Assessing the inventory management practices in a selected company in Ghana

Alexander Fianko Otchere *, Emelia Darko Adzimah, Ireen Aikens

Department of Procurement and Supply Chain Management, Faculty of Business and Management Studies, Kumasi Polytechnic, Post office box SE2533 Kumasi, Ghana

Abstract

It has been observed that there is lack of effective and efficient inventory management practices in some organisations in Ghana as a result most organisations are not successful. The purpose of the study was to examine the existing inventory management practices and internal controls of a selected company in Ghana. The study employed Interview Administered questionnaire and observation to collect primary data from staff of the company. Purposive sampling approach was employed to identify fourteen employees directly involved in inventory management operations. The quantitative data was analyzed with the aid of Statistical Package for Social Sciences (SPSS) and Microsoft Excel 2007 Software whilst deductive and inferences were used for the qualitative data. The study revealed that the case company undergoes a lot of inventory management procedures to keep their stock always available to meet customer demands. They have a relatively good Inventory management practices as well as Internal Control Practices. However, it was revealed that, the company was faced with serious long lead time challenges due to bureaucratic procedures in ordering parts leading to cancellation of purchase orders and losing customers. Finally, it is recommended that, pragmatic measures be adopted to implement efficient and effective inventory management software.

Keywords: Inventory, Inventory Management, Assessing, Internal Control, Organisations, Ghana

* Corresponding author. *E-mail address:* alexotchere2002@yahoo.co.uk, thegreatofa@gmail.com

1. Introduction

Inventory management is a complex aspect of Supply Chain Management that is frequently discussed and debated due to the fact that it has a high impact on customer satisfaction as well as financial performance. Inventory management has become necessary in modern businesses in order to achieve excellent customer service, Cost reduction, Enhancing supply chain competitiveness and performance, Gaining market share, growth and expansion of businesses as well as Profitability (De Leeuw et al., 2011; Rao and Rao, 2009). Stevenson (2009) on the other hand indicated that, Poor inventory management hampers operations, diminishes customer satisfaction and increases operating costs. Inventory management is primarily about specifying the size and placement of stocked goods. In their study, Stock et al. (2001) observed that corporate profitability can be improved by increasing sales volume or cutting down inventory costs.

The inventory investment for most businesses takes up a big percentage of the total budget, yet inventory control is one of the most neglected management areas in most firms. Many firms have excess amount of inventory due to poor inventory management practices. Jessop and Morrison (1994) stated that, keeping Inventory value at the lowest practicable level is to economize the use of working capital and to minimize the cost of storage. However, there is always the challenge of managing inventory to balance supply with demand in order to satisfy customers. Firms would ideally want to have enough inventories to satisfy the demands of its customers, and ensure no lost sales due to inventory stock outs. At the same time they want to avoid too much inventory on hand because of the cost of carrying inventory; the trade-off is always difficult to manage. Enough but not too much is the ultimate objective (Coyle et al., 2003). In actual practice many companies suffer from lower customer service, high costs and excess stocks than are necessary. Delays in lead time due to variability in demand of products have resulted in substantial stock outs and backorders thereby causing the inability of suppliers to satisfy customer needs.

The study was guided by the following objectives: To examine the inventory management practices in Weir Minerals West Africa Limited. To assess the internal controls in the inventory management practices in Weir Minerals. It is envisaged that the study would help address the inventory management problems faced by Weir Minerals, the factors that causes improper and inefficient inventory management practices in the company and how these problems can be eliminated or minimized through efficient management systems. Eventually, this work will help management to make strategic decisions relating to effective and efficient inventory management practices, maintain balance between supply and demand, help in forecasting future demands in the company and help change the orientation of both staff and management of Weir Minerals especially those who are involved in managing inventory. Finally, the research work will serve as a future reference material.

