

The Effect of Integrated Warehouse Operation Efficiency on Organizations Performance



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Abstract: Worldwide several firms have suffered a lot of problems in inventory management which concerns their operational achievement. Good inventory management is a means to improve customer service and reduce stock. The objective of inventory management is to handle it in a most reasonable cost and remove the constant accumulations for continuous developments. This paper brings out how to assess the effect of integrated inventory management practices on organizations representation of some selected universities in Amhara region, Ethiopia. To remain competitive, inventory accounts needs a huge capital of an organization and must have a good management in the overall flow of resource from the initial purchase to final usage. Generally, the goal of every business is to hold little inventory and keep their business running. So, those universities in this region have hold a little inventory and make their organizations run well, even determine how much they do have in their store and determine for how long it will serve them.

Index Terms: Cost of Inventory, Inventory, Inventory Management, Warehouse.

I. INTRODUCTION

Few decades ago, managing inventory was not seen or considered as essential for organizations in general, and even the existence of excess inventories were considered as the indication of wealthiest of some organizations. According to Eckert (2007) [1] inventory management or stock control is the science & art of maintaining stock of a given institutions of incurring the least or minimum charges that's steady with other relevant items and goals set by the management bodies. Exact and good inventory management is a method to enhance customer service and reduce inventory as well as its associated costs. Organizations are facing with some dilemmas in present day's competitive environment, but on the other hand, customer demand customized services and products which in turn require that their demands are filled

rapidly or quickly, and to the contrary they do not want to pay economic value for this availability and customization (Filbeck, et al., 2005) [2]. The purpose of inventory management is to maintain inventories at the lowest manageable costs with the objective to remove uninterrupted or to have a continuous supply for the on-going operations (Adeyemi & Salami, 2010) [3]. When making choice or decision on stock, management has to find compromise between a unique or incomparable cost aspect such as holding costs and cost as a result of insufficient inventories (Guajardo & Rönnqvist, 2015) [4]. Axsäter (2015) [5] stated that, from the financial point of views inventory management is a big matter. Frequently, inventory is seen as the largest and most important asset items of an organization: producers, service providers or in distributors' balance sheet. Hence, management should give a lot of emphasis so as to keep inventories. According to Lashgari, et al., (2016) [6] inventories are stocks of materials of any kind stored for either awaiting conversion or consumed in the future. Inventory can be raw material tools, supplies, parts, semi-finished or finished items. Organizations may have different reasons for having inventors. Some of the reasons are: for financial gain, to provide adequate service to customers, to have smooth flow of inputs in operation process, to avoid dalliance in operation or work, to use items in delivery uncertainly. Management by then considered overstocking as beneficial.

However, these days' organizations have started to have powerful inventory manipulate or control (Lashgari, et al., 2016). Greater than ever before, managers now need reliable, efficient, dependable and effective inventory management so as to minimize and continues as competitive in the market (Oballah, 2015) [7]. According to Mukopi, et al., (2015) [8] in most organizations inventory alone accounts almost for about more than 50% of the organizations invested capital. According to Chase, et al., (2004) [9] an inventory is stated as the item of any component part in-generally used in an organization. Those authors stated an inventory system as it is the set of control's as well as policies that monitor and evaluates the levels of inventories and so as to determine which level should be preserved or maintained. Inventory is defined as "any idle resource of an organization" (Ahuja, 2002) [10]. The concept of idle resource means that, it is not kept for immediate use and shows the importance of having some inventories for the smooth functioning of an organization and in other way inventory is made of all those items ready for sale of items that keep the overall operation of an organization to run well. An inventory is a stock of materials or items that are used to facilitate operations or to satisfy customers' in an organization.

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II. OBJECTIVE OF THE STUDY

The objectives of the study are mentioned below.

- To examine the effect of integrated warehouse operation
- To evaluate the efficiency of an organizations performance
- Assess the effect of integrated inventory management practices
- To recommend suitable measures for improvement of inventory management.

III. REVIEW OF LITERATURE

3.1. Integrated Inventory Management System

Khan & Bosgraaf (2009) [11] in their finding said that, to successfully put in force a stock management practices, it is necessary to combine it in the ordinary or everyday functions achieved with the aid of the organizations employees. This is, while consumer desires to order equipment or items, they would call up the stock control or management system screen related to acquisition. When the users request the acquisition of a particular form of asset, then it would be feasible and possible for the stock system to decide if the asset is already in excess, or if it needs to be bought under the current existing quantity purchase agreement with a supplier. According to Wild (2017) [12] the usage of inventory management system to manipulate and manage the acquisition and installation of stock or items can help in the control of the companies, at the same time as assisting in the mission of employees to carry out asset associated work features. This methodology will result in a work drift and asset management device that is optimized to the organizations. As stated by Schwartz & Rivera (2010) [13] the inventory management system as a technique or process begins with the acquisition of an inventory or stocks, then maintains with the redeployment of property, and ends while an asset is terminated. It interfaces with many employees performing distinct systems of management and control disciplines related to asset or item implementation, guide, and protection features within the organization in addition to finance and corporate management areas all throughout the organizations. According to Heizer & Render (2008) [14] the vehicle used to manipulate the inventory management subject is Change Management. Without the presence of adequate Change management, the integrity of the stock management procedure can't be ensured. These systems control or manage disciplines and capabilities encompass each system and facts network elements and feed the Configuration management disciplines or areas to correctly manage & control inventory.

3.2. Warehouse Operation Efficiency

Inventories which can be withdraw from the warehouse ought to count number to prevent loss among the warehouse and the factor of sale in the organizations warehouse. Inventory is held as protection from uncertainties or unforeseen situations which can happen during operation. Inventories which are raw material inventories in extra of those needed to help operation can result from speculative purchase made as a result of managements expecting both anticipated fee increase and a strike would possibly appear (Stock and Lambert, 2001). The presence of required raw materials will allow the agencies to attain the following merits

like: to take benefit of discount of market fees, it facilitates to defend in opposition to inflation, it provides strategic shares of items which might be in quick supply because of strikes or different supply issues (Stevenson, 2009 [15]; Stock and Lambert, 2001).

The hardship of ineffective and inefficient inventory information system can be associated to the failure to provide the wanted interest to the functions of stores and inability to hire the offerings of nicely certified stores officers to take charge of proper stock report and control (Baily, 1979). In addition to this, Carter and Price (1993) found the problem that "the habit of stock record procedure violation by stores personnel." Inventory track are consequently used to record down the movement of the gadgets or items from the time they enter the shop or warehouse to the time of issue to customers' branch for the supposed aims or roles (Jessop and Morrison, 1994). According to Schroeder (2000) there are three main grounds for containing inventories. Those are transaction, precautionary and speculative reason. Lyson (1996) described that stock may be used as an insurance coverage toward the unexpected or unexpected step forward, delays and other disturbance that would interrupt continuous operations of an organizations. In line with the studies done by some authors and the researchers past literature's, bad documentation or keeping records, existence of bureaucratic system, and terrible investment are some of the factors that limit or affect powerful stock control of an organizations. According to Dobler and Burt (2006) "stock represents moneys of an organization as a result good control actions should be undertaken on the stock as it is cash of the organization." It's essential to have a superb and right inventory record device because it helps in preventing deterioration, overstocking, obsolescence, stock out, and remove high carrying costs incurred by the organizations. Subsequently, a clever and nice stores filing system is crucial for procurement choice making. When you consider that past due posting have unwanted outcomes on agencies inventory and its overall performance, efficient, effective and powerful inventory facts are crucial to a company which expects to perform profitably or offer satisfactory offerings & quality service.

3.3. Requirements for Effective Inventory Management

According to Wild (2017) some of the wonderful requirements for powerful stock management are: a system to preserve truck of the inventory at hand & on order. In turn, this is to find out how much we should have based on inventory fluctuations, rates of demands, how a great deal we have etc. Therefore, a dependable forecast of demand is a sign of feasible forecast errors, expertise of lead times and its variability, reasonable estimates of stock protecting costs, costs of ordering & shortage, right type of classifying systems for inventory items.

3.4. Holding or Carrying Costs of Inventory

The carrying cost, also referred to as the holding cost, is the sum of all expenses which is proportionate to the amount of inventories physically on hand at any factor in time.

The cumulative of carrying cost consist of a variety of reputedly unrelated items. Some of these costs are: obsolescence, taxes and insurances, breakage, spoilage, deterioration, cost of providing physical space to store the items, and opportunity cost of alternative or opportunity investments, the salaries and wages of storing, receiving and issues of material employees, and stationary and other consumables use by the stores. Manifestly, high holding costs tend to favor or have a tendency to have low stock levels and every day or regular replenishment. Excessive levels of inventory will increase the opportunity that the customers are all in all likelihood to get what they need, will increase sales and service level (Cachon and Terwiesch, 2006) [16]. In addition, as per Ton and Raman (2005) [17] high stock levels, however, results in both in-store logistics errors and stock holding costs. Keeping top-rated ranges or most efficient levels of stock in an enterprise is critical due to extra stock results in stock carrying costs (Berling, 2011) [18]. According to Bakker, Zheng, Knight, & Harland (2008) because of stock out the organizations will lose its customer and as a company lost profitable by incurring loss. While stock management like maintaining or preserving adequate stock levels is done successfully, it assures that the materials needed in a company are available with the right quantity & quality for this reason heading off troubles of overstocking and under stocking and in the end making sure consumer pleasure and multiplied profitability of the organizations (Ewuola, Imoundo, Ajibefun, daramola, & Ayodeji, 2005) [19].

IV. METHODOLOGY

The research design that was used on this research have been casual and descriptive research design. This work had focused on employees of those selected universities. This population has been considered a better source of information for conducting the study to accomplish the desired objectives of the study. The sampling design that was used in this research was probabilistic sampling design with a sampling technique of stratified random sampling for selecting respondents from those universities as well as the different departments working within the organization & then simple random sampling was used to select respondent after stratification. The researcher had took sample using the following sample size determination formula. Accordingly, 304 samples were selected from those institutions. Analyses of data in this research were done by using descriptive and inferential statistical methods. The descriptive statistical methods include: frequency, percentage, mean, standard deviation and the inferential statistical method includes correlation and regression.

V. ANALYSIS AND DISCUSSION

According to Ogbo & Ukpere (2014) warehouse is a point or place in logistic system in which an organizations stock, holds stocks of raw materials, semi-finished items, or finished items for various periods of time. The ultimate feature of warehouse is transfer of items and this will take place when the product is moved & stored, this function happens at the same time. It's crucial for the concerned managements to have well timed & correct statistics with the intention to administer the warehouse activity. The information covers such things as inventory level, information of the customer, facility of area

usage, personnel's and many others. Warehouses incorporate or can carry a different form of stocks with a stock file for each. From those types of items, some stock has high value and others are somehow reasonably-priced. The high value items are typically managed harshly, whereas the low value stocks are not given maximum emphasis or dealt with as careful, with much less control, and are issued in bulk in approximate quantities. Maximum attempt has to be put into managing materials which might be very most important for attaining or reaching inventory goal of the companies. In inventory managing the satisfactory outcomes are obtained or won via organizing efforts efficaciously and well. There is no sufficient management time to preserve distinct manipulate all the existing individual item. If the primary and immediate intention is to lessen or limit inventory holding or carrying expenses, then analyzing the inventory of low value item is not going to be best and suitable place to start unless the sales quantity may be very large sufficient.

Table 5.1: Warehouse Operation Efficiency

Warehouse Operation Efficiency	Mean	Std. Devi.	Relative Importance
Those responsible bodies in the university takes appropriate steps to safeguard stock of the organization against theft or loss	3.30	1.157	Medium
There is adequate and timely provisions of solution by the university for obsolete and inactive inventories	3.16	1.112	Medium
Receiving, issuing and storing responsibilities in the university are properly segregated	3.33	1.098	Medium
The university is Using outdated storage	3.71	1.069	High
There is effective stores management in the university	3.63	1.095	Medium
Grand Mean	3.426	1.106	

Source: Computation from survey result, 2018

Table 5.1 depicts about the warehouse operation efficiency of those universities. According to the table, the statement the university is using outdated storage is with the largest mean which is with a mean of 3.71. There is effective stores management in the university is shown by a mean of 3.63; Receiving, issuing and storing responsibilities in the university are properly segregated is shown by a mean of 3.33; Those responsible bodies in the university takes appropriate steps to safeguard stock of the organization against theft or loss is shown by a mean of 3.30 and There is adequate and timely provisions of solution by the university for obsolete and inactive inventories is shown by mean of 3.16. In general, table 5.1. display the arithmetic mean and a standard deviation of the warehouse operation efficiency of those universities which ranges between arithmetic mean of 3.71 and 3.16 with general arithmetic mean of 3.426 which is according to AlShaikhly (2017) Medium range i.e. the Medium degree which ranges from 2.33 - 3.66. Therefore, from the table, it is seen that high arithmetic mean was to the item "the university is using outdated storage" with a mean value of 3.71 & standard deviation of 1.069 while the lowest arithmetic mean value was to the item "there is adequate and timely provision of solution by universities for obsolete and inactive inventories" with mean of 3.16 and standard deviation of 1.112.



This result shows the university is using out dated storage & is not good in providing adequate & timely solution for obsolete and inactive inventories.

Table 5.2: Model summary of the effect of Warehouse Operation Efficiency on organizations performance

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.687 ^a	.471	.470	.581

a. Predictors: (Constant), Warehouse operation efficiency

Source: Computation from survey result, 2018

As it is revealed in table 5.2 above, an R² of .471 which indicates that the independent variable studied, warehouse operation efficiency, explains 47.1 percent of the variation in the organizational performance of those selected universities. Hence, this implies that there are other factors which are not studied and can explain the remaining 52.9 % of the variation in organizational performance of those universities.

Table 5.3: Analysis of Variance (ANOVA) table

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	91.015	1	91.015	269.309	.000 ^b
	Residual	102.063	302	.338		
	Total	193.077	303			

a. Dependent Variable: Organizational Performance
b. Predictors: (Constant), Warehouse Operations Efficiency

Source: Computation from survey result, 2018

To see the significance of regression table, the observer used ANOVA. While testing the significance level, the statistical significance is considered important if the p value is less than or equal to 0.01. Therefore, as it is depicted in table 5.3 above, the significance level of the regression is with a P value of 0.000 which is less than 0.05. Therefore, this show that the regression model is statistically significant at P value 0.01 and hence, it is good for prediction. The overall ANOVA table indicate the model is significant at F = 269.309, P= .000. Hence, reject the null hypothesis and accept the alternative hypothesis implying that warehouse operation efficiency have a significant & positive impact on organizational performance at P value 0.01.

VI. FINDINGS & CONCLUSION

From the findings of the descriptive statistics, it has shown that the general arithmetic mean for warehouse operation efficiency is 3.42 which is in the medium range of class interval. The overall result shows that, those responsible bodies in the university takes appropriate steps to safeguard stock of the organization against theft or loss and there are adequate and timely provisions of solution by the university for obsolete and inactive inventories but there is problem of using outdated storage for keeping inventory. The finding of the correlation analysis shows that warehouse operation efficiency has a positive correlation with organizational performance at significance level less than 0.05 (r= .687, p= 0.000). The results of regression analysis indicate that warehouse operation efficiency was significantly influencing factors of organizational performance with a unit increase of

warehouse operation efficiency leads to an increase of .097 in organizational performance. The regression coefficient of warehouse operation efficiency and organizational performance is positive (β=0.097) and significant (p value 0.003). This indicates that warehouse operation efficiency was statistically significant and has a positive impact on organizational performance at p value less than 0.01. The result further reveals that, Warehouse can carry different variety of stocks & items with stock record or documentation for each. From those forms of shares or items, a few shares are pricey that have high price and others are a few how very cheap. Most attempt and endeavor ought to be positioned into managing items with which are very most crucial for attaining or understanding stock target of the organization. In managing stock, the best results are obtained by using organizing efforts correctly and well. There's no enough control time to keep an in depth manipulate of all the present individual stocks. Therefore, the study reveals that there's high quality dating between warehouse operation efficiency and organizational overall performance such that when the management do not have timely, nicely prepared and correct records in order to administer its warehouse, the organizational overall performance goes to lower and when the management have nicely prepared, timely and correct records which will administer the warehouse activities so that organizational overall performance is going to growth.

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