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Assessment of inventory management in organization: a case of higher learning in Dodoma municipality

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ASSESSMENT OF INVENTORY MANAGEMENT IN ORGANIZAITON: A CASE OF HIGHER LEARNING IN DODOMA MUNICIPALITY

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A Dissertation Submitted in Partial Fulfillment of the Requirements for Degree of Master of Business Administration of the University of Dodoma

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CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the University of Dodoma, a dissertation entitled *"Assessment of inventory Management in Organizations"* in partial fulfilment of the requirements for the degree of Master of Business Administration of the University of Dodoma.

....

Dr. Viswa Nadham

(Supervisor)

Date:...

DECLARATION

AND

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I **Mzori Yohana**, declare that this dissertation is my original work and that it has not been presented and will not be presented to any other University for similar or any other degree award.

Signature ....

DEDICATION

This dissertation report is dedicated to my wife Stella Mjema for her good cooperation during all time of my studies from course work until this time. Also my children P.A Mzori and G.E. Mzori for their pray to me since I start my course work until today as well as to all lecturers from the University of Dodoma who direct me in one way and another during all the time of my studies specifically Dr. Viswa Nadhan who is my supervisor may God our father bless them all Amen

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ABSTRACT

This study sought to assess the inventory management practiced in organization using a case study of the higher learning organization located in Dodoma Municipality. Both quantitative and qualitative research approaches were employed as well as the sample of 51 respondents was taken. Data collection was carried out March 2013, while data analysis and report writing was done from May to June 2013. The study used questionnaires, personal interviewed, documentary reviewed and observation to elicit information from the sample, and data were analyzed through SPSS version 16 while findings were presented through description tables.

The findings have revealed that, there were materials shortages while some of them were rate delivered specifically due to lack of good coordination among the supplies section or department and other user department, lack of enough fund for purchasing the required quantity and due to small number of competed supplies located in the area. Moreover there some poor management of inventory practiced due to lack of training, stock control unit, and poor supervision specifically on security matters.

This implied that management had to understand that inventory represent money that tied up in total capital of organization therefore it need very close controlled and supervision by make sure good training are well provided regarded the matter, there are good coordination among department so that follow up of materials will be easily, improved some security measure to prevent loss of inventory in organization as well as to managed their inventory by use a computer system in organization.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABRIVIATIONS

CBE	College of Business Education
IRDP	Institute of Rural Development Planning
SJUT	St John University of Tanzania
UDOM	University of Dodoma
PPRA	Public Procurement and Regulatory Authority
PSPTB	Procurement and Supplies Professional Technicians Board
MRP	Materials Requirement Planning
JIT	Just In Time
NHEP	National Higher Education Policy
EOQ	Economic Order Quantity
DSM	Dar Es Salaam
USA	United States of America
URT	United Republic of Tanzania
SPSS	Statistical Packages for Social Science.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter presents the background information of the study, and then it explains about statements of research problems, objectives both general and specific, research questions and the significance of the study. The scope of the study with summary winds up the chapter.

1.2 Background information

The concept, perception and importance of Inventory management as well as different systems employed by organizations in managed inventories differ from one organization to another. Generally inventory management is defined as a set of policies and procedures in which an organization employ to determine which materials will be held in stock as well as the quantities of each item kept in store or warehouse in an orderly and economical manner pending to be issues to customer or ultimate users (Stevensons, 2005).

On other hand, Bhattacharya (2007) added that the term inventories implies to a stored quantity of goods that exceeds what is needed for the firm to function at the current time. It comprises of the policies and procedures in which an organization systematically regulates the range of things in stocks in terms of quantities held and their replenishment, therefore an organization has to acquire, to allocate as well as control the factors of production that are necessary for the achievement of the

business's objectives.

Simply inventory management is one of the key activities of the business logistics, as well as the company's survival and growth (Kyando, 2009) since the key activities of the most organizations depend much on inventory. This implies that, the effective inventory management can allow the smooth running of different activities such as productions, purchasing, transportations, storage and issuing etc. Also Thomas and Kilpatrick (2000) added that, the need for inventory usually resulted due to customer demand to perform the daily business operations since the primary goal of inventory management is to provide the right item, at the right location and available within the reasonable time, at the lowest cost. Inventory represents money that is tied up until the inventory leaves the company as purchased products. In fact some of the organizations in Tanzania failed to absorb the types of losses arising from poor inventory management. Muller (2003) mentioned that, unless inventories are controlled, they are unreliable, inefficient and costly.

Moreover as we see from the above, one among the roles of inventory management is to smooth the organizations operation so that the production process can continue without interruptions at very minimum cost.

Therefore, through well inventory management practices in higher learning institutions can ensure well availability of inventories at the required quantity, quality and when required, so as productions can continue without any interruption in order to satisfy their users and beneficiary through providing better services at very minimum costs since the primary objective of inventory management as justified by

Thomas and Kilpatrick (2000) is to provide the right goods in the right quality, at the right price in the right place and at the right time.

1.3 Statement of the research problem

The problem of inventories management have existed for too long like stock out, capital tied up due to excess stored, obsolete, discrepancy and pilferages etc. These problems were still with us to date and are universal rather than peculiar problems. Thus, it is not limited to a single organization but all business as well as not only limited to the private sectors with its background motive of profit maximization, but also to the public sectors organizations. In order to solve those problems many studies have been conducted on inventory management such as (Biederman and David 2004) perusing inventory management (Stevenson, 2005) etc. In spite of these efforts, and even with abundance of resources (materials), many institutions are still having these problems. This problem happen because either replacement of items is not done at the right time, or the wrong quantities and quality is ordered due to poor decision, lack of good stock control, the top management officials failure to give a deserved attention regards the inventories management practiced in organizations as well as their inability to employ well qualified officers to take charge of inventory management supervision unit. The problem may exist also due to the habit of inventory's managing procedures violated by the top, the middle, and the junior personnel in the organizations as well as several discounts offered in which an organization may prefer the quantity discount without making comparison of incremental in cost related to the cost incurred at EOQ etc. There has been high

pressure to supply the needed goods and services in terms of both human and financial resources all of which could interfere with or shift the supply chains. Due to this, further research is required in order to provide the insight information regarding inventory management practices at institutions in Tanzania.

1.4 Purpose of the study.

The main purpose of this study is to assess the inventory's management practices within higher learning institutions in Tanzania in order to ensure that inventories are well available at required quantity, quality and within reasonable time.

1.5 General Objectives

The general objective of this study is to assess the inventory management at institutions in Tanzania.

1.5.1 Specific Objectives

The specific objectives of this study were:

1. To determine how the institutions ensure that the right quantities, quality of inventories are well available when required.

2. To determine how the institutions reduce the losses of inventories due to privileges, damages and other means.

3. To understand the challenges of applying inventories management system toward availability of inventory in institutions.

1.5.2 Research Questions

1. Are there enough inventories to support institutions operations?

2. Which ways or techniques employed by institutions to prevent any loss of inventories within institutions?

3. What are challenges do the organizations face during implementation process of inventory management system?

1.6 Significance of the study

This study has come at the right time since all institutions use huge amount of money to invest on inventories in order to ensure materials were readily available in terms of quality, quantity and at the right time so that different activities continued without any interruption with the aim of yielding better quality services at very minimum costs of production. This study adds skills and knowledge specifically to decision makers in regard with what, when and how quantities of inventories have been purchased economically in order to ensure that enough inventories are available to the smooth production operations.

Furthermore, the researcher provides some recommendations to other researchers to undertake further research related to effective inventory's management system in Tanzania.

1.7 Scope of the study

Punch (2004) defined the scope of study as the drawing boundaries around a study in which shows clearly what is and what is not included. Therefore, the study focused on assessment of inventory's management at institutions in Tanzania a case of higher learning institutions located in Dodoma region.

1.8 Summary of Chapter

This chapter presented background information on inventory management specifically it's important as well as the need to improve service provision at reasonable costs. The statement of problem, objectives and the guiding research questions were explained. Other way round the significance of study is well explained and the chapter has been winded up by the scope of the study. The next chapter focused on the literature review related to the study.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter covers review of the key terms and concept of the study, which includes inventories and its management system. Moreover, theoretical review is explained in this part followed by empirical review from various researchers who did studies that are close to this one. Finally, this chapter ends by providing the conceptual framework which guided the study with a summary.

2.2. Theoretical Literature Review

2.2.1. Definition of the key terms

This section provides definitions of the key terms used in the study. This has based on writings of prominent scholars in the area of inventories management.

(a) Management - This is the process of directing, organizing, coordinating, leading, controlling, planning, staffing, and budgeting.

(b) Controlling - This is the set of rules and regulations that are followed in order to meet the given objectives to smooth operations efficiently and effectively.

(c) Lead time - This is the period of time between ordering and replenish of the required inventories.

(d) Demand - This is the amount required for sale or productions purposes in the organizations.

(e)Economic Ordering Quantity (EOQ) - This is an economic quantity ordered through balancing costs between inventories, holding costs and re-order cost.

(f) Physical Stock - This is an item physically in stock at a given time period.

(g) Safety Stock - This is a minimum stock level which are stocking to cover errors in forecasting the lead-time or to cover the demand during the lead-time.

(h) Maximum Stock - This is a stock level selected as the maximum desirable which is used as an indicator to show when stock has risen too high.

(i) Re-order Level - This is a level of stock whereby further replenishment order should be placed.

(h) Re-order Quantity - This is a quantity of the replenishment order, in a given time period.

2.2.2 Inventory

Inventory is a stock of goods that is maintained by a business in anticipation of future demand (Drury 1996). All organizations keep inventory to smooth different operations as results of quality products or services produced at minimum costs of production. Inventory includes an organization's raw materials work in process, supplies used in operations, and finished goods. In addition to this, Inventory comprises the stock such as raw materials, supplies, components, work in process,

and finished goods that are kept by a firm for production and logistic channel (Ballou, 2004). On other hands, Chase, Jacob and Aquilano (2004) stressed that inventory are stock of any items or resources that can be used in an institution for production purposes and Pycraft (2000) define inventory as the accumulation of materials resources in a transformation system within an organization.

2.2.3 Inventory Management

Inventory Management comprises of all activities involved in developing as well as managing inventory to ensure that adequate supplies are available at minimum costs when required (Kolter, 2000). The purpose of inventory management is to serve customers requirements (Lloyd et al, 2008). In case of cost wise inventory management can be defined as an organization's efforts to comprehend the minimal costs in which the levels of inventories available held can still meet demand (Hendrick, 2010). Generally inventories consume large amount of organization's fund, therefore it should be well controlled as justified by Schroder (2002) that, inventory management has an impact on all business functions like marketing, accounting and finance etc. Moreover Morris (1995) in broadside mentioned that, inventory management is the process of keeping the most economical amount of inventories in order to facilitate an increasing total value of assets of the institutions.

Therefore careful managing inventory can make significance contributions to an institution's profit or better services by increasing returns of total assets.

2.2.4 Forms of inventory

Inventory basically falls into the overall categories of raw materials, finished goods, and work-in-process as elaborated below;

First category are raw materials which are in different components that are used in the operations for the productions' purposes such as fuels paintings, timber, nails, tires etc,

Second type is work in progress which consists of different parts of finished stocks Third type are finished products which are stocks that are held at the end of the production process in order to transfer to final customers and, the lastly type is general stocks which comprise of the mixture of products used to support different operations as justified by (Lucy, 2003) while Muller (2003) mentioned that, inventories can be categorised as raw materials, Work in Process and Finished goods as explained above.

2.2.5 Valuation of inventory

Inventories in organizations representing money value since they are purchased at different costs (Bhattacharya, 2007). Inventories can be valued through specified method in such a way, all the items have the same price. The method employed should be approved by the board and be valid for three years as specified by Muller (2003). Bhattacharya (2007) stressed that, valuation methods of inventories in organization can be categorised into

the following types such as FIFO, LIFO, and Average methods are as elaborated below:

(a) First in first out (FIFO)

Under this method, inventories were issued to productions process in order of the receipt in store or cost of goods sold in trade. This implies that inventory cost computed on the assumption that goods sold or materials consumed are those which have been in store for the longest period.

(b) Last in first out (LIFO)

This method is just opposite to FIFO in which materials are charged to productions process based on current costs or price. It intends to match current revenues against current costs.

(c) Average cost

This method attempts to smooth the extremes of fifo and lifo by taking average out of the cost of all units purchased at various points in time and at various periods during the accounting year.

(d) Simple average

This is calculated by dividing the total of unit costs purchased at different lots during the period by the number of such purchases. It ignores the size of purchases in each lot and hence, all the lots receive the same weight respectively to the number of units purchased.

(e) Weighted average

This method corrects the distortion of the simple average by considering the number of units purchased in each lot. It is calculated by first multiplying the unit cost with each lot size i.e. the number of units purchased.

(e) Moving average

Under this method the average unit cost is calculated by taking into account the balance already at hand. This requires cost calculations and hence it is most suited in a computerized environment. Both the simple average and weighted average cannot be calculated until the period is over, but moving average can be calculated on continuous basis.

2.2.6 The reason for holding inventories

Muller (2003) stressed that the principal goal of inventory management involving to balance the conflicting economics of not holding too much stock, by guide against the incurring of costs such as storage, spoilage, privileges as well as obsolescence and, the desire to make items available when and where required in term of quality and quantity Additions to that Schroeder (2000) concluded that, there are three motives for holding inventories, which are transaction, precautionary and speculative motives as elaborated below;

By transaction motives is when a firm holds an inventory to meet productions and sales requirements while precautionary motives applies only when future demand is uncertain. Therefore inventories are kept under precaution bases and the speculative

motive is when the firm holding inventory is larger than normal in anticipation of making abnormal profit specifically in future time.

Generally the following are reasons for maintaining and controlling inventories in institutions as stipulated by (Stevenson, 2005):-

(a) Meet demand.

In order for a retailer to stay in business, it must have the products that the customer wants at hand when the customer wants them.

(b) Keep operations running.

Institutions should have certain purchased items such as raw materials, work in progress and goods in order to produce quality products or services at reasonable costs of productions.

(c) Lead time.

Lead time is the time elapsed between the placing of an order and actually receiving the goods ordered. The longer the lead time, the larger the quantity of goods the firm must carry in inventory to continuing with production without any interruption.

(d) Hedge.

Also inventory can be used as a hedge against price increases and inflation.

(e) Quantity discount.

Often firms are given a price discount when purchasing large quantities of goods.

(f) Smoothing requirements.

Inventory is also used to smooth demand requirements in a market when demand is somewhat erratic. Sadiwala (2007) added that the materials as inventory are stocked for transaction, precautions against shortage and speculation as elaborated above.

2.2.7 Inventory Planning

Inventory planning can be defined as the process of determining the future course of action in regard to inventory requirements based on some known factors such as consumption rates, lead time and capability to acquire (Tesha, 1998). In addition to that Sadiwala (2007) stressed that, in every organization like higher learning institutions, inventories are to be kept to facilitate operations, therefore how much inventories are to be stored and when they are required is a big problem, which will be solved by efficient inventory planning.

Essentially, inventory management involves planning which is looking ahead in terms of determination in advance of what quantity of items to order and how often are to be ordered to ensure well availability when required in an efficient and effective manner (Muller, 2010).

Moreover Tesha (1998) added that one among the importance of inventory planning is to enable a firm to determine in advance, what is it going to stock and how much of each item be needed through aggregate planning and forecasting whereby aggregate planning and scheduling is the process of developing an institution's plans

for the upcoming period and tentative plans for possibly up to a year ahead, and forecasting is an attempt to project into future based on the past and present outlook.

2.2.8 Inventory control system

As we know that not all types of inventory require the same treatment when controlling them, therefore those items that are more important should be given more attention and treatment to compare with those of less importance. Moreover according to Keth at all (1994) mentioned that Stock control is the process of making continued checking of the inventories level so that the correct quantity and quality are available effectively and efficiently in organizations.

Also in additions to this Tesha (1998) concluded that, there are several approaches in segregating the items traditionally based on their usage value and importance as follows;-

(a) VEN classification whereby under this system items are classified according to the order of their importance since;

V stands for very essential, so that both regular and no stock out are allowed.

E stands for essential so that they required to be purchased due to demand while,

N stands for not essential which are essentially in such away only small amount need to be stocked whereby in very essential items no stock out is allowed while essential items may not cause collapse of the firm in case of its absence.

(b) ABC Control System;

Under this system items are classified into A class items, B class items and C class items whereby high value have been categorized as shall be categorized as A class while those with medium valued have been classified as B class and low usage value are classified as class C items. Through this analysis management can develop a system of control whereby items in A class need very extensive control and the applications of high level quantitative model, while items fall into class B would subject to moderate control techniques and those falling in C category are subjected to very simplified control techniques.

Apart from above Sadiwala (2007) mentioned that, the following are types of inventories control system such as two bin system, economic order quantity system, fixed order quantity and variable cycle, fixed cycle and variable quantity, replenishment system and ordering with quantity discounts as elaborated below;

(a) Two-bin System

This is a system whereby two bins are used to store and issue the inventories in which the order is placed when the first bin is empty. Through this system, order should be placed and arrive at the time just before the second bin is empty. Actually this is good when the rate of consumption and time of ordering are well known.

