ADDIS ABABA UNIVERSITY

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT

ASSESSING PERFORMANCES OF PHARMACEUTICAL STORE MANAGEMENT: THE CASE OF GENERAL PUBLIC HOSPITALS UNDER THE ADDIS ABABA CITY ADMINISTRATION HEALTH BUREAU, ETHIOPIA

BY: TESHOME AYELE

JUNE, 2019

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A THESIS TO BE SUBMITTED TO ADDIS ABABA UNIVERSITY COLLEGE OF BUSINESS AND ECONOMICS SCHOOL OF COMMERCE FOR FULFILLMENT OF THE MASTER'S DEGREE IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT, ADDIS ABABA

BY: TESHOME AYELE

ADVISER: TARIKU JEBENA (PhD)

JUNE, 2019
ADDIS ABABA, ETHIOPIA

Declaration

I, the under signed, declare that this thesis entitled "Assessing Performance of pharmaceutical store management: the case of General public hospital under the Addis Ababa City Administration health bureau", is my original work and to the best of my knowledge has not been presented for a degree by any other person, and that all the sources of material used for the thesis have been duly acknowledged.

Declared by:

Teshome Ayele Aerega

_____

Date & Signature

Statement of Certification

This is to certify that the thesis carried out by Teshome Ayele on the topic entitled: "Assessing Performance of pharmaceutical store management: the case of General public hospital under the "Addis Ababa City Administration health bureau" is his original work and is suitable for submission for the award of Masters of Art Degree in Logistics and Supply Chain Management.

Advisor

Tariku Jebena (PhD)

_____

Date & Signature

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This is to certify that the thesis carried out by Teshome Ayele Aerega, entitled: "Assessing Performance of pharmaceutical store management: the case of General public hospital under the "Addis Ababa City Administration health bureau" and submitted in partial fulfillment of the requirements of t Master of Art in Logistics and Supply Chain Management complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Approved by the Examining Committee:

Tariku Jebena (PhD)		
Advisor	Signature	Date
Internal Examiner	Signature	Date
External Examiner	Signature	Date
Chairman	Signature	Date

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List of Abbreviations and Acronyms

AACAHB	Addis Ababa City Administration health bureau
CSF	Critical Success Factor
EHTG	Ethiopian Hospital Transformation Guidelines
IPLS	Integrated Pharmaceutical Logistic System
IT	Information Technology
KPIs	Key Performance Indicators
KRI	Key Result Indicator
SCM	Supply chain Management
SCS	store control systems
SMS	Store Management system
SPSS	Statistical package for social science
WMS	Warehouse Management Systems

Abstract

This research study provides an introduction to pharmaceutical store management, performance assessment and metrics or key performance indicators based on the most recognized literature. The study has employed census survey to quantitatively and qualitatively assess the store of the hospitals because it has holding small number of the total population. Questionnaire was used as the official instrument of data collection. A total of 120 questionnaires were distributed and 97 of them were filled and returned to make the response rate about 80.8%. The findings of the study suggested that all the dimensions of pharmaceutical store performance have statistically significant result. Generally, the study findings have suggested that the pharmaceutical store performance is approximately moderate in the case of Addis Ababa City Administration Health Bureauhospital in terms of the six key performance indicators. It has also discovered that, among the six key performance indicator, assessment of the pharmaceutical store performance based on dimension Inventory management is comparatively in a better position in the hospital store. However, their expectation Addis Ababa government hospitals pharmacy exert relatively lower efforts in Storage condition dimension, and Security & Safety dimension store performance. The study advocated that a lot of emphasis need to be directed to Storage condition, and Security & Safety indicator in order to achieve for improved storage condition area and Security & Safety, consequently improving the organizational performance as a whole and increasing the quality of drug.

Keywords: pharmaceutical Store, Performance, Performance Measurement

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the study

Store is a key component of the supply chain for health commodities. This is especially true in resource poor environments where they act as buffers against uncertainties and breakdowns within the supply chain. When properly managed and appropriately stocked, the store provides a consistent supply of products as they are needed. store management importance to overall cost, customer satisfaction, and performance of the organization. In turn, organizations involved in public health in the developing world have started to focus more attention on commodity storing, realizing its role as a critical resource for improving public health (USAID, 2005).

Store activities are not as such simple as traditionally known sets of store activities like receiving of stocks, hold them and issue when they are needed rather understanding of store efficiency and the related factors that affects the ability of store performance and meets the maximum service level provided by the company (Per Axelsson & Jonathan 2014).