2. Literature review

Many organizations in today's business environment are forced to increase their market share both locally and globally in order to survive and sustain growth objectives. The challenge is how to keep substantial level of inventory in order to meet the demands of its customers and also control it to prevent both overstocking

and stock-outs. The definition of inventory varies across scholars but they all have the same meaning. Inventory is basically, the raw materials, work-in-process goods, component parts and completely finished goods that are considered to be portion of a business asset and are ready or will be ready for sale. Inventory represents the most important assets that most businesses possess, because the turnover of inventory represents one of the primary sources of revenue generation and subsequent earnings for the companies' shareholders (Investopedia, 2012; Zagena, 2009). Also, Chase et al. (2004) inventory is all the tangible material assets used in an organization except fixed assets. Inventories can be classified according to the purpose they serve. These include: transit inventory, buffer inventory, anticipated inventory, decoupling inventory and cycle inventory (Stevenson, 2009). Every organization holds some things in stock. Stock can be a nuisance, a necessity, or a convenience (Monczka et al., 2010). The term may also be used as a verb to mean taking inventory or to count all goods held in inventory. For the purpose of this study, inventory management is defined as managing the parts or stocks of materials in any form inside the organization and stabilizing the flow of materials with respect to the variability in demand.

2.1. Inventory costs

Inventory represents an investment in the organization whether as a result of deliberate policy or not (Lucey and Lucey, 2002). According to Coyle et al. (2003) inventory costs are important for three major reasons. First, it represents a significant component of the total logistics costs in many companies. Second, the inventory levels that a firm maintains in the supply chain affect the level of service the firm can provide to its customers. Third, cost trade-off decisions in logistics frequently depend upon and ultimately affect inventory costs. Basically, four types of inventory costs exist. These include item costs, holding costs, ordering costs, and shortage costs. Some literature also make mention of overstocking costs. Costs associated with inventory are generally categorized as either direct or indirect costs (Coyle et al., 2003).

2.1.1. Item costs

Are simply the costs of the items that are held as inventory. If item are manufactured in-house, this cost is the value of the item at that point in the system, to include all material and direct labor costs. For items that are purchased from outside the firms, this is usually the unit price we pay to our vendor (Coyle et al., 2003).

2.1.2. Holding or carry costs

Costs associated with carrying items in inventory. Carrying costs include interest, insurance, taxes, depreciation, obsolescence, deterioration, spoilage, pilferage, breakage, and warehousing costs (heat, light, rent, security). They also include opportunity costs associated with having funds that could be used elsewhere tied up in inventory (Stevenson, 2009).

2.1.3. Ordering costs

These are costs of ordering and receiving inventory; they are the costs that vary with the actual placement of an order. Beside shipping cost, they include, determining how much is needed, preparing invoices, inspecting goods upon arrival for quality and quantity, and moving goods to temporary storage. Ordering costs are generally expressed as a fixed amount per order regardless of order size (Stevenson, 2009).

2.1.4. Shortage costs/ stock-out costs

Shortage costs result when demand exceeds the supply of inventory on hand. These costs can include the opportunity cost of not making a sale, loss of customer goodwill, late charges and similar costs. Furthermore, the cost of lost production or downtime is considered as shortage cost. Such costs can easily run into hundreds of dollars a minute or more. Shortage costs are sometimes difficult to measure and they may be subjectively estimated (Stevenson, 2009).

2.2. Inventory management

Inventory management is vital for the successful operation of most organizations due to the cost inventory represents. Effective management of inventory is a major concern for firms in all industries (Mentzer et al., 2007). There is therefore the need for firms to effectively and efficiently manage their inventories. There are two main concerns about inventory management. First, inventory management concerns the level of customer service (order fulfillment), that is, to have the right goods in sufficient quantities, at the right place and at the right time. Another concern is the cost of ordering and carrying inventories (Stevenson, 2009; Coyle et al., 2003). Inventory management could be defined as the policies and procedures which systematically determine and regulate which items to order, when to order, what should be kept in stock and what quantities of them are stocked (Toomey, 2000; Stevenson, 2009) Hence, the overall objective of inventory management is to attain satisfactory level of customer service by keeping inventory costs within reasonable bounds, amplify corporate profitability, and to minimize inventory investment (Stock and Lambert, 2001; Investopedia, 2012).

2.3. Techniques and philosophies

There are a number of techniques and philosophies that are used in the management of inventory. These are the Just-In-Time (JIT), Economic Order Quantity (EOQ), Materials Requirement Planning (MRP), and Barcode System (Universal Product Code Scanner) & Radio frequency Identification (RFID).

2.3.1. Just in Time (JIT)

JIT is a 'pull' system of production, so actual orders provide a signal for when a product should be manufactured. Demand-pull enables a firm to produce only what is required, in the correct quantity and at the correct time. It is a philosophy of continuous improvement in which non-value-added activities (or wastes) are identified and removed (Investopedia, 2012).

2.3.2. Material Requirement Planning (MRP)

MRP is a computer-based inventory management system designed to assist production managers in scheduling and placing orders for dependent demand items. Dependent demand items are components of finished goods—such as raw materials, component parts, and subassemblies—for which the amount of inventory needed depends on the level of production of the final product. MRP works backward from a production plan for finished goods to develop requirements for components and raw materials. "MRP begins with a schedule for finished goods that is converted into a schedule of requirements for the subassemblies, component parts, and raw materials needed to produce the finished items in the specified time frame. Thus, MRP is designed to answer three questions: *what* is needed? *How* much is needed? And *when* is it needed? (Stevenson, 2009)

2.3.3. Barcode scanner system & Radio Frequency Identification (RFID) tags

Barcode system represents major benefits to supermarkets, discount stores and departmental stores. Barcodes assign special numbers to each and every item you're trying to track, all with an integrated system of data. Upon scanning your inventory's barcodes, they automatically get decoded and entered into a database, which then allows you to track and maintain inventory quantities, pricing, and any other data you want to save. In addition to their increase in speed and accuracy, these systems give managers continuous information on inventories, reduce the need for periodic inventories and order–size determinations (Stevenson, 2009). On the other hand, indicated that, barcode scanning though helps track inventory is not very efficient in tracking manufacturing products and services as they carry only a limited amount of information and require direct line-of-sight to be scanned; Hence, the need to adopt the radio frequency identification system (RFID).

2.3.4. Radio Frequency Identification System (RFID)

RFID tags are a technological breakthrough in inventory management, providing real-time information that increases the ability to track and process shipping containers, parts in warehouses, items on shelves and a whole lot more. This will lead to effective customer service and firm can expect sales to increase. However, as a firm tries to provide perfect customer service, logistical costs increase exponentially (Dooley, 2005). Good inventory management is good financial management and one must agree with the observation that "when you need money, look at your inventories before you look at your bankers" (Bose, 2006).

2.3.5. Economic order quantity models

The question of how much to order is frequently determined by using an economic order quantity model (EOQ). The EOQ model identifies the optimal order quantity by minimizing the sum of certain annual cost that varies with order size. Three order size models according to Stevenson (2009) are: the basic economic order quantity model, the economic production quantity model and the quantity discount model.

2.4. Internal controls in the inventory management practices

A good inventory control can be seen in the following:

2.4.1. Inventory control systems

Inventory control is the activity which organizes the availability of items to the customer, It co-ordinates the purchasing, manufacturing and distribution functions to meet the marketing needs. This role includes the supply of consumables and a reduction of obsolescent items. Wild (2002) adds that the purpose of the inventory control function in supporting the business activities is to optimize the following three targets; Customer service, Inventory cost and Operating cost. The most profitable policy is not to optimize one of these at the expense of others. There is therefore the need for a trade-off among the three.

2.4.2. Requirements for effective inventory management

According to Stevenson, (2009) *management* has two basic functions concerning inventory. One is to establish a system of keeping track of items in inventory and the other is to make decisions about how much and when to order. To be effective, management must have the following:

- A system to keep track of the inventory on hand and on order
- A reliable forecast of demand that includes an indication of possible forecast error
- Knowledge of lead time and lead variability
- Reasonable estimates of inventory holding costs, ordering costs and shortage costs
- A classification system for inventory items

3. Materials and methodology

3.1. Measure

This study adopts a "descripto–exploratory" method, which is a combination of descriptive and explanatory as the studies seek to establish the inventory management practices. The study starts with exploratory research and later follows with descriptive or causal research. The research strategies used were survey in a single case embedded. The study also adopted a deductive approach with multiple data collection instruments such as interview administered questionnaire and observation. The interview administered questionnaire was used to gather both qualitative and quantitative data from management and staff of Weir Minerals West Africa limited. The questionnaire had a very simple structure to enable the researcher cover all research questions. The choice of a multiple method was imperative as they provide better opportunities to answer research questions and to better evaluate research findings and to make inferences and for Triangulation purposes (Tashakkori and Teddlie, 2003, cited by Saunders et al., 2009). Furthermore, the choice of Weir Minerals was made because it is a leading supplier of mining spare parts (pumps) to major gold mines such as Anglogold Ashanti, the leading producer of gold in the country.

The population for this study consisted of management and staff of Weir Minerals a mining spare parts industry with a population of 29 people. This comprises of 25 permanent staff, four contractors constituting, Sales Engineers, Expeditors, Sales coordinators, Accountants, General Manager, Regional Manager, Technicians, Warehouse Staff. The research targeted the staff that had direct dealings with inventory management and control. Non-probability sampling specifically, purposive sampling technique was used for the study. Given the technicalities and relevance of the information required to answer the research questions, fourteen (14) respondents from seven departments consisting of the heads and one experienced staff from each of the seven departments were sampled. The participants were chosen depending on their position, main responsibilities and experience in inventory management or related activities. The departments were: Expediting, Sales Administration, Engineering, Service Centre, Accounts, and Warehouse.

3.2. Data

Both primary and secondary sources of data were used for the study. The Primary data was collected from the selected staff directly, using a set of interview- administered questionnaire and observation. The questionnaire contained closed-ended and open- and close-ended questions using a five point likert scale. The open ended questions require respondents to supply their responses on factors that lead to inventory management and control at Weir Minerals West Africa limited. The set of questions sought to get data on the effectiveness of inventory management practices in the organisation. The questionnaire was administered by the researchers at the company's premise. The secondary data, typical information about the company especially, historical data on supplier/customer lead times and actual delivery dates, organisational profile were collected from the case company's database, website, and literature records (diaries, and reports written) about the company.

All the fourteen (14) questionnaires administered were returned representing 100% response rate. The response rate can be described as excellent; this might mean that respondents found the questions quiet convenient and easy to interpret. Even though, few questions were not answered by some respondents and this may have been due to the respondent not being sure of the answer to give or having no idea on the question asked. The study then adopted a mixed method that is both quantitative and qualitative methods of data analysis. The quantitative data was analysed using descriptive statistics. All data were coded and analysis were carried out using the Statistical Package for Social Sciences (SPSS) version 16.0 and Microsoft Excel 2007 Software to measure the means of all the factors of the responses, relative importance index (RII), to generate standard deviation, frequency and percentages tables as well as graphs for discussion. On qualitative data, content analysis (deduction and inferences) was used. Here the empirical data collected was compared with the underlying theories to verify whether the findings confirm or deny those theories. Finally, the result analysed was presented in descriptive form.

4. Results

4.1. Inventory management practices in Weir Minerals

Table 4.1 Result of mean standard deviation, RII, etc on Inventory management practices in Weir Minerals

Variables/ Factors	N	Mean	Std. Dev.	RII	R
Continuous Review System					
An order is placed only when inventory reaches a predetermined level.	14	2.7857	.97496	0.70	5TH
A fixed order or constant quantity is placed anytime the inventory reaches that predetermined level.	14	1.6429	.74495	0.55	7TH
There is perpetual inventory system at weir Mineral	13	4.3077	.48038	0.65	6TH
Inventory is monitored continuously (Not only sometimes).	14	5.0000	.00000	1.00	1ST
Software is used to monitor inventory levels.	14	4.2143	.57893	0.74	4TH
Inventory is automatically updated after an invoice is raised or a transaction is made.	14	3.9286	.99725	0.75	2ND
There is frequent senior management involvement in your inventory practices	14	4.5000	.51887	0.75	2ND
Periodic Review System					
The company checks inventory at fixed time intervals (e.g. monthly).	14	4.7143	1.06904	0.96	1ST
Orders are placed at specific time intervals.	14	2.1429	1.02711	0.52	7TH
The order size is not constant but enough to reach the fixed target inventory.	14	4.1429	.77033	0.74	4TH
Higher inventory level or larger safety stock is required in periodic review system.	14	4.2143	.57893	0.74	4TH
Replacement quantities change from one order to another?	14	4.7857	.42582	0.89	2ND
Inventory reviews are necessary for effective inventory management	14	4.4286	.85163	0.83	3RD
Weir is able to predict future demands accurately	14	2.3571	.92878	0.59	6TH
Just –in- time					
Some items are only ordered based on a request or at the time of the demand.	14	4.6429	.49725	0.82	3RD
The company reduce inventory by providing a situation that makes its processes much simpler.	14	4.0000	.87706	0.75	5TH
It take long time for Weir to receive an order	13	4.7692	.43853	0.82	3RD

It take long time for Weir to deliver goods received to customers	14	1.0000	.00000	1.00	1ST
Policies and procedures clearly stated and systematically communicated.	14	4.9286	.26726	0.96	2ND

Source: Author's Computation based on the field survey 2013.

NB: RII=Relative Importance Index; R= Ranking; SD=Std. Deviation

Table 4.2. Frequency and Percentage Results of inventory management practices in Weir Minerals = 14

Variables/ Factors	1		2		3		4		5	
	N	%	N	%	N	%	N	%	N	%
Continuous Review System										
An order is placed only when inventory reaches a predetermined level.	1	7.5	5	35.7	4	28.6	4	28.6	0	0
A fixed order or constant quantity is placed anytime the inventory reaches that predetermined level.	7	50	5	35.7	2	14.3	0	0	0	0
There is perpetual inventory system at weir	0	0	0	0	0	0	9	64.3	4	28.6
Inventory is monitored continuously (Not only sometimes).	0	0	0	0	0	0	0	0	14	100
Software is used to monitor inventory levels.	0	0	0	0	1	7.1	9	64.3	4	28.6
Inventory is automatically updated after an invoice is raised or a transaction is made.	1	7.1	0	0	1	7.1	9	64.3	3	21.4
Orders are placed at specific time intervals.	3	21.4	8	57.1	2	14.3	0	0	1	7.1
The order size is not constant but enough to reach the fixed target inventory.	1	7.1	0	0	0	0	9	64.3	4	28.6
Higher inventory level or larger safety stock is required in periodic review system.	0	0	0	0	1	7.1	9	64.3	4	28.6
Replacement quantities change from one order to another?	0	0	0	0	0	0	3	21.4	11	78.6
Inventory reviews are necessary for effective inventory management	0	0	1	7.1	0	0	5	35.7	8	57.1
Weir is able to predict future demands accurately	2	14.3	7	50	3	21.4	2	14.3	0	0
Just –in- time										
Some items are only ordered based on a request or at the time of the demand.	0	0	0	0	0	0	5	35.7	9	64.3
The company reduce inventory by providing a situation that makes its processes much simpler.	0	0	1	7.1	2	14.3	7	50	4	28.4
It take long time for Weir to receive an order	0	0	0	0	0	0	3	21.4	10	71.4
It take long time for Weir to deliver goods received to customers	14	100	0	0	0	0	0	0	0	0

Policies and procedures clearly stated and systematically communicated.	0	0	0	0	0	0	1	7.1	13	92.9

Respondents were asked to rate the factors of inventory management practices within Weir Minerals of West Africa Limited. The rating was a five point likert scale, ranging from 1= "Strongly Disagree" to 5= "Strongly Agree" (Table 4.1, and 4.2). It is discernable enough from Table 4.1 that for the 'Continuous Review System' most of the mean ratings fell between "Not Sure" and "Agree" threshold indicating that most of the practices of Inventory management Weir Minerals were relatively good as far as 'Continuous Review System' was concerned. It is obvious that the factor, 'Inventory is monitored continuously (Not only sometimes)' (mean=5.0, SD=0, RII=1.00) ranked highest. Followed by 'There is frequent senior management involvement in your inventory practices' and 'There is perpetual inventory system at weir, (mean=4.50, SD=0.59, RII=0.75) (mean=4.31, SD=0.48, RII=0.65) respectively. The least factor was 'A fixed order or constant quantity is placed anytime the inventory reaches that predetermined level' (mean=1.64, SD=0.74 RII=0.55). The individual responses from Table 4.2, confirms the findings from table 4.1 that, the first best three factors under the 'Continuous Review System' had their ratings fell between "Agree" and "Strongly Agree". While the least, 'A fixed order or constant quantity is placed anytime the inventory reaches that predetermined level' fell between "Strongly Disagree" and "Neutral" threshold. This means that, 'Continuous Review System' is relatively well managed.

It is evident from Table 4.1 that for the category of 'Periodic Review System' under 'Inventory Management Practices' most of the mean ratings fell a little above "Agree" threshold indicating that most of the practices of Inventory management at Weir Minerals were relatively good as far as 'Periodic Review System' was concerned. It is clear that the highest factor, was 'Replacement quantities change from one order to another' (Mean=4.79, SD=0.43, and RII=0.89). This is followed by and 'The company checks inventory at fixed time intervals (e.g. monthly).' and 'Inventory reviews are necessary for effective inventory management' (mean=4.71, SD=1.07, RII=0.96) (mean=4.43, SD=0.85, RII=0.83) respectively. The only two that respondents 'Disagree' were 'Orders are placed at specific time intervals' (mean=2.14, SD=1.03 and RII=0.52), and 'Weir is able to predict future demands accurately' (mean=2.36, SD=0.93 and RII=0.59). The individual responses from Table 4.2, again confirms the findings from table 4.1 that, the first best three practices under the 'Periodic Review System' had most of their ratings falling between "Agree" and "Strongly Agree"; While the least two had most of their ratings falling between "Strongly Disagree" and "Neutral" threshold. This means that, 'Inventory Management Practices' is relatively well managed.

On 'Just –in- time' under 'Inventory Management Practices', the findings from Table 4.1 indicates that, all the mean ratings but one, fell on "Agree" and above threshold indicating that once again, most of the practices of Inventory management at Weir Minerals were relatively good with regards to 'Just –in- time'. It is obvious that the highest factor, was 'Policies and procedures clearly stated and systematically communicated.' (Mean=4.93, SD=0.27, and RII=0.96). The least among them was the factor 'It take long time for Weir to deliver goods received to customers' (mean=1.00, SD=0.00, RII=1.00) indicating that the

respondents disagree that it takes long time to deliver goods received to their customers. The individual responses from Table 4.2, once again, is consistent with the findings from table 4.1 that, the first best three practices under the 'Just –in- time' had most of their ratings falling between "Agree" and "Strongly Agree"; while the least had all the ratings falling between "Disagree" to "Neutral" threshold. Signifying that Weir is able to deliver goods received to customers at a very short time. This means that, 'Inventory Management Practices' is obviously, well managed.

4.2. Internal controls in the inventory management practices in Weir

Table 4.3. Result of mean standard deviation, RII, etc on Internal controls in the inventory management practices

Variables/ Factors	N	Mean	Std. Dev.	RII	R
Receiving, issuing, accounting and storing responsibilities are properly segregated.	14	5.0000	.00000	1.00	1ST
Management takes the appropriate steps to safeguard goods against risk of loss by theft (e.g. Goods kept in locked buildings, access to which is granted only to authorized personnel).	14	5.0000	.00000	1.00	1ST
Goods released from stores only on the basis of requisitions which are approved by a responsible official or on the basis of invoices raised.	14	5.0000	.00000	1.00	1ST
Management consistently reviews the reconciliation of physical inventory counts and the inventory records.	14	5.0000	.00000	1.00	1ST
There is a reliable re-order point	14	2.0000	1.17670	0.48	9TH
There is a system that prompts you when the stock reaches the re-order point	14	2.7857	1.31140	0.56	8TH
Weir has effective control mechanisms for its inventory management	14	4.1429	.77033	0.74	5TH
You have in place international management trainee programs to educate staff in inventory Management practices	14	1.9286	.73005	0.64	7TH
Performance monitoring and follow up are effective at Weir	14	4.2143	.57893	0.74	5TH

Source: Author's Computation based on the field survey 2013.

NB: RII=Relative Importance Index; R= Ranking; SD=Std. Deviation

Respondents were asked to rate the factors of Internal Controls in the Inventory Management Practices in Weir Minerals of West Africa Limited. The rating was a five point likert scale, ranging from 1= "Strongly Disagree" to 5= "Strongly Agree" (Table 4.3, and 4.4). It is clear from Table 4.3 that, most of the mean ratings fell between "Agree" and "Strongly Agree" threshold indicating that most of the practices of Internal Controls Practices of Inventory Management at Weir Minerals were relatively good. It is discerning that four of the

factors of this category 'Receiving, issuing, accounting and storing responsibilities are properly segregated', 'Management takes the appropriate steps to safeguard goods against risk of loss by theft (e.g. Goods kept in locked buildings, access to which is granted only to authorized personnel)', 'Goods released from stores only on the basis of requisitions which are approved by a responsible official or on the basis of invoices raised', and 'Management consistently reviews the reconciliation of physical inventory counts and the inventory records' all had means of 5.00 (SD=0, RII=1.00) this shows that they are of high importance to the organisation. This is followed by the factor 'Performance monitoring and follow up are effective at Weir' (mean=4.21, SD=0.58, RII=0.74) and the least 'You have in place international management trainee programs to educate staff in inventory Management practices' (mean=1.9, SD=0.73, RII=0.64). The individual responses from Table 4.4, affirms the findings from table 4.3 that, the first four factors under the 'Internal controls of inventory management practices at Weir Minerals' had their ratings falling on "Strongly Agree". While the least, fell between "Strongly Disagree" and "Neutral" threshold. This goes to establish the fact that internal controls of inventory management practices at Weir Minerals are effectively managed.

Table 4.4. Frequency and Percentage Results of Internal controls in the inventory management practices in Weir =14

Variables/ Factors	1		2		3		4		5	
	N	%	N	%	N	%	N	%	N	%
Receiving, issuing, accounting and storing responsibilities are properly segregated.	0	0	0	0	0	0	0	0	14	100
Management takes the appropriate steps to safeguard goods against risk of loss by theft (e.g. Goods kept in locked buildings, access to which is granted only to authorized personnel).	0	0	0	0	0	0	0	0	14	100
Goods released from stores only on the basis of requisitions which are approved by a responsible official or on the basis of invoices raised.	0	0	0	0	0	0	0	0	14	100
Management consistently reviews the reconciliation of physical inventory counts and the inventory records.	0	0	0	0	0	0	0	0	14	100
There is a reliable re-order point	6	42.9	4	28.6	3	21.4	0	0	1	7.1
There is a system that prompts you when the stock reaches the re-order point	3	21.4	3	21.4	3	21.4	4	28.6	1	7.1
Weir has effective control mechanisms for its inventory management	0	0	1	7.1	0	0	9	64.3	4	28.6
You have in place international management trainee programs to educate staff in inventory Management practices	4	28.6	7	50	3	21.4	0	0	0	0
Performance monitoring and follow up are effective at Weir	0	0	0	0	1	7.1	9	64.3	4	28.6

Source: Author's Computation based on the field survey 2013.

NB:1=Strongly Disagree,2=Disagree, 3=Not Sure, 4= Agree and 5=Strongly Agree

5. Discussion and conclusions

5.1. Discussion (Findings)

5.1.1. Inventory management practices

The findings from Table 4.1 indicates that most of the mean ratings of 'Continuous Review System' fell between "Not Sure" and "Agree" threshold indicating that most of the practices of Inventory management at Weir Minerals were relatively good. 'Inventory is monitored continuously (Not only sometimes)' (mean=5.0, SD=0, RII=1.00) ranked highest. The least factor was 'A fixed order or constant quantity is placed anytime the inventory reaches that predetermined level' (mean=1.64, SD=0.74 RII=0.55). The individual responses from Table 4.2, confirms the findings from table 4.1 that, the first best three factors under the 'Continuous Review System' had their ratings fell between "Agree" and "Strongly Agree". While the least, fell between "Strongly Disagree" and "Neutral" threshold. This is an indication that, 'Continuous Review System' is relatively well managed.

On 'Periodic Review System' under 'Inventory Management Practices' most of the mean ratings fell a little above "Agree" threshold indicating that most of the practices of Inventory management at Weir Minerals were relatively good as far as 'Periodic Review System' was concerned. The highest factor, was 'Replacement quantities change from one order to another' (Mean=4.79, SD=0.43, and RII=0.89). This is followed by 'The company checks inventory at fixed time intervals (e.g. monthly).' and 'Inventory reviews are necessary for effective inventory management' (mean=4.71, SD=1.07, RII=0.96) (mean=4.43, SD=0.85, RII=0.83) respectively. The individual responses from Table 4.2, again confirms the findings from table 4.1 that, the first best three practices under the 'Periodic Review System' had most of their ratings falling between "Agree" and "Strongly Agree". On 'Just –in- time' under 'Inventory Management Practices', further shows that, all the mean ratings but one, fell on "Agree" and above threshold indicating that once again, most of the practices of Inventory management at Weir Minerals were relatively good. The least among them was the factor 'It take long time for Weir to deliver goods received to customers' (mean=1.00, SD=0.00, RII=1.00) indicating that the respondents disagree that it takes long time to deliver goods received to their customers. Table 4.2, show that, the first best three practices under the 'Just –in- time' had most of their ratings falling between "Agree" and "Strongly Agree"; this Signify that Weir is able to deliver goods received to customers at a very short time. This means that, 'Inventory Management Practices' is obviously, well managed.

5.1.2. Internal controls in the inventory management practices

Table 4.3 shows that, most of the mean ratings fell between "Agree" and "Strongly Agree" threshold indicating that most of the practices of Internal Controls Practices of Inventory Management at Weir Minerals were relatively good. It is discerning that four of the factors of this category all had means of 5.00(SD=0, RII=1.00) this shows that they are of high importance to the organisation. This is followed by (mean=4.21,

SD=0.58, RII=0.74) and the least was (mean=1.9, SD=0.73, RII=0.64). Responses from Table 4.4, also affirms the first four factors under the 'Internal controls of inventory management practices at Weir Minerals' had their ratings falling on "Strongly Agree". This goes to establish the fact that internal controls of inventory management practices at Weir Minerals are effectively managed.

5.2. Conclusion

Effective and efficient inventory management practices will always give a competitive advantage to business, regardless of its nature. The researchers established that Weir Minerals undergoes a lot of inventory management procedures to keep their stock always available to meet customers' demands. They have a relatively good Inventory management practices with regards to 'Continuous Review System', 'Periodic Review System' and 'Just –in- time' as well as Internal Controls Practices. They engage in weekly cycle counts, stock taking and also implement the First In, First-Out (FIFO) procedure of inventory management. The researcher also noted that Weir Minerals stock parts based on customer needs which basically are determined by considering previous year's consumption of a particular part. However, it was established that the mining industry which Weir serves is a dynamic one in that, demands of parts vary from time to time. Customers may demand one of a part in a week and the next week the customer would request for several units making it a bit difficult to set minimum and maximum limits. Using the laid down formulas for calculating the minimum and maximum levels also shows that the company would keep rather too much stock which flouts the company's policy of keeping a half-year stock at a time by considering the previous year's consumption level. Finally, the researcher established that most of the respondents saw the need for well efficient and effective inventory management software like the SAP, ERP, Barcode technology, RFID and EDI that can help in managing the inventory. It is therefore recommended that:

One, a decentralized database system (inventory management software) such as RFID, SAP, ERP, Barcode technology and EDI be put in place to enable suppliers of Weir Minerals monitor the stock movement at any given time in order to be to deliver even before expected lead times. Two, Proper forecasting techniques like Qualitative Models: Delphi Method, Experts Opinion, Consumer Market Survey, and Sales Force Composite) and Quantitative Models: such as Time-Series (Moving Average, Exponential Smoothing, and Trend Projections) and Causal Methods (Regression Analysis) are sued. Finally, the management of Weir Minerals should put measures in place to be responsive so as reduce excess lead time variability of between four (4) days to eighty nine (89) days to avoid keeping too much safety stock.

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