(b) Maximum-Minimum System

In this system maximum and minimum (safety) levels of inventory stored are established and fixed. The order is placed when the inventory touches a minimum

level of a particular quantity, example if the maximum amount in the store is 100 units and 10 units is safety stock then order should be placed when inventory level reaches 10 units.

(c) Economic Order Quantity (EOQ) System

This is the economic amount of materials which is ordered when the ordering and carrying cost are equal.

(d) Fixed Order Quantity and Variable Cycle System (Q System)

This is when the fixed quantity is ordered every time while the number of cycle for orders to be placed and time may vary. The fixed order quantity (Q) depends on, price, usage rate and maximum and quantity kept in inventory.

(e) Fixed Cycle and Variable Quantity (P) System

This is when the period of review is fixed while the quantity to be ordered change as per demand or rate of consumption in such a way that, the ordered quantity is economical to be purchased.

(f) Replenishment System

Under this system, supplier puts the restrictions on minimum order quantity in which is termed s and maximum level of inventory is termed as S, therefore replenishment level is in between S and s values and before the decision regarding to the amounts of order to be placed, the accurate information of inventory levels and rate of consumption should be available.

(g) Ordering when Quantity are Available

This is when the materials are purchased in bulk in order to enjoy purchase discount in price of the materials purchased.

2.2.9. Inventory costs

Inventory costs are those costs which incur in purchasing process of materials that started from preparing order until the items are brought in the organizations. This costs are being categorised as purchasing or acquisition costs, ordering or set up costs, holding costs, stock out costs as justified by Bhattacharya (2007) as elaborated below;

(a) Purchasing or acquisition cost.

This is the cost used to purchased goods or materials directly from outside suppliers in the organization such as the net purchase price of quantity discounts plus freight insurance, holding, unloading etc.

(b) Ordering or set up costs.

These are costs associated with writing and placing an order such as follow up costs, receiving and inspecting costs, and the costs of all other jobs necessary for binged and taking the goods to store.

(c) Holding cost.

These costs comprises of two kinds of costs such as physical carrying of inventories like storage costs, costs of insurance, rate and taxes, handling, shrinkage, deterioration as well as obsolescence and financial costs of funds engaged in inventories like the opportunity costs of alternative source of investments.

(d) Stock out cost.

This is an implicit cost of lost sales due to shortage of supplies such as costs of back order costs, lost profits due to loss of sales, as well as costs of losing goodwill which can affect future sales and profit in general.

In additional to that, Bhattacharya (2007) mentioned that, internal shortage costs is the one which occurs when the requirements of production in the department is not fulfilled or is delayed, as a result of production costs increasing due to idle time.

2.3 Management commitment on inventory management

Inventory management practiced depend on the top management commitment through establishing inventory management policy and regulations and making emphasis in proper inventory management system practiced in order to ensure that inventories are well available to avoid surplus or shortage of inventory in organizations. In supporting this Unruh (1996) stressed that, top management tended to assist institutions to focus on its customers. Therefore commitment of top management will assist well inventory management practices in institutions hence required materials and items to facilitate organization's operations are well available

at minimum costs as concluded by Zulnaid (2009) that, the introduction of any Idea may be hard to sustain specifically without receiving full commitment from management to the employees. Generally Management in Institutions has to know the value of Inventory towards performing operations

2.4 Training and development

This is a very important aspect on inventory management practices due to different changes resulting from technological changes. Zulnaid (2009) mentioned that, employees should be well educated in order to be aware of any new initiative introduced. On the other hand Bagby (2004) supported by adding that, due to new changes occurring there is need for employees to attend different seminars and workshops regarded to their profession. Therefore through training every employee, an organization can be in a position of knowing proper usage of items, protection measures and the general control of an organization's facilities. Moreover effective and efficient inventory management practices need employees to attend different training and workshop in order to keep in touch with new techniques that might be introduced from time to time as technological changes.

2.5 Communication

Effective communication can assist the management to identify user's requirement and provisions of directive regarding to inventory practices in organizations. Eyre (1982) stressed that, effective communication is a vital tool needed by the management in which without communication operations to be carried will fail since no instructions are given, or taken.

Therefore through communication the management can provide instructions regarding to proper inventory management system so that items surplus or shortage can be avoided. In supported this Naudi (2005) informs that, proper procedure as well as different work instructions must be observed so that work or operations can be correctly done throughout the whole process.

2.6 Empirical Literature review

The study conducted by Bagby (2004) on "management inventory to meet profit goals" that was conducted in USA showed that institutions have strived for improved inventory management systems by carrying zero or approaches zero inventories without sacrificing customer demand efficiently through employing the concept of just-in-time technique.

In the study conducted by Challe (2010) on 'centralized stores system in inventory control and its impact to customer services' in Tanzania, the results revealed that inventory help to maximize customer service by protecting against uncertainty, through forecast exactly what customer need. This means customer services in one way or another depends much on the availability of inventories in the production process.

Another study conducted by Chisholm (2000) related to 'inventory accounting and physical control through maintaining accurate records and valuing inventory' revealed that, the accuracy of inventory records is necessary to; provide satisfactory customer service. Actually this means that through good record as part and parcel of inventory management practices in institutions lead to customer service satisfactions.

On the other hand the study related to inventory control conducted by Pallangyo (2003), summarized that, the proper control and maintenance of inventory to any institution is needed to ensure that the production process can continue without interruption.

Another study regarding to effectiveness of inventories that were conducted by Meena (2001) showed that, the means of achieving an effective inventory management depends on different factors like, goals or objectives, size of the business, type of staff held whereby at the end of his study he concluded that, an effective control can be achieved through the following; proper stocktaking practices, proper stock accounting exercises conducted by internal audit department or section and discrepancy should be proper handled if any.

2.6.1 Research Gap

Actually several studies have already been done as we see from empirical studies related to inventory's management in Tanzania and other countries both under developed as well as developed countries but until to date trend showed that large number of different organizations faces a lot of constraints in their daily operations due to improper management inventories in their organizations such as high production costs, loss of items due to damages or poor utilization or theft which lead to shortages of items as well as and poor services provided at relatively as well as low profit or loss resulted.

Therefore this research aims at assessing the inventory's management system in organizations in order to solve those problems

2.7 Conceptual framework

The conceptual framework based of the study is stipulated below. It is formulated through integrating together the reviewed theories and empirical work. As mentioned by Punch (2004) that, conceptual framework can be a situation or status of things being studied as well as their relationship to each other and helps the researcher in developing, describing and specifying the research questions.

Figure 1: Conceptual Framework

| • Training and development
• Proper inventory procedure
• Proper security measure
• Communication and commitment | → | • Cost Reduction
• Smooth operation
• Quality services provision
• Profit maximization | → | Effective inventory Management |
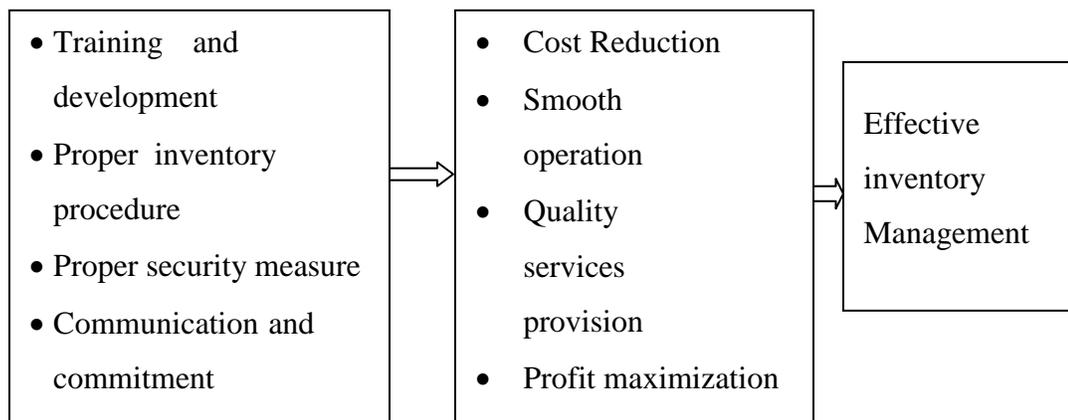
Source: Research ideas 2013

The conceptual framework above is based on the argument that, proper inventory's management in whatever institution depend on successful establishment and applications of inventory's management elements such as provision of training and development, proper inventory policies and procedures, proper securities on inventories available as well as establishment of good communications and commitment regarding to inventory's requirements in institutions.

23

Through proper inventory's management system, enough inventories in terms of quantity, quality are well available when required in organizations.

2.8 Summary of chapter

As evidenced in the literature reviewed, there is empirical support that inventory's management system helped the organizations in utilizing their funds specifically through encouraging availability of required inventories at the right quantity with right quality at reasonable time. On the other hand empirical studies in relation to the study were reviewed and indicated the need of this study. However, the real practice shows that, management in work organizations does not put attentions on it. Furthermore the chapter explained different systems adopted by institutions to control inventories. The conceptual framework shows variables that developed based on reviewed literature. The followed chapter explains the research methodology.

CHAPTER THREE

METHODOLOGY

3.1. Introduction

This chapter presents an overview about methodological issues concerning the study. It can give explanation about research design, data collection techniques, data collection procedure and data analysis methods. Furthermore the chapter discusses about issue of validity as well as reliability.

3.2. Research design

A research design is the arrangement of conditions such as what, when, how much, by what means the study can be done. It is not only the conceptual structure within which research is conducted but also constitutes the map or picture for the collection as well as measurement and analysis of data (Kothari, 2004). In addition of that also Michael (2000) added that research design can be defined as the strategy plan and the structure of conducting a research project. It provides the necessary procedures for obtaining required information to solve research problems. This study is both quantitative as well as qualitative that employed a case study designs to assessed inventories management towards institution performance due to convenience and expectation of being information rich. Yin (1994) stressed that, descriptive case studies are the ones that try to describe a situation regarding what happens. Also case study is useful strategies for studying process in companies and for exploratory purposes.

3.3. Description of the study area

The study was conducted in Dodoma Municipality at IRDP, CBE Dodoma campus, UDOM and SJUT. Through pilot study, it observed that, the real practice at institutions is that; management put much attention on cash management in the implementation of day to day operations and ignore about inventories simply because can't be stolen easily to compare with cash. It has been observed that some organizations use large amount of money in different production process due to materials shortage or to replenishment of loss items due to pilferages or damaged etc or to handle surplus materials due poor inventories management practiced. This simple analysis justify that, still inventories management practiced continued to be ignored in some organizations. Therefore IRDP, CBE, UDOM and SJUT was selected as the location for this study due to the following reasons;

First the area provided easy accessibility of information and data by providing opportunity to learn as specified by (Stake, 1998). Second the location provided proximity and convenience to the researcher as specified by (Kothari, 2004) and generally the area was expected to be information rich as justified by (Gall et al., 2005). To support this Krishna Swami and Rangathan (2009) defines an area of study as the territory to be covered by the study.

3.4. Population of the study

 Population can be defined as totality of items under considerations (Baradyana and Ame, 2005). Basically population is a group that contains same characteristics in relation to study issue. In addition to that (Joppe, 2000) population can be defined as

the total number of inhabitants constituting a particular race, class or group in a specified area. Moreover population is a group that consisting of things or individuals or elements which fit in a given specification (Michael, 2000). The targeted population of the study are higher learning institutions located in Dodoma region.

3.4.1 Sampling procedure and sample size

3.4.2. Sampling procedures

Kothari (2004) justified that a sample is a smaller group of subject that drawn from a given population whereby a researcher is interested for the aims of drawing conclusion of that population. On other hand Wellington (2000) defined sampling procedures as the process of estimates or generalization about a population based on information contained in a portion of the entire population. The researcher in the study employed both probability and non-probability sampling procedures in the selection of sample. In probability sampling a researcher used a simple random sampling while non-probability sampling procedures researcher employed purposive sampling to select middle level managers and other employees who dealing with inventories management practiced in organizations. A simple random sampling is when every member in a population has equal chance to be selected in a sample (Brayman, 2004).

3.4.3. The Sample Size

Sample is a subset of the populations (Baradyana and Ame, 2005) in additions to this (Babbie, 1992) defined sample size as the segment of population in which researcher is interested in gathering information and drawing conclusion. The study expected to have a sample of 60 respondents from four selected higher learning institutions since out of 60 respondents only 51 filled and returned their questionnaires due to different reasons which were 85% of the total selected and approached respondents among them , 18 respondents that are 35.3% were from PMU while the remained were from different users department. Respondents were selected based on opportunity to learn as justified by Stake (1998). Generally respondents from the selected area were as followed; CBE Dodoma campus out of 15 only 11 respondents fill and returned questionnaires as well as out of 15 only 12 respondents returned their questionnaires at SJUT while out of 15 only 13 respondents were return their questionnaires and all 15 respondents from Udom returned their questionnaires. Ary et al,(1996) Suggested that, in selection sample size, a researcher is advised to consider three important aspects namely the availability of population, methods of sampling to be employed and financial resources available for facilitation the whole study.

3.5. Methods of Data collection

 Aczel, (1999) mentioned that, data refers to a set of measurement or information obtains on some variables. Data can be primary or secondary, therefore (Patton, 2002) stressed that, primary data as the data observed or collected directly from first-hand experience while secondary data refers to the statistical material which is not

originated by the investigator himself or herself but obtained from utilized for any other purpose at some subsequent enquiry.

The study employed structures questionnaires, personal interviews and documentary reviewed in which both primary and secondary data were collected. Interviews were used to collect information from middle level managers specifically for clarification of different matters regarding inventories management practiced. For case of other employees, questionnaire was employed for data collection. In the study both primary and secondary data were collected as justified by Miles and Huberman (1994) mentioned that, both type of data can be productive for confirmatory, descriptive, inductive, as well as hypothesis – testing purposes. Due to the situation also observation methods was used. Secondary data were collected through visited various sources such as reports, magazines, books etc.

3.5.1 Structured Questionnaire

Questionnaire can be defined as a formatted set of questions both open and closed ended, that were drawn up to meet objectives of the study (Ary et al, 1985). In the study both open and closed ended questions were employed. The self administered questionnaire were prepared and distributed to the respondents for the purposes of obtaining information. Through this method more information were obtained from large number of respondents within short period of time.

3.5.2 Personal Interviews

Kothari, (2004) define interview as a data collection technique that involves oral questions to respondents. These provide a chance to a researcher to communicate face by face with respondents in which different issues were clarified and are flexible technique. During the study this techniques in one way or another enabled the researcher to get different clarification on issues regarded inventories management practiced in institutions from middle level managers and different employees who dealing with inventories management issues direct such as Estates officers and PMU members.

3.5.3 Documentary Review

This means data obtained from written form in both published and unpublished information such as fixed asset registers, ledger and other documented. These findings help to improve understanding of the studded subject.

3.6 Data analysis

In the study data were analyses both qualitatively as well as quantitatively, whereby in qualitative techniques data were analysed through comparisons process, pattern matching and explanations as justified by Miles and Hurberman, (1994). In quantitative data analysis techniques, data were analysed by using simple tabulations, count and proportion. After received responses, the questionnaires were checked for completeness and consistency and data obtained were tabulated, coded, and processed with the help of statistical packages for social science (SPSS).

3.7 Validity and reliability of data

Patton (2002) stressed that, reliability and validity are two most important quality control objects in research design. Therefore in the study multiple data collection was used in order to ensure the study is valid as well as reliable. The two terms are described as follows;

3.7.1 Reliability

Reliability refers to the consistency in which the repeated measures yield the same result across time and observer (Walsh, 1990). Also Ndunguru (2007), in other hand added that reliability refers to the question of whether a measuring instrument or process can produce the same results. During the study pilot testing was done as well as data were collected by used different techniques such as questionnaires, interviews and documentary reviewed in order to improve reliability in the study.

3.7.2. Validity

Validity is the process of measure in order to determine whether the instrument used to measure what is intended to measure. During the study validity of data were improved through pilot testing as well as methods employed in conduction the study such as structured questionnaire, personal interviewed and documentary reviewed as justified by Silverman (1993). According to Tabachnich (2007) validity is the degree to which study accurately reflect or assesses the specific concept the research is attempting to measure. Also in other way round Ndunguru (2007) added that validity of research results is to ensure if adequate physical and or statistical control is put in

place such as research measurement process produces accurate data. Therefore, validity means the process of measuring what he or she set out to measure.

3.8 Ethical Considerations.

A study clearance form was obtained from directorate office of Graduate studies at the University of Dodoma. On other hand, research permit was requested from higher learning Institutions that located in Dodoma Municipality for data collected process. Moreover the researcher asked respondents for consent on confidentiality through explained the important of the study as well as disclosed a research proposal and assured accessibility secrecy, privacy, anonymity before date collection process. Therefore the findings provided in this study assured protection of volunteers like protections of their identities, place of work, dignity and welfare to avoid unnecessary problems and worry.

3.8.1 Limitations of the study

Under this study the research faced a number of limitations such as shortage of fund, transportation and time limit factor since for that reason; it was very hard to conduct the study. It also difficult to move from one place to another for data collection due to transport problems since the researcher tend to use community buses to move from Dodoma town to the University of Dodoma about 8kms as well as from Dodoma town to SJUT which is about 7km from Dodoma town and 10km from Dodoma town to IRDP.

3.9. Summary of Chapter

This chapter elaborated different methods of data collection regarded inventories management in institutions. The study employed structured questionnaire, personal interviews as well as observation methods in which four higher learning institutions located in Dodoma Municipality were visited. In the study probability and non probability sampling procedure were used in obtaining sample size of the study. The obtained information were analysed qualitative as well as quantitative with the help of statistical tabulations and average as explained. The next chapter explains data presentation, analysis and discussions of findings of the study.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter presents the results of the study which were obtained from primary and secondary sources. The chapter starts by providing characteristics of respondents followed by discussion part of the main findings of the study based on research objectives as justified by Yin (1994).

4.1.2 Demographic Information

Under this section, the researcher intended to provide information about respondents who participated in the study and their institutions visited.

Furthermore the studies detailed about respondents characteristics which including Age, sex, working area working experience and education background. This information was obtained through questionnaires filled by respondents.

4.2 Respondents Characteristics

This part details all the profiles of respondents according to their participation in the study through filled and returned questionnaire based on age, sex, working area and education background. First the chapter details about the institutions selected.

4.2.1 Organization Profile

The data for this study was collected from four different institutions that located in Dodoma municipality namely:

Institute of Rural Development Planning (IRDP), Collage of Business Education Dodoma campus (CBE), St. Johns University of Tanzania (SJUT) and The University of Dodoma (UDOM)

4.2.1.1 The Institute of Rural Development Planning (IRDP)

This is corporate body established by parliament Act No.8 of 1980. The Act provides a legal frame work for the Institute to be established as an important national centre for provision of training, research and consultancy service in the field of rural development planning and Management with main objective of alleviating qualitative and quantitative of shortage of skilled manpower within the framework of sustainable capacity building directed towards reducing poverty and attaining sustainable development. The Institute strives to enhance and strengthen capacity for rural development practitioners by providing post secondary education and training, research and consultancy services. Generally IRDP is Multi-disciplinary and multi-sectorial institute empowered to oversee and Coordinate the provision of expertise to in-service personnel involved in rural development planning in the country. The Institute located at Miyuji area which is about 7 km from Dodoma Town along Arusha road.

Moreover the vision of IRDP is to be a centre of excellence for both academic and professional work in rural development planning and management for poverty reduction and sustainable development. The Mission of IRDP is To facilitate the process of rural development planning by providing training and education ,research and public service (consultancy) in rural development planning and Management aimed at bringing the knowledge gap among different practitioners of development planning in which include the central government sectors, local government authorities, non-governmental organization, community based organizations and the private sectors.

4.2.1.2 St John's University of Tanzania (SJUT)

This Institute was established in 2007. It was a multi-site university with its main campus in the city of Dodoma, the capital of Tanzania, and branches in DSM, Msalato, and the Dodoma Central Business District. It offers degrees and diplomas at undergraduate's level and there is growing research programmed.

SJUT established with the following vision statement to be a centre of excellence for developing human kind historically to learn to serve.

4.2.1.3 The University OF Dodoma (UDOM)

The University of Dodoma is a Public institution, established in March 2007 following the signing of a charter by a president of the United Republic of Tanzania. Responsibility of the University is to provide a service related to teaching and learning as well as knowledge generation through research and community service

.The University has been designed on a Campus college mode in which being semi-autonomous .Different from other it comprising of six colleges which are college of Education, College of Humanities and Socials sciences, Collage of Informatics and visual education, college of health sciences and Collage of earth science.

4.2.1.4 College of Business Education (CBE)

CBE Dodoma Campus was established in October 1983. The campus is located at Makole area along the DSM road adjacent to parliament buildings. There are seven academic departments which operate under campus Director. These departments include Graduate school, Accountancy, Business Administration, Marketing, Reviewed and special courses, Procurement and supply Management and Information and communication technology. All visited institutions are owned by either Government or private.

During the study a total of 60 questionnaires were distributed that was 15 questionnaires to each institution. A total of 51 questionnaires were filled and returned while 9 questionnaires were not returned due to different reasons as indicated in table 1.

Table 1: Distribution of Questionnaires

Name of Institution visited	Questionnaires Distributed	Questionnaires Returned	Percentages of return questionnaires
CBE DODOMA	15	11	73.3
SJUT	15	12	80
IRDP	15	13	86.7
UDOM	15	15	100
TOTAL	60	51	85

Source: Field Data, 2013

Note: Percentage in table 1 based on the total returned questionnaires out of the total distributed ones.

4.2.2 Age of Respondents

In the study, the results with regarded to the age of respondents as illustrated in table 2, showed that 80.8% of respondents through average method among four visited areas were between 21 years old to 40 years. In the other way round only few respondents which were 19.2% among the total are 41years and above. This finding indicates that, numbers of active employees in the study area were good since a large number of employees were youth.

Table 2: Distribution of Age among Respondents

Age Group	CBE		IRDP		SJUT		UDOM	
	Freq	Per	Freq	Per	Freq	Per	Freq	Per
21 and 40 years	9	81.8	11	84.6	10	83.3	11	73.3
41 and 50 years	1	9.1	1	7.7			2	13.3
51 and 60 years	1	9.1	1	7.7	2	16.7	1	6.7
61 and above							1	6.7
Total	11	100	13	100	12	100	15	100

Source: Field Data, 2013

Key   Freq = frequency

Per = percentage

4.2.3 Sex of Respondents

The sex distributions of respondents as shown in table 3 revealed that 32 employees who are 62.7% were male while 19 employees who are 37.3% were female. These results show that, the number of males employed in institutions exceeded the number of females. This result implies that, the number of females found should be increased comparing with the previous years in Tanzania specifically in service oriented institutions.

Table 3: Sex distributions of Respondents

Gender group	CBE		IRDP		SJUT		UDOM	
	Freq	Per	Freq	Per	Freq	Per	Freq	Per
Male	7	63.6	7	53.8	8	66.7	10	66.7
Female	4	36.4	6	46.2	4	33.3	5	33.3
Total	11	100	13	100	12	100	15	100

Source: Field data, 2013

4.2.4 Activity Categories of Respondents

In the study respondents were being categorized into two units which are from administrative officers who in one way or another have responsibilities of bringing in inventories from external supplies and another group was from different user departments. The study revealed that 23 among the total respondents of which 45.3% were from PMU while 28 respondents who are 54.7% were from user departments as shown in table 4. The administrative staff was observed to have exceeded academic staff due to the reason that mostly employees to manage or to supervise different administrative department which was large to compare with academic department were termed as academic staff. However in some Institutions PMU member found to be small, since the numbers of PMU should comprising an engineer, health specialist, and other member from purchasing department or section as stipulated in sect. 34 of PPA number 21 of 2004.

Table 4: Working area of respondents

Staff Category	CBE		IRDP		SJUT		UDOM	
	Freq(n)	%	Freq(n)	%	Freq(n)	%	Freq(n)	%
Academic Staffs	6	54.5	5	38.5	5	41.6	7	46.7
Administrative Staffs	5	45.5	8	61.5	7	58.4	8	53.3
Total	11	100	12	100	12	100	15	100

Source; Field data, 2013

Table 5: Education level of Respondents

Education Level	CBE		IRDP		SJUT		UDOM	
	Freq(n)	%	Freq(n)	%	Freq(n)	%	Freq(n)	%
Secondary	-	-	-	-	-	-	-	-
Certificate	-	-					2	6.7
Diploma	1	9	3	23	1	8.3	1	6.7
Degree	5	45.5	4	31	6	50	4	26.7
Masters	5	45.5	6	46	4	33.3	8	53.2
PHD	-	-	-		1	8.3	1	6.7
Total	11	100	13	100	12	100	15	100

Source: Field data, 2013

4.2.5 Education level of Respondents

As revealed from table 5, a large portion of respondents involved in study was master's degree holders which is 44.6% of the total respondents while 38.3% among the total respondents are bachelor degree holders and the rest were diploma and

certificates who are 10.6%.The research results indicates that a large number of respondents in the study were well knowledgeable regarding to their work performed within the institutions.

4.3. Discussion of Finding

This part detailed all the findings and discussion based on the data obtained. During the process of analysis, objectives and research questions were employed as a basis for guiding the presentation.

4.3.1. Methods of maintaining Inventories in Institutions.

This is the first objective of the study in which the researcher aims to determine the system employed by organization in managing their inventories. First the researcher starts to examine the availability of inventories in required quality, quantity and at reasonable time. Among the total respondents who asked about the availability of right quality in institutions, 72.8% of the total respondents got satisfied with the quality of inventories available in institutions is good and 24.7.% of the respondents were not satisfied with the quality of inventories available as observed in table 6

Table 6: Satisfaction on Quality of inventories available in institutions

	CBE		IRDP		SJUT		UDOM	
	Freq(n)	%	Freq(n)	%	Freq(n)	%	Freq(n)	%
Satisfied	8	80	9	71.8	9	75	9	64.3
Not satisfied	2	20	2	18.2	3	25	5	35.7
TOTAL	10	100	11	100	12	100	14	100

On the other hand, there was an availability of good number of respondents who asked about the right quantities of inventories in institutions, 67.3% of these respondents declared that, the inventories available were not enough to meet the customer's requirements. Through observation some of the employees found to share office rooms and computer while others employees share office facilities like tables, chairs, printers etc and on the other hand some middle managers share motor vehicles. However 32.8% of the total respondents said that the availability of inventories for different operations was enough as tabulated in table 7.

On the other hand finding showed that, some of the inventories were obtained under late delivery since most of the respondents asked for the availability of inventories when required, 66.3% declared that most of the time items were not delivered at right time, while 33.7% agreed that the items for different activities were readily available when they were required as tabulated in table 7.

Table 7: Satisfaction on Quantities of inventories available in institutions

	CBE		IRDP		SJUT		UDOM	
	Freq(n)	%	Freq(n)	%	Freq(n)	%	Freq(n)	%
Satisfied	6	54.5	2	18.2	3	25	4	33.3
Not satisfied	5	45.5	9	81.8	9	75	8	66.7
TOTAL	11	100	11	100	12	100	12	100

Table 8: Satisfaction on Delivered Time of Inventories available in Institutions.

	CBE		IRDP		SJUT		UDOM	
	Freq(n)	%	Freq(n)	%	Freq(n)	%	Freq(n)	%
Satisfied	8	80	2	18.2	2	16.7	3	20
Not satisfied	2	20	9	81.8	10	83.3	12	80
TOTAL	10	100	11	100	12	100	15	100

Source: Research finding, 2013

To know the common inventory management techniques used by the institutions, the respondents were asked to give their opinion, 39 respondents which is 81.2% agreed and strong agreed that MRP was commonly used by their management in managing inventory where by every supervisor in institutions required to bring inventory requirements for their departments specifically for the coming year. In the other hand 9 respondents which are 18.8% were neutral position and none of respondents disagreed or strong disagreed.

In addition to this, 22 respondents which are 53.7% agreed and strong agreed that JIT techniques was commonly employed by management in managing their inventories in institutions while by combined strongly disagreed and disagreed as disagreed 11 respondents which are 29.3% were disagreed that JIT techniques was common used by management as inventory managing system and 7 respondents which are 17.1% were at neutral position. Furthermore 21 respondents which are 58.3% were agreed and strongly agreed that ABC control technique system was commonly used by their

management in managing inventory specifically for consumable items which are the one used in daily operation such as A4 plan paper cell open white board markers e.tc while through combined strongly disagreed and disagreed as disagreed 7 respondents which are 16.7% were disagreed that fixed ordered quantity system was common used by their institution's leaders and 9 respondents which are 25% were at neutral position. Also none respondent agreed and strongly agreed that fixed quantity system was commonly employed by their institution's leaders while 19 respondents which are 54.3% were disagreed and 16 respondents which are 45.7% were at neutral position.

Moreover 5 respondents which are 13.2% were agreed and strongly agreed that cyclic ordering quantity system was commonly used by institution's management in managing their inventory while 21 respondents which are 55.3% were disagreed and strongly disagreed and 12 respondents which are 31.6% were at neutral position.

Generally the findings show that, most of instruction's management use MRP techniques, JIT Techniques and ABC inventory control system in managing their inventories to meet instructions objectives. However the results furthermore show that fixed quantity ordering system and cyclic inventory control system are not commonly employed by management in managing their inventories as summarized in figure 2.

Figure 2: Common inventory Management Systems Employed in Institutions
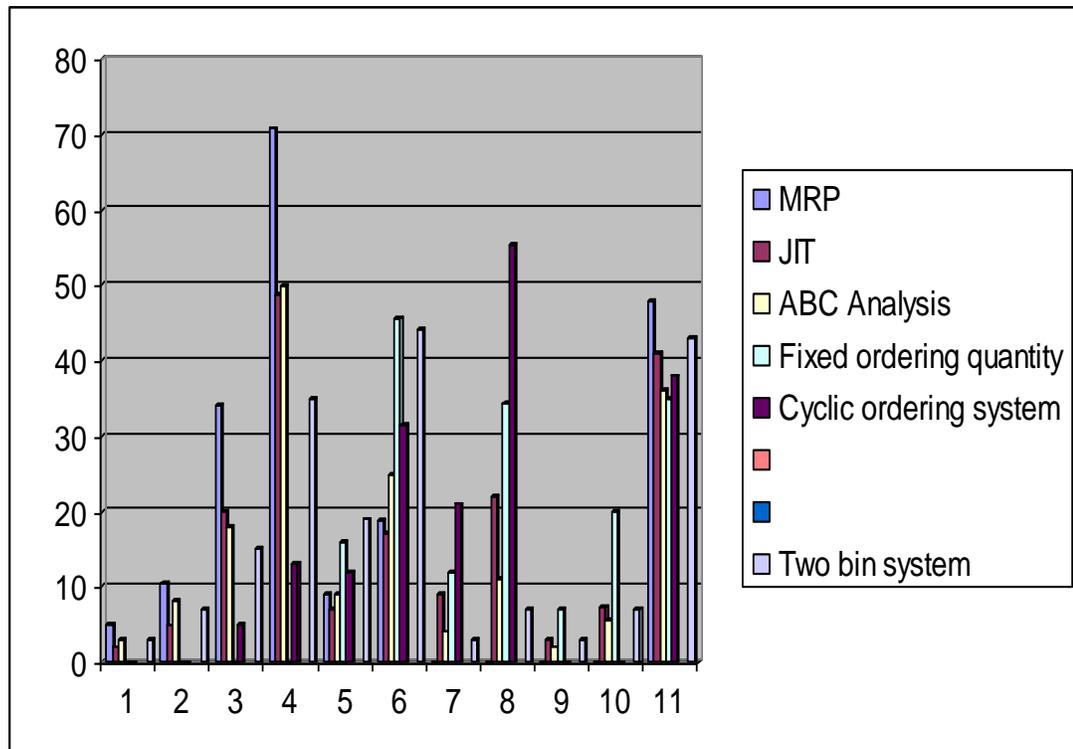
Source: Research findings, 2013

Note that:

1 stand for strongly agreed, 2 stand for agreed, 3 stand for neutral 4 stand for disagreed and 5 stand for strongly disagreed

However through personal interview and documentary review, the researcher discovered that some institutions managing their inventories though the stock

reviewed both perpetual and periodic while other managing inventories through both MRP and JIT material control system. Through inventories, reviewed techniques both continuous and periodic help the institutions to identify actual demand of inventories, loss of inventories and the inventories to be either maintained or sold due to damage. In addition to that, materials requirement planning (MRP) technique was employed to determine the total number of inventories required to accomplished a project and JIT applied specifically in cases of emergency purchased specifically for those items which were not stored such as fuels and spare parts and other building materials especially in case of replacements.

4.4. Discussion of the Results

As revealed from the results that, inventories available were not enough in terms of quantity due to insufficiency funds to purchase the required quantity since some of the institutions depended on Government subsidiaries and internal sources such as tuition fees etc which were not enough. Other reasons of materials shortage were due to poor supervision of the available inventories as result of loss due to privileges and damages whereby some items were being misused and misallocated. On the other side most of materials were delivered late due to the reason that most of the large suppliers located In DSM and other areas out of Dodoma Municipality whereby sometimes the leading time was exceeded from the arranged one. During the study 67.3% of the total respondents declared that materials were not enough to correspond to the number of items required while 66.3 % stressed that most of the time items

available under late delivery when needed hence one respondent had these comment during the study by said that

"*Items were not enough as you see sir, we are two officers in one office not only due to sharing a one computer but also we share office table*"

Another added that

"*It happened that sometimes different tests were conducted by using projector due to lack of tonner and cartilages for printing*".

4.5 Security measures against loss of inventories in institutions

Security measures against any loss of inventories in institution is one of the important aspects to protect loss due to privileges, damages, obsolescence and any other form of loss both internal and external surrounding. In examined security measures against loss of inventory in institutions, the results from respondents indicated that there were good securities system available against any loss within the institutions such as availability strong security guard to protecting the area, strong grill for all doors as well as to the windows of storehouses and to those rooms which were used to store valuable items, availability of fire extinguishers and fire fighters items to protect institutions against loss due to fire eruption and prohibition of any persons rather than the office bearer who may enter into the institutions area especially storehouses without permission or being authorized. Among the total respondents asked, 84.1% agreed that the security were good while 15.9% of the total respondents declared that security availability were not enough. Through

observation, interview and documentary review the researcher discovered that, some items like computers, plastic chairs, machines like water pumps, electric items like reading meter, main electric supplier machines, doors that cost a lot of money were stolen. On the other hand some of the employees don't know how to use fire extinguishers and other fire fighter machines were under poor supervision regarding to the security system.

Table 9: Security Measures against loss of Inventories in Institutions

	CBE		IRDP		SJUT		UDOM	
	Freq(n)	%	Freq(n)	%	Freq(n)	%	Freq(n)	%
Good	11	92	11	91.7	9	81.8	10	71.4
Not good	1	8.3	1	8.3	2	18.2	4	28.6
Total	12	100	12	100	11	100	14	100

Source: Research findings, 2013

4.6 Discussion of Findings

The results revealed that security measures were not bad but need to be improved in some areas. Generally security guardsmen in some location were not enough as compared to the area guarded example a building with four out let being guarded by two or three as a result some of the items got lost due to privileges or damaged as reported. Also through lack of strong supervision like computer application or even manual control etc whereby some of guardsmen were not well reported to their guarded locations hence the risk of loss increased.

49

Therefore institutions should improve their security system employed and security guarded should be well supervised as mentioned by Bagby (2004) that, institutions should employ security system in such a way that inventories will be safe guard against pilferages as well as unauthorized uses of items.

4.7 Challenges Facing Institutions on Inventory Management Practices

The last objective of the study was to identify major challenges facing the institutions in implanting inventory management system. Through considering the historical background of management related to inventories management practiced, it has been noted that management put much attention in cash management than inventory management. This being the case, respondents were asked to give their opinion on the factors that hinder application of inventory management system. Respondents mentioned four main factors, namely: insufficient funds, lack of training and development, lack of stock control unit, and lack of computer applications. These factors are discussed as follows,

(a) Unavailability of enough Funds.

Respondents both employees and management declared that, institution operations depends on the availability of fund from Government subsidiaries and internal sources which are tuition fees which are not enough to buy everything at one time.

Therefore institutions tend to budget their operations according to the order of preferences. In regard to these challenges, one respondent had this to say:

"It's true that, sometimes we face shortage of resources due to insufficiency of fund".

(b) Training Provision

Generally findings from respondents argue that, there is no provision of any training regarding to inventory management. Training is very important since as technological change there were new insights that need employees to be trained in order to cope with those change. Through this, one respondent had this to say:

"Since I was employed, I have never attended any training about inventories".

Another respondent had this comment regarding to challenges facing inventory management practiced in institutions:

"We have fire extinguishers and other fire fighting tools in every area but how to use them is still a problem to many people here"

(c) Stock control unit

This unit is very important hence among these, is responsibility which was to control movements of all items within the organizations and ensuring all items recorded was accurate and up to date. Through observation and interviewing methods, some institutions lack this unit it results to poor control of items and material shortages occur most of the time.

(d) Lack of computerized system

Through observation, personal interviewing and document reviewing, researcher discovered that computer application was not employed in the process of managing inventories. In regard to these challenges, one respondent had this to say:

"Already computer programs for managing inventory were installed in our computer so we expect to apply this software very soon".

4.8 Summary of Chapter.

The chapter presents the presentations, analysis and discussion of results related to the study. Actually the presentations and the analysis of the results were organized basing on specific objectives addressed in this study. The study discovered that inventory management practiced in higher learning institutions were well practiced but facing some challenges such as lack of sufficient funds for purchasing items when required as a results of this shortage of items not available at the right time and some of them being available under late delivery, lack of training and development regarding to inventory management practice, as well as lack of stock control units to some institutions and lack of computer application related to inventory management practice. The next chapter presents the summary of study, conclusion, recommendations and area of future research.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

This research was intended to assess inventory management practiced at institutions in Tanzania. More specifically, the researcher aimed at evaluating different ways or methods that are employed in institutions to ensure that inventories were readily available for different operation at reasonable cost in institution, to examine different securities system employed against any loss due to privileges, damages, or any other reasons and to evaluate different systems used by institutions in Tanzania in managing their inventories. Therefore this chapter shows a summary of study, conclusion of study, and finally the chapter winds up with recommendations to management as well as the areas for future research.

5.2. Summary of the Study

In the following part, there is a presentation of the major findings in the study. The summary is organized basing on the data presentation and analyzed in chapter four.

5.2.1. Availability of inventory ion organization

It has observed that the inventories are very important to smooth organization performance at minimum cost as well as to meet the required objectives. The results show that inventories were well available when required to in organization specifically in term of quality but were not well available in term of quantities and

right time because most large suppliers to supplies different items were readily available in DSM and so on . On other hand most organizations employing MRP and JIT techniques in managing their inventories which is not bad but the researcher identified that some of materials shortage due to lack of enough information lead to mismanagement of inventories in organization.

5.2.2   Securities Measure against Loss of Inventories in Organization

Findings from the study showed that security system employed were good since most institutions got good security systems against any loss of inventories such as availability of good and strong security guard to guarding all surrounding environment of institutions as well as availability of strong grill along the doors and windows of store rooms as well as other offices that kept valued items. On the other hand, other findings detailed that, most of the higher learning institutions visited employed stock taking process to identify the actual number of items within institutions, damaged items, stolen ones (if any) or any discrepancy regarding to inventory availability whereby through these institutions will identify which item needs to be replaced, to be sold, to be maintained and so on. However these systems were conducted manually since most institutions reported that computerized system was in the process.

However, some of them raised a doubt that these systems were required to be improved by make sure there are well continuous supervised since through observation, the researcher identified that in some area got one security guard men instead of two while in another area guards men were do other activities such as car

washes and so on when they are on duties as a result some loss may occur due to such laziness example there were reported cases of some loss due to privileges and others. On other hand some loss occurred due to misused some items example some of them sit on the top of table as a result to damage and in some organization movement of items were not well control due to lack of stock control unit. Moreover, perceptions' of employees towards security systems employed are positive since large number of respondents argued that, the systems were good but, needs some improvement such as strong supervision as well as provision of knowledge regarding to the operation of different items such as fire fighters items such as fire extinguishers etc.

5.2.3 Challenges of Inventory Management System Practiced in Organization

The results from analysis indicate different challenges regarding to inventory management practices as followed:-

(a) Insufficient funds whereby through personal interview a large number of respondents specifically middle manager said that inventories shortage most of the time occurred due to insufficient fund available as a result some employees tend to shared chairs, tables, rooms, computer and the like.

(b) Lack of training and development since as we have seen from the data analysis, a large number declared that, there were no training provision regarding to inventory management aspects as a which may lead to improper usage of some items resulted.

(c) Absence of stock control unit specifically to control movement of inventories within and outside the organization as we seen from data analysis that some items were misallocated due to poor control of their movement that may lead to improper record and so on.

5.3. Conclusion

This study mainly assessed the inventories management system in organization and inspected whether the inventory management system adopted help the organization to have right quantities of inventories that available within the reasonable time and at right quality and at reasonable operational cost. Research results showed that the availability of inventory are good in term of quality but not in term of quantities and most of the time inventories needed were delivered under rate delivered due to different reasons such as lack of enough fund for purchasing process, poor coordination, allocation of supplies within the region and poor expediting specifically of administrative officer in reminding supplies section regarding their requirement. On other hand the study show that most organization employing MRP for replacing planning materials and JIT technique when they need to replacing materials under immergence basis.

However further results showed that securities system were not bad but need some improvement since some loss inventories were reported due to pilferage and damage specifically due to poor control as well as due to short number of guards men to protect inventory from theft corresponding to their guarding area example one building that have more than three outlet door protected by only two guards men

which is not good, but in some area guards men do other activities such as car wash etc when they on duties therefore some close supervision needed. Also in organization there are good fire fighting items such as fire extinguishers and other machine but not all employees know how to operate them, therefore management needed to arrange training regarding securities matter.

Moreover the results show that most of organization facing the following challenges regarded inventory management system practiced such as lack of enough fund, lack of coordination among department which lead to inventories shortages as a result mis management resulted. On other hand the result show that some organization facing a lot of challenges in managing their inventories due to lack stock control unit or section as a results some organization fail to coordinating stock control exercise, to manage materials discrepancy general management of their inventories become very difficult task. Also another big challenge is lack of training provision regarding inventories management to their employees in organization and inventory management system were manual practiced which are very dangerous specifically in case of loss in those stored data.

5.4. Recommendations

The study provides different contribution to current theory and knowledge. This study first gives new indignant about inventory management practiced by assist us to have positive thinking towards inventory management practices by providing its importance in institutions performance. Moreover, this study act as a catalyst to promote and stimulate other researchers to conduct more studies that could answer

some questions which have not been answered in this study. This study provides recommendations specifically managerial recommendations as follows.

5.4.1. Managerial Recommendations

Managements are advised to established good materials required as well as to set aside a budget for required materials whereby through good coordination among users department will make inventories readily available within reasonable time, right quality and right quantity as specified in PPA 2004.

Managements are advised to make emphasis also in inventory management since inventories represent money in terms of assets through establishing different training regarding to proper usage of items such as on how to use fire extinguishers and so on as well as improved security supervision to make sure that security guards are well located and performs their work accordingly.

Also institutions should established stock control unit within PMU to coordinated stock taking exercises and general control different movement of items within outside institutions plus general duties of making sure that all stock records are updated.

Management should emphasize usage of computer application software such as bar code system, vote book manager and so on for effective and efficient inventory management practice in institutions as stressed by Bagby (2004) that, inventories and accounting activities should be computerized systematically so as to attain the desired level of accuracy.

5.5. Area for further research

The following areas are well focused for future studies;

(a) Research should be conducted to determine different factors that hinder effectiveness of inventory management in institutions.

(b) The same study be conducted by use of survey method for an intention of obtaining more findings in institutions.

(c) Since inventories cover wide areas, therefore study will be conducted regarding to application of Inventory management techniques towards effective inventory management in institutions such as JIT, MRP, ABC Analysis and others.

(d) Research should also be conducted to assess computerized application toward effective inventory management in Tanzania.

5.6. Summary of chapter

This chapter comprises of the summary of the whole study, conclusion as well as recommendations based on results and winded up by providing areas for future research to other scholars.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE FOR THE MANAGEMENT AND EMPLOYEES WHO ARE RESPONSIBLE FOR INVENTORY MANAGEMENT ASPECT IN INSTITUTION.

Section A: Introduction

I am from University of Dodoma carrying out research with objectives to understand

inventory management in Institutions. The purpose is to get knowledge and

understanding from inventory department on various issues.

This will enable the researcher to identify various issues in inventories management.

I seek your kind cooperation in this information in this regard.

You are assured that, this information will be used strictly for academic purposes.

Section 1 SOCIAL-DEMOGRAPHIC BACK GROUND

1.1 Activity area……………………………………………………………………

1.2 Designation…………………………………………………………………….

1.3 Principal function………………………………………………………………

1.4 Name of organization……………………………………………………………

1.5 Age of respondent

Age of respondent	Under 20	21 -40	41 -50	51 -60	Above 61

1.6 Gender of Respondent

    1 Male ( ),   2 Female ( )

1.7 Education Level of Respondent

Educational background	O' Level	A' Level	Certificate/ Diploma	Graduate Level	Post Graduate Level/PHD

1.8 A Kindly tick the right answer regarding the following questions

Do you currently attend any other training regarding inventory management?	Yes	No

Do you satisfied with the quantity of Inventory available at your Institution?	Yes	No
Do you satisfied with quality of inventory available within your Institution?		
Did your Institutions adopt Inventory Management System?		
Did the user department complain about service delivered?		

1.8 B if the answer from the above questing is yes what is causative of such complains tick the right answer

Materials shortage   (   )

Low quality items   (   )

Section 2 Kindly tick the right answer from the following

What are your sources of inventories?	Director Imports	Local Source	Control Depot	All specified sources
Where does inventory control actions originate?	Accounts Department	Central Warehouse	Merchandise Controllers	Others specifies
What system of inventory control does your organization operate?	Fixed Order system	Cyclical Ordering System	All system specified	Other (Specify)
What tools do you use to maintain effective inventory records?	Inventory records	Inventory models	Computer	All of the specified
Who is responsible for decision making on the issue of quality, quantity and price of the stock to be purchased?	Stock verifiers	Purchasing Officer	Chief Store Officer	All of the specified
What purchasing policy does your deeps your departments adopt?	Bulk purchase	Unit purchase	Piece purchase	All of the specified

Section 3 Please tick the right answer from the following questions;

Which form of stock taking do you engage in?	Perpetual or Continuous	Periodic	All of the specified
There occurrence of stock out of any item or items at your storehouse	Yes	No	I don't know
Stock record are updated	Yes	No	I don't know

3.2 Kindly tick the right answer from the following

There is good protection of inventories against any loss at your institutions employed?	Yes	No
The number of guardsmen available to guard institution is enough to compare with the guarding area?		
There are good security system employed in your Institutions against of inventories		
Do you experience any loss of inventories at your Institutions?		

3.3 Please tick the right answer from the following questions;

Did your organization involved in un plan purchasing process?	Yes	No
Do you have an Inventory Control Unit?		
Do you keep any ledger book for proper accountability?		

SECTION 4

1. What are the Challenges facing by your in employed inventory Management System? Please mention at least four

   (a)………………………………………………………………………………….

   (b) …………………………………………………………………………………

2. Due to challenges mentioned above, please give your suggestion on how to deal with them in order to rescue situation.

   (a)………………………………………………………………………………

   (b)………………………………………………………………………………

QUESTIONS ON INVENTORY FOR STORES OFFICERS

1. What tracks inventory availability?

2. Who manages inventory, and how do they manage inventory surplus?

3. What happens to damaged and stolen inventory?

4. What is the process for alerting the purchasing agent that more inventories should

   be   ordered?

5. Is there a feature within the inventory system that alerts the user if inventory levels

   are below or above certain levels?

6. Who has access to inventory after hours, and who locks up inventory?

7. What kind of security is maintained for the stores?

APPENDIX 2: QUESTIONNAIRE FOR THE EMPLOYEES

Section B: Introduction

I am from University of Dodoma carrying out research with objectives to understand inventory management in Institutions. The purpose is to get knowledge and understanding from inventory department on various issues.

This will enable the researcher to identify various issues in inventories management.

I seek your kind cooperation in this information in this regard.

You are assured that, this information will be used strictly for academic purposes.

Section 1 SOCIAL-DEMOGRAPHIC BACK GROUND

1.1 Activity area…………………………………………………………………………

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Age of respondent	Under 20	21 -40	41 -50	51 -60	Above 61

1.6 Gender of Respondent

   1 Male   (   ),   2 Female (   )

1.7 Education Level of Respondent

Educational background	O' Level	A' Level	Certificate/ Diploma	Graduate Level	Post Graduate Level/PH D

Section 2 Kindly tick the right answer from the following questions

	Yes	No
Do you currently attend any other training regarding inventory management?		
Do you satisfied with the quantity of Inventory available at your Institution?		
Do you satisfied with quality of inventory available within your Institution?		
Did your Institutions adopt Inventory Management System?		
Do you use a computerized inventory management system?		

Section 3 Kindly respond to the following questions by tick the right answer:-

S/N	Factors	Responses				
		Strongly Disagree	Disagree	Agree	Neutral	Strongly Agree
1.	The amount of items obtained from store house when required is enough.					
2	The items obtained from storehouse are the right one in term of quantity and quality					
3	Materials for production purpose are available when required					
4	The process of requesting item from stores house are manageable					
5	It is possible to access items					

Section 4A Willingness of users department in Inventory Control aspect

Are you inspect the items received from store If yes, what are reasons		Yes	No
If No, what are reasons		Yes	No
Do you have any register to controller items movement? If yes, what are the measures used to improve issuance			
Do you get any training concerning with inventory management in your organization?			
Do you experience items shortage at your organization?			
If yes what is reason for?			
Do you think that the organization takes initiative to improve the issuance of inventory			
If no how do you understand the actual demand of the requested items			
There is good protection of inventories against any loss at your institutions employed?			
The number of guardsmen available to guard institution is enough to compare with the guarding area?			
There are good security system employed in your Institutions against of inventories			
Do you experience any loss of inventories at your Institutions?			

Section 4B

1. What are Challenges facing by your in employed inventory Management System? Please mention at least four

   (a)……………………………………………………………………………….

   (b)………………………………………………………………………………

2. Due to challenges mentioned above, please give your suggestion on how to deal with them in order to rescue situation.

(a)………………………………………………………………………………

(b)………………………………………………………………………………

Thank you very much for corporation