiveness of inventory Management.	There is no significant relationship between Information technology and Effectiveness of inventory management.	P = 0.003 This is less than the significance level of 0.05.	Rejected
To evaluate the effect of procurement procedure to the effectiveness of inventory management.	There is no significant relationship between Procurement procedure and Effectiveness of inventory management	P = 0.011 This is less than the significance level of 0.05.	Rejected
To appraise the effect of internal control to the effectiveness of inventory control.	There is no significant relationship between Internal control and Effectiveness of inventory management.	P = 0.001 This is less than the significance level of 0.05.	Rejected
To assess the effect of inventory cost to the effectiveness of inventory Management.	There is no significant relationship between Inventory cost and Effectiveness of inventory management	P = 0.000 This is less than the significance level of 0.05.	Rejected

(Source: Own Survey results from SPSS Output, 2019)

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4.5 Model Summary (Coefficient of Determination (R Square))
Table 8: Coefficient of Determination-Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.652[a]	.426	.399	.515	.426	15.747	4	85	.000

a. Predictors: (Constant), Inventory Carrying cost, Internal Control Over Inventory, Procurement Procedure, Information Technology (IT)

b. Dependent Variable: Overall Effectiveness of Inventory Management

(Source: Own Survey results from SPSS Output, 2019)

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (Mugenda & Mugenda ,2003).

Table 14 above displays the value of R= 0,652 and the coefficient of determination (R square) of 42.6%. The model is very reliable since the Sig.value of F-Change is 0.000 as shown in the table 14 above. Here all the explanatory variables are significant predictor of the model at 95% level of significance. This suggests that Effectiveness of Inventory Management (Y) is influenced by 42.6% by Information Technology (X_1), Procurement procedure(X_2), Internal control over inventory (X_3) and Inventory carrying costs (X_4).

4.6 Analysis of Variance ANOVA
According to Mugenda & Mugenda (2003), ANOVA is a data analysis process used to determine if there is a significant difference between two or more samples on a selected probability level. In other terms, if P is ≤ 0.05 the multiple regression model can be used to predict the performance of Y. Table 14 show that, the probability (0.000) is much smaller than p-value 0.05, then the multiple regression model can be used to predict the effectiveness of inventory management. Or in other words Information Technology (X_1), procurement procedure (X_2), Internal control over inventory (X_3) and inventory carrying costs (X_4) have simultaneous significant effect on the effectiveness of inventory management (Y).

Table 9: Analysis of Variance (ANOVA)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.728	4	4.182	15.747	.000[b]
	Residual	22.573	85	.266		
	Total	39.302	89			

a. Dependent Variable: Overall Effectiveness of Inventory Management

b. Predictors: (Constant), Inventory Carrying cost, Internal Control, Procurement, Information Technology (IT)

(Source: Own Survey results from SPSS Output, 2019)

4.7 Test of Individual Regression Coefficients
The independent variable with the level of significance (sig.) value less than 5% can make a significant contribution to the predicted value of the dependent variable. Whereas, a variable beyond this level of significance (sig.) cannot make a significant contribution to the predicted value of the dependent variable (Brooks, 2008; Hair, et al., 1998). As can be seen from table above, the statistical significance of the independent variable over the dependent variable at 5% level of significance having a P-value less than 5%. This implies that all independent variables significantly affect the effectiveness of inventory management at 95% level of significance.

Table 10: Test of Individual Regression Coefficients

Independent Variable	Result (P Value)	H0: $\beta = 0$	HA: $\beta \neq 0$
Information Technology	0.037	Rejected	Accepted
Procurement Procedure	0.003	Rejected	Accepted
Internal Control	0.001	Rejected	Accepted
Inventory Cost	0.000	Rejected	Accepted

(Source: Own Survey results from SPSS Output, 2019)

Table 11: Individual Regression Coefficients

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.217	.493		6.527	.000
	Information Technology (IT)	.201	.095	.185	2.117	.037
	Procurement	-.278	.092	-.254	-3.018	.003
	Internal Control	.265	.079	.298	3.368	.001
	Inventory Carrying cost	-.425	.083	-.426	-5.146	.000

a. Dependent Variable: Overall Effectiveness of Inventory Management

(Source: Own Survey results from SPSS Output, 2019)

Since the sig/P value is, < 0.05 we conclude that all β values are significant. The estimated regression model was $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$. As per the multiple regression coefficients in table 15 above, the general form of the equation to predict the effectiveness of inventory management is:

$Y = 3.217 + 0.201X_1 - 0.278X_2 + 0.265X_3 - 0.425X_4 + \varepsilon$

Where: - β_0 is Constant (Where Xs=0)

   Y is Effective inventory management,

   X1 is Information Technology,

   X2 is Procurement Procedure

   X3 is Internal Control and

   X4 Inventory Carrying Cost.

   ε = stochastic term or error term

   $\beta_1, \beta_2, \beta_3, \& \beta_4$ = Regression coefficient

Finally, the result is interpreted as follows: -

Effectiveness of Inventory Management if all independent variables are kept constant at zero, effective inventory management will be 3. 217.

Information Technology significantly and positively affect effectiveness of inventory management. The estimated coefficient of IT is 0.201. This implies that holding other explanatory variables constant, a unit increase or improvement in information technology results a 20.1% improvement in the effectiveness of inventory management.

Bureaucratic procurement procedure significantly and negatively affects effectiveness of inventory management. The estimated coefficient of bureaucratic procurement procedure is -0.278. This implies that holding other explanatory variables constant, a unit decrease in bureaucratic procurement procedure will lead to a 27.8% increase in the effectiveness of inventory management.

Internal control over inventory significantly and positively affect effectiveness of inventory management. The estimated coefficient of Internal control over inventory is 0.265. This implies that holding other explanatory variables constant, a unit increase in inventory internal control will lead to a 26.5% increase in effective inventory management.

Inventory carrying Costs significantly and negatively affects effectiveness of inventory management. The estimated coefficient of inventory carrying costs is -0.425. This implies that holding other explanatory variables constant, a unit decrease in Inventory carrying costs will lead to a 42.5% increase or improvement in effective inventory management of ethio telcom.

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5.CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

Information technology and effectiveness of inventory management are significantly and positively related. The study found out that information technology was useful to a greater extent on managing inventory effectively. Procurement procedure and the effectiveness of inventory management are significantly and negatively related. Internal Control over inventory and effectiveness of inventory management are significantly and positively related. It can be concluded that aspects of existing internal control practice had influence on the effectiveness of inventory management of the organization. Inventory carrying cost and effectiveness of inventory management are significantly and negatively related. This concludes that procurement procedure and inventory carrying costs have negative contribution, information technology and internal control over inventory have positive contribution to the effectiveness of inventory management

5.2 Recommendations

Considering the findings and conclusions, the following recommendations were proposed:

The study proposes a review on the appropriate ERP Supply Chain and Financial modules to thoroughly use the system. By doing this, the company can effectively use its resources and reduces unnecessary costs. The study also recommends that, item standardization should be implemented throughout the company since there is a single item with different item code/name on the ERP system which leads to overstocking and obsolescence of items.

Procedures and processes that slow down the procurement process should be revised and avoided by using the existing ERP system exhaustively. In addition, engage in a master framework agreement (MFA) with suppliers for all fast moving and critical items to minimize stock outs. In addition, the company should modernize the procurement process, which will realize real time procurement thus increasing transparency in procuring goods.

Sourcing department should closely work with the project team and the supplier /vendor and sign an agreement with them to deliver and store the project item as per the project phase in order to minimize compatibility and obsolescence issues of the first delivered items.

The company management should pay attention on inventory items which requires a management decision to dispose the obsolete, damaged, and idle inventories, to plan and design the computerized warehouse system.

The current internal control practices and procedures over inventory need to be revised and restructured. A fully automated stock record system for all transactions should be made in the warehouse for easy identification of materials in the stores and to reduce the misleading practices due to storing new materials with obsolete once. This can be done by disposing obsolete materials on time, and proper planning during procurement.

Inventory carrying costs should be kept at a minimum possible level. Over and under stocking of products should be minimized. In addition, ethio telecom should utilize the economic order quantity model throughout the company to minimize over and under stocking. The existing ERP Supply Chain management software should be clearly designed to show historical used data and the balance in the warehouse to create assumptions based on that data with respect of the purchase order of the item.

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