Performance measurement is the process of quantifying the efficiency and effectiveness of an action or activity. The purpose of performance measurement is to find out whether things are going the right way and, if not, to find what the causes that generated a poor performance were. After this step, there have to be found solutions for improving performance (Neely, Gregory, Platts, 1995: 86 – 146). The main instruments for assessing performance are performance indicators, also named key performance indicators. They are specific characteristics of the process which are assessed in order to describe if the process is realized according to pre-established standards.

The increasingly acceptance requires organization to improve their logistics performance. One of the important component in logistic performance is store performance. Good store performance will improve inventory management performance, Layout & Operations

Capacity, store Equipment & Storage, special storage, security and safety and reduce cost in logistics system (Marco and Mangano, 2011).

The organization conducts the performance assessments to identify whether the operation was performed according to the stated objectives and to find out reasons for poor performance in order to be able to make adjustments in time. There are many reasons for conducting the performance assessments," for improving performance, for avoiding inconveniences before it's too late, for monitoring storage condition, for process and cost control and for maintaining quality" (Ackerman, 2003).

1.2 Statement of Problem

Assessing performance of pharmaceutical store management helps to identify success and draw backs of its service, and to improve its performance. Adequate research in performance of pharmacy storage has been largely ignored (Johnson & McGinnis, 2010). Performance assessment and metrics have also been considered to be a complex matter, and operating the measurement is often inadequately understood followed by weakly formulated definitions of what to be assesses (Melnyk, Stewart, & Swink, 2004).

The national pharmaceutical supply system reform has given rise to the designing of an Integrated Pharmaceutical Logistic System (IPLS) as primary mechanism to ensure the quality of inventory, inventory control, customer satisfaction and continuous availability of quality assured essential medicines at all public health facilities in Ethiopia.

Store Management is a back bone as the component of supply chain management (quantification, procurement and distribution), and a failure in the system leads to the failure of the whole supply chain management (SCM) process. The field of SCM, specifically modern pharmaceutical store management is relatively new to Ethiopia. There is also shortage of research and documented evidences that sufficiently depict the performance of pharmaceutical store management. The existing very limited research works hadn't comprehensively examined performance of pharmaceutical store management in Ethiopia through the use of explicit dimensions and corresponding assessments. Until just a few years ago, Ethiopia's health system struggled with inadequate supply of quality and affordable medicines, poor storage conditions, and weak

stock management, resulting in high levels of waste and stock out. Also the healthcare supply chain in Ethiopia has suffered from weak systems with limited data visibility which result in wastage, stock outs, and poor health outcomes (Berhane, 2017).

Addis Ababa City Administration Health Bureau (AACAHB) supervises and assesses all hospitals and health centers every year based on the Assessment Tool for Operational Standards of the Ethiopian Hospital Transformation Guidelines (EHTG). But this EHTG has not assessed or examined deeply Pharmaceutical store performance. However, routine monitoring of pharmacy annual reports shows that poor storage condition and distribution systems, as well as week stock management (AACAHB annual report, 2016).

The above information initiated to the researcher to investigate performance of pharmaceutical store management in General Public hospitals of Addis Ababa City Administration Health Bureau through scientific methods of research. Performance of store management can be assessing through several dimensions. According USAID (2005) this study, however, focuses on five most frequently used key dimensions of performance. The five categories of performance assessment include inventory management performance, Layout & Operations Capacity, Store Equipment & Storage, storage condition and security and safety. In each category, we defied the metrics, gave a formula, and described the purpose and issues related to the metric, as well as the sources to obtain data for the metric and requirements for the data. To help relate the five metrics back to the store assessment, they have been organized to match the categories reviewed in the assessment.

Assessing Performance of pharmaceutical store management in terms of the above five performance indicators has been carefully assess based on theoretically accepted standards and in the context of our country. In light of these key variables, appropriate basic and specific questions of investigation will be developed and properly analyzed. Then, based on the findings, the researcher will offer practical recommendations to fill the gaps and to improve performance of pharmaceutical store management in government hospitals of Addis Ababa City Administration Health Bureau.

1.3 Research Question

1. What is the performance of AACAHB pharmacy store layout and operational capacity?
2. How are government hospitals of Addis Ababa City Admiration performing in fulfilling infrastructure, equipment's and good space utilization and allocation?
3. What is the performance of AACAHB pharmacy store inventory management?
4. What storage conditions are present in AACAHB government hospitals pharmacy store?
5. What is the strength security and safety of the government hospitals in Addis Ababa city administration pharmacy store?

1.4 Objective of the Study

1.4.1 General Objective

The general objective of this study is to assess the performance of pharmaceutical store management in government hospitals of Addis Ababa City Administration Health Bureau.

1.4.2 Specific Objectives

1. To determine the layout and operation capacity of store in the government hospitals of Addis Ababa City Administration Health Bureau.
2. To assesses infrastructure, equipment's and space utilization and allocation of store in government hospitals of Addis Ababa City Administration Health Bureau.
3. To assesses inventory management in the government hospitals in Addis Ababa City Administration Health Bureau.
4. To assesses storage condition of the government hospitals of Addis Ababa City Administration Health Bureau.
5. To assesses security and safety of store in the government hospitals of Addis Ababa City Administration Health Bureau.

1.5 Significance of the Study

The study provides to develop the body of knowledge in the importance of assessing performance of pharmaceutical store management and to suggest concerned pharmacy case team head and store managers of the hospital take decision about improving the performance of the store. Moreover, the study provides the hospital to make some change based on the result of this study and to understand how those performance indicators affects store performance and It is also having academic contribution by adding empirical evidence to the existing body of knowledge on store management for Hospitals. Furthermore, it also provides for researchers, academics and students reliable data about store management performance assessment.

Managing pharmacy store is a strategy to enhance the smooth flow of commodities and prevent frequent stock outs of critical items that could hinder continuous provision of quality health services. Its effective performance is crucial for the government to produce the intended outcome in health care provision. Hence follow up of its performance as well as filling the gaps identified during performance is the concern of performance including FMOH.

1.6 Scope of the Study

This study is referring to assess the Performance of pharmaceutical store management of Addis Ababa City Administration Health Bureau hospital pharmacy. The operationalization and assessment of pharmaceutical store performance is made on the bases of five dimensions, namely Layout & Operations Capacity, Store Equipment & Storage, Special Storage, Inventory Management, and Security & Safety. As such, the findings of this particular study are to be generalized Addis Ababa City Administration Health Bureau hospital pharmacy.

1.7 Limitation of the Study

This study had been designed to collect relevant data to answer the research question and achieve the objectives. However, it may have some limitations. Firstly, the respondents may be busy to complete questionnaires. Another limitation may be respondent bias. Triangulation of different data collection methods are used to minimize this limitation.

1.8 Operational Definitions Of terms and Concepts

Store: is a place where item is received, stocked and dispatched (Aronovich, Dana, Marie Tien, Ethan Collins, Adriano Sommerlatte, and Linda, 2010).

Store management: has been defined as the combination of planning, decision-making and controlling inbound, storage and outbound flows (Faber, 2013).

Performance management: has been defined as a "process by which the hospital manages its performance in line with its hospital and functional strategies and objectives" (Bititci, Carrie, McDevitt, 1997).

Store performance measurement: Performance measurement is defined as the process of quantifying action, where measurement is the process of quantification and action leads to performance (Neely, Gregory & Platts, 1995).

Inventory management refers to the process of ordering, storing, and using a hospitals inventory. These include the management of raw materials, components, and finished products, as well as storing and processing such items. (https://www.investopedia.com/terms/i/inventory-management)

layout refers to the arrangement of all equipment, machinery, and furnishings within a building envelope after considering the various objectives of the facility. The layout consists of production areas, support areas, and the personnel areas in the building ((Tompkins, et al., Facility Planning, John & Sons, 1996).

1.9 Organization of the Study

The study is organized in to five chapters. Chapter-one presents the introductory part of the study that contains background of the study, statement of the problem along with the research questions, objectives and Scope of the proposed study. Chapter-two deals with the review of the extant literature related to the topic; whereas chapter-three gives detail account of the design and methodological aspects employed. The analysis of the study data, presentation of the results and corresponding discussions are comprised under chapter-four. Chapter-five include brief conclusions and relevant suggestions on the basis of the findings of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Performance Measurement

Performance measurement has become an important issue in hospitals due to the pressure to give results (Kennerley and Neely, 2002). The performance indicators, which form the performance measurement system, provide a tool to compare the current results with the present objectives and thus to eventually launch the necessary actions to carry out in order to reach these objectives (Berrah, Mauris, Haurat, and Foulloy, 2000).

According to Fernandes (2006), that hospital competes not just on financial efficiency, but also on social legitimacy. A hospital does not want just to maximize financial revenues, but also to be recognized and accepted in its environment.

One of the important aspects under the responsibility of the logistics sector is the store, where the main logistics operations take place: transportation, storing and stocking. Not only their number is increasing substantially but also their functionality is changing. Whereas in the past many European Distribution Centers (EDCs) primarily served as a store with a distribution function, some of the current EDCs have European headquarters, call-centers, service centers or manufacturing facilities as well (De Koster and Warffemius, 2005). The connection of these activities in one place makes the performance measurement in the store a key factor for the overall performance of the logistics operations.

Assessing store performance to support manager decisions in an effective way on the store management, considering the existing indicators of the store activities and knowing that there are limits in the decision-maker's ability to process large sets of performance expressions (Clivillé, Berrah, and Mauris, 2007).

The literature on store performance assessment has been largely ignored (Dotoli, Fanti, Iacobellis, Stecco, and Ukovich, 2009; Johnson and McGinnis, 2011). While there are widely accepted benchmarks for individual store functions such as order picking, little is known about the overall efficiency of stores (Johnson and McGinnis, 2011). Goetschalckx, and McGinnis, (2010) present a review about design and performance evaluation of store. The authors address important future directions for the store research community, stating that "the total store performance assessment models are themselves a considerable development challenge".

Using a set of ratio measures can lead to confusion; if some assessments are good and some are poor, is the store performing well? (Johnson and McGinnis, 2011). The challenge is to design a structure to the metrics (i.e., grouping them together) and extracting an overall sense of performance from them (i.e., being able to address the question of "Overall, how well are we doing?") (Melnyk, Stewart and Swink, 2004). In the same way, Lohman, Fortuin and Wouters ,2004 affirm that a conceptual question is still not answered: What are the effects of combining several assessments into an overall score?

To get a brief understanding about any business term a definition is often a good start. Performance management has been defined as a "process by which the hospital manages its performance in line with its corporate and functional strategies and objectives" (Bititci, et al., 1997).

Performance measurement has had a tremendous impact in management over the last decades according to this research there are three main reasons why performance measurement is essential.

1. Performance measurement's purpose is to simplify the reality so that rational decisions can be made. That the reality is transformed to simplified numerical concepts that can be communicated and acted upon is the key to successful management (Lebas, 1995).

2. Performance assessments play an important role in success by giving the opportunity to evaluate performance and benchmark the results against similar organizations (Camp, 1989).

3. Performance measurement plays the role of feedback in one's organization, it facilitates the assessment whether plans were accurate or not and it shows how well the execution was carried out. These processes are of critical importance to effective and efficient performance management (Bititci et al., 1997) (Bongsug, 2009).

The product flow is different, too. The primary function of a traditional store is storage (Gu, Jinxiang, Marc Goetschalckx, and Leon McGinnis, 2007). In the storage area, the flow of goods is broken. Vogt and Pienaar (2007) clearly state that, "the storage of the stock in the store completely segregates the inbound and outbound processes" (p. 87). The inventory placed in storage may remain there for a long time and even become obsolete (Rouwenhorst, Reuter, Stockrahm, van Houtum, Mantel, and Zijm, 2000). While this will have a negative impact on the financial performance of a private warehouse, in case of a public warehouse, the warehousing company will still receive revenue by providing this storage service to its customers. This is in sharp contrast with manufacturing where an accumulation of unsold finished inventory is definitely a negative factor (Goldratt and Cox, 1986).

According to Gu et al. (2007), a typical store operation can be viewed as a flow of goods first entering the store then consecutively going through the processes of receiving, storage, order picking and shipping and then physically leaving the store.

2.1.2 Performance Assessments and Metrics

This subsequently leads us to performance metrics, metrics are used to define the assessments in terms of scope and content. There are often mix-ups between different types of metrics to clarify Gartner have put together a compilation of commonly used metrics and their definitions, shown in

Table 2.1 Different metric types and their definition (adopted from Gartner, 2014)

Metric	**Definition**
Performance indicator	What you need to do (predictive assessments)
Result Indicator	What you have done (historical assessments)
Key Performance Indicator (KPI)	What you need to improve *significantly*
Key Result Indicator (KRI)	What significant things have been accomplished
Critical Success Factor (CSF)	What must be done in order to drive strategic business outcomes

2.1.3 Challenges in Performance Measurement

Even though performance measurement is a stated factor for successful management many companies are not engaged in it, and there are issues that speaks against it.

1. assessing is often put in negative terms because people think of surveillance and pressure to perform.
2. To develop a measurement system, or a set of KPIs can be very challenging and time craving.
3. Even if a measurement system is in place it has to be continuously updated to stay relevant and it's easy that the system keeps expanding and the meaning of having a few powerful KPIs are lost.

2.1.4 Performance Measurement Trends

The development of information technology has changed organizational environment almost entirely. And information technology (IT) has of course been very influential in performance measurements. Almost all processes today are in some way in touch with IT so it has become much easier to assess. Three main trends in performance management have been found in this research.

Real-time

The current highly competitive markets have created the demand for both businesses and products to be able to change fast and dynamically. The company that meets consumers' demands fastest is the one that survives. To be able to be flexible and develop winning strategies for the future it's important for managers to have meaningful performance information to avoid becoming lost in a sea of data (Elrod, 2013).

Mobility

The ability to change fast and dynamically also means that decisions must be able to made wherever you are. Mobility is therefore a large trend within performance management. Even if the logistics manager is away from site he wants to be able to manage the warehouse like normal. And with modern technology this is becoming more and more standard.

Visibility

To create a system so that critical business information can be attained, analyzed and acted upon has become almost as important as performance measurement itself. The increased willingness to assesses together with increasing number of processes assessed and the increased possibilities to automated assessing thanks to IT these have created massive opportunities to support decisions. However, there is also a great risk to get lost in the large amount of data that is gathered in today's businesses. A critical success factor is therefore to make important metrics more visible and, if possible, display them in a dashboard that provides the relevant metrics. (Searle, Dixon, 2013)

2.1.5 Performance Measurement Method

The method that was found to be the best match for an organization who decides to upgrade its supply chain performance measurement is described in a research paper from Gartner. safe Logistics is currently using Gartner as a source of industry information and news. The fact that they are familiar with many of the ideas and concepts was a big plus. The method that Gartner suggest is a three-step action plan. 1. First, identify where you

currently are. 2. Next, define the desired metrics; what should the future state look like? 3. Finally, develop a migration plan to move from the "as is" to the "to be." (Gartner, 2012)

For the future state, three levels of aligned metrics are recommended: the executive level, a midlevel for the end-to-end supply chain and a third level with deeper functional metrics (Gartner 2012). This model is however directed towards companies that work with global supply chain management from an end-to-end point of view. Something to have in mind is that most of the information can't be acquired from a warehouse management system (WMS) alone and consequently this model will not be used fully. store management is strongly focusing on operational measurements (metrics on executive level are often more financial), which is why focus will be on deeper functional metrics.

2.2 Conceptual Underpinnings of Store

2.2.1 Defining Store

The store has been viewed in many different ways and has many definitions Cavinato (1990) views the store as the place to hold, move, sort, transfer and change the form of inventories. Whereas, Spencer (1993) argues that the store is a production system. He states that the store is a combination of single operations, culminating at the end as a whole process. Gunasekaran et al (1999) believe that the store is a combination of both physical processes of material handling and methodologies such as inventory control and production control

2.2.2 Why have a Store?

According to John, Bartholdi, Iii and Steven (2011) a **store rationale** discussed below: **Why have a store at all?** A store requires labor, capital (land and storage and handling equipment) and information systems, all of which are expensive. Is there some way to avoid the expense? For most operations the answer is no. store, or their various cousins,

provide useful services that are unlikely to vanish under the current economic scene. Here are some of their uses:

To better match supply with customer demand: One of the major challenges in managing a supply chain is that demand can change quickly, but supply takes longer to change. Flows in demand, such as seasonality's strain the capacity of a supply chain. Retail stores in particular face seasonality's that are so severe that it would be impossible to respond without having stockpiled product. For example, Toys R Us does, by far, most of its business in November and December. During this time, their stores dispatch product at a prodigious rate (some conveyors within their stores move at up to 35 miles per hour). After the selling season their stores spend most of their time building inventory again for the following year. Similarly, stores can buffer the supply chain against collapsing demand by providing space in which to slow or hold inventory back from the market. In both cases, stores allow us to respond quickly when demand changes. Response-time may also be a problem when transportation is unreliable. In many parts of the world, the transportation infrastructure is relatively undeveloped or congested. Imagine, for example, sourcing product from a factory in Wuhan, China for retail sale within the US. After manufacture, the product may travel by truck, then by rail, by truck again, and then be loaded at a busy port; and it may repeat the sequence of steps (in reverse order) within the US. At each stage the schedule may be delayed by congestion, bureaucracy, weather, road conditions, and so on. The result is that lead time is long and variable. If product could be warehoused in Los Angeles, closer to the customer, it could be shipped more quickly, with less variance in lead time, and so provide better customer service. stores can also buffer against sudden changes in supply. Vendors may give a price break to bulk purchases and the savings may offset the expense of storing the product. Similarly, the15 economics of manufacturing may dictate large batch sizes to amortize large setup costs, so that excess product must be stored. Similarly, stores provide a place to store a buffer against unreliable demand or price increases (John, Bartholdi, Iii and Steven, 2011).

To consolidate product to reduce transportation costs and to provide customer service.. There is a fixed cost any time product is transported. This is especially high when the

carrier is ship or plane or train; and to amortize this fixed cost it is necessary to fill the carrier to capacity. Consequently, a distributor may consolidate shipments from vendors into large shipments for downstream customers. Similarly, when shipments are consolidated, then it is easier to receive downstream. Trucks can be scheduled into a limited number of dock doors and so drivers do not have to wait. The results are savings for everyone. Consider, for example, Home Depot, where more than a thousand stores are supplied by several thousands of vendors. Because shipments are frequent, no one vendor ships very much volume to any one store. If shipments were sent direct, each vendor would have to send hundreds of trailers, each one mostly empty; or else the freight would have to travel by less-than-truckload (LTL) carrier, which is relatively expensive but there is enough volume leaving each vendor to fill trailers to an intermediate cross dock. And each cross dock receives product from many vendors, sorts it, and prepares loads for each store, so that the total freight bound for each store is typically sufficient to fill a trailer. The result is that vendors send fewer shipments and stores receive fewer shipments. Moreover, the freight is more likely to travel by full truck-load (TL) and so pay significantly less transportation costs A stores also provides opportunities to postpone product differentiation by enabling generic product to be configured close to the customer. Manufacturers of consumer electronics are especially adept at this. Country-specific parts, such as keyboards, plugs, and documentation, are held at a warehouse and assembled quickly in response to customer order. This enables the manufacturer to satisfy many types of customer demand from a limited set of generic items, which therefore experience a greater aggregate demand, which can be forecast more accurately. Consequently, safety stocks can be lower. In addition, overall inventory levels are lower because each item moves faster. Another example is in pricing and labeling. The state of New York requires that all drug stores label each individual item with a price. It is more economical to do this in a few stores, where the product must be handled anyway, than in a thousand retail stores, where this could distract the workers from serving the customer (John, Bartholdi, Iii and Steven,2011).

2.2.3 Store Management

The objective of store Management is to efficiently and effectively coordinate all store processes and activities (Harmon, 1993; Tompkins, White, Bozer, and Tanchoco, 2003). store Management includes all planning and control procedures to operate the store. Planning and control is concerned with managing the ongoing activities of the operations so as to satisfy customer demand (Slack, Chambers and Johnston, 2001).

Store is defined as holding goods until they are required. In the past, store is known as a cost center but now organizations use store as a place to add value by doing many related jobs such as labeling and packaging. The fact that there are many different activities inside a store leads to the need for different kind of facilities, staff and technical equipment. The issues put forward for store management are to increase productivity and accuracy, reduce and control cost of inventory and shipping while providing good customer service (Richards, 2011).

Ackerman (2012) mentions three types of warehouse ownership. A private warehouse is owned or leased by the company itself to support its main operations. This will give greater control over broader logistics activities. This kind of ownership offers the company the possibility to choose location, size of the warehouse to fit the customer service supporting the company with lower cost and possible tax advantages and development grants. A public warehouse is managed by an independent contractor, who provides services for many companies at the same time. This kind of warehouse gives companies the flexibility to deal with changing demand and the possibility to avoid large capital investment and to use the economies of scale in order to reduce cost. Contract or dedicated warehouse: uses a combination of private and public warehouses. In particular, an independent contractors warehousing service is bought for a period of time according to a contract.

store management has been defined as the combination of planning, decision-making and controlling inbound, storage and outbound flows (Faber, 2013). While this thesis essentially focuses on the control and the decision-making aspects of storing, one can find more relevant research about planning in N. Faber's dissertation.

2.2.4 Storage Activities

In order for the reader to get an insight of this thesis area of research, following will describe basics behind store activities. The theory in this section follows general store philosophy and is similar to several renowned publications in the field of storing, both old and new. (Bartholdi & Hackman, 2011) illustrates the normal physical activities and flows in a store. The inbound processes are represented by receiving and put-away whilst the outbound processes include picking, packing and shipping. In the following section, brief descriptions of (Bartholdi & Hackman's, 2011) different activities in the inbound and outbound processes are presented, as well as other descriptions that are relevant to the topic.

Receive

Receiving is the first activity that is managed in a store. The activity may start with a notification of incoming goods, which allows the workers to arrange coordinated unloading of the incoming goods. Normally the goods are also scanned and registered in the company's WMS. Receiving represents about 10 % of the cost in a normal store (Bartholdi & Hackman's, 2011).

Put-away

Prior to the put-away of a stock keeping unit (SKU) is being made, it's important that a (convenient) storage location is selected for storage. The reason for this is because the storage location many time reflects how quickly and how cost-efficient it later on will be retrieved for a customer. To do this, the store staff needs to be able to control the inventory, i.e. the storage locations. Workers and managers need support to able to quickly access information about available storage locations, things to consider can be, how much weight a storage location tolerate, how spacious they are, how easily they are accessed etc. The put-away can then be realized with the help of various equipment such as forklifts, roll trolleys or conveyers. Put-away usually corresponds to about 15 % of storing operating payments (Bartholdi & Hackman's, 2011).

Storage

There are two main storage types, dedicated storage and shared storage. In general, a unique address is assigned to every single location in a store, regardless if it's dedicated or shared location. A dedicated location is a storage, which is reserved for a specific and allocated SKU. In his manner, high frequent SKUs are assigned to more convenient locations, which streamlines order picking. However, a consequent of dedicated storage is often that volume utilization becomes insufficient. The other type of storage, shared storage, can on the other hand be used to improve space utilization. Here, SKUs can be assigned to several locations. Once such a location becomes empty, another SKU can be assigned to this specific location. Consequently, the utilization of the inventory will be higher, the tradeoff is of course that a SKU can be located in many different locations and can thus be harder to find without good systems in place (Bartholdi & Hackman's, 2011).

Pick

Normally, order-picking (retrieving a SKU from storage location) represents about 55 % of total store operating costs. But it can also be further broken down to traveling, searching, extracting and paperwork and other activities. As a mean to get the right information to the order pickers, pick-lines are used, which contain instructions on what to pick, in what quantity and in what units of measure. Each pick-line corresponds to a specific location in the store. It should further be notable that a pick-line may consist of several picks from the same location. Of course picking have been of large interest for automating due to high operating cost and manual handling (Bartholdi & Hackman's, 2011).

Pack

Packing is also a quite labor-intensive activity because of the magnitude of orders (and SKUs) that are handled, often inspections take place at this stage as well. The inspections are performed to control that the orders are complete and accurate, order accuracy is a crucial measure and important to create good service to customers. Inaccurate orders can generate both expensive returns and poor reputation. In general, the numbers of units that are handled in the shipping dock are lower compared to that of picking. The reason for

this is because customers ask for consolidated shipments, which means that orders are packed together on a single carrier (e.g. pallet or case), which enables economics of scale benefits due to lowered shipping and handling expenses. However, there are customers, e.g. e-commerce actors such as Amazon, who are more likely to ship good separately, even though one customer buys two books just a quarter of an hour apart from each other. In this case, rapid response is more important, and shipments can be sent separately because it's not a concern for customers (Bartholdi & Hackman's, 2011).

Cross-dock

Cross docking is referred to the activity when goods are not stored in the store. It is instead directly transferred, after receipt in receiving, to the shipping dock where an aggregation with other goods will be coordinated into a truck (Van Den Berg, 2012).

we demonstrate the main store activities with their respective boundaries: receiving, storage, internal replenishment, picking, shipping, delivery. The activity boundaries are determined according to their definitions:

- ✓ **Receiving activity**: operations that involve the assignment of trucks to docks and the scheduling of unloading activities (Gu et al. 2007);
- ✓ **Storage:** material movement from unloaded area to its designated place in inventory (Yang & Chen 2012; Mentzer & Konrad 1991);
- ✓ **Replenishment**: product transfer from reserve storage area to forward pick area (Manikas & Terry 2010);
- ✓ **Order Picking**: process of obtaining a right amount of the right products for a set of customer orders (De Koster, Le-Duc & Roodbergen, 2007). This is the main and the most labor-intensive activity of warehouses (Dotoli et al. 2009);
- ✓ **Shipping:** execution of packing and truck's loading after picking, involving also the assignment of trucks to docks (Gu et al. 2007);
- ✓ **Delivery:** transit from the store to the customer.

2.2.5 Store in Supply/Value Chain

Store function as node points in the supply (value) chain linking the material flows between the supplier and the customer as a result of the highly competitive market environment organization are continuously forced to improve their storing operations. Many organizations have also customized their value proposition to better meet customer demands, which has led to changes in the role of stores. In such conditions improvement of order processing and materials handling can bring significant cost savings and at the same time increase customer value. (Tommy Blomqvist, 2010)

2.2.6 Store Functions and Processes

A store has traditionally been viewed as a place to hold or store inventory. However, in contemporary logistical systems, store functionality is more properly viewed as mixing and modifying inventory to meet organization requirements, where storage of products is ideally held to a minimum, the storing of products. Stores decouple supply from demand, they are the points in the supply chain where product pauses, however briefly, and are touched. This consumes both space and time (person-hours), both of which are an expense. Distinguish four basic store functions that add value to the supply chain. The break-bulk function allows for products to arrive in large quantities and then to be shipped in small quantities tailored to the needs of many customers. This adds value as it reduces production costs, purchasing costs, and transport costs upstream in the supply chain. The storage function adds value since it allows larger quantities to be produced and transported which is more efficient. It also enables orders to be quickly delivered to customers, which provides a better service level and prevents lost sales. The consolidation function implies that the store holds products from various sources, so that customers can order a large product range from a single source (Sneha Vishnu More, Sanpada, August 2016).

2.2.7 Classifying Warehouses

Rushton (2010) has classified warehouses based on the nature and purpose of a warehouse within the supply chain as follows:

- **By product type**: there are different kind of products which require their own shipping and storage conditions, such as frozen food, fragile items and high value items.
- **By the stage in the supply chain**: the warehouse is assigned to store raw materials, work-in-process or finished goods.
- **By geographic location**: this warehouse is constructed just to serve the specific areas and to meet strictly local demands.
- **By function**: the warehouse is used for the purpose of holding inventory or sorting.
- **By company usage**: the warehouse is used by one company or shared by various users.

Hackman, Frazelle, Griffin, & Vlasta (2000) suggest that dependent on customer, warehouses can be categorized to several types such as retail center which supplies retail stores, service part center for expensive equipment storage, 3PL warehouse which is outsourced by the company to serve other organizations and perishable warehouses, which carry short-shelf-life products.

2.2.8 Store Performance

In general, stores aim at simultaneously reducing cost, increasing productivity, and improving customer responsiveness. Assessing store performance provides feedback about how the store performs compared to the requirements, or compared to industry peers. As such, it can also provide feedback on the adequacy and effectiveness of an implemented store Management structure.

Johnson and McGinnis (2011) discuss two types of store operations performance criteria: financial (i.e., revenue related to cost) and technical (i.e., outputs related to inputs). They argue that technical criteria based on output generated and resources consumed tend to give a clearer picture of a store's operational performance than financial measures, because stores typically do not generate revenues. The function of stores is to support the supply chain. As stores are often part of a larger supply chain or network, traditional

operational performance objectives such as productivity, quality, delivery, and flexibility (Boyer and Lewis, 2002; Schmenner and Swink, 1998) are more applicable. Technical performance measurement in the store includes cases or order lines picked per person per hour, picking or shipment errors rates, order throughput times, and percentage of orders with special requests (Forger, 1998; Van Goor et al., 2003).

2.2.9 Pharmaceutical Store Performance Assessment

With the upgrade of the production came the need to look at better performance of the store. The urge for measuring warehouse performance is provoked by internal issues (e.g. space utilization, inventory accuracy, safety and housekeeping), external issues (order accuracy, stock-outs, complaints) and performance issues (e.g. goals, feedback, competence) (Tompkins 1998). Some of the challenges the stores are faced with are material handling, data collection, and increased labor to support the storing requirements (Garcia). The areas of interest to assess the performance are productivity, inventory and order fulfillment. Some organizations tend to assess their progress against financial measures such as return on investment, cash flow, sales growth, but those assessments are irrelevant and do not truly refer to the issues of quality, service, and continuous improvement.

2.2.10 Key Performance Indicators in Storage

Storage functions utilize the resources such as space, equipment, and personnel while trying to meet the customers' satisfaction. Customers are looking for a store that is able to deal with the logistics activities quickly and keep products in good condition. Hence, the issues of storage are how to maximize the use of those resources and at the same time in the most efficient way. The performance measurement of storages is based on storage capacity in terms of the total volumetric space and the total number of stored components, storage density which represents available volumetric space for storage, the accessibility which is the ability to access items in storage location. Utilization and availability are used as indicators to assesses the performance as well (Thi Thu Ha Tran, 2015).

2.2.11 Store Management Systems (SMS)

Even though the store management system (SMS) market is becoming mature, it does still play a significant part of the ever-changing shipping and distribution environment (McCrea, 2014), but what is a SMS actually? A SMS is a software system that enables one to control different activities in a store or a distribution center. It regulates the tasks that need to be accomplished, by sending commands to the staff's hardware devices or the automated material control systems. (Van Den Berg, 2012). A SMS provides real time communication by conveying activities for staff and machines to perform. There are very many different functions in a SMS, ranging from receiving and quality assurance to packing and shipping. In some, there are more high-end functions, which cover for example forklift travel optimization, support for forward pick areas (FPA) and automated replenishments. The most important capabilities of a SMS are apart from controlling the store, of course to handle all main activities from the receiving to the shipping (Van den Berg, 2012).

SMS Receive and ship

A SMS's most central capabilities are to register receipt of inventory into the store and register its shipments out of the store. The key link here is that such capabilities are required for the creation and documentation of financial transactions both upstream to suppliers and downstream to the recipient (Bartholdi & Hackman, 2011).

SMS Stock Locating System

The succeeding functionality of a SMS is to manage the inventory of storage locations. With such a feature

e, a software system can achieve more than just handle transactions of financial nature, it can also support store operations such as give directions on store activities from and to storing locations, respectively (Bartholdi & Hackman, 2011)

2.2.12 Store management trends

Even though the fundamental processes of storing: receive, put-away, pick, pack and ship, remains the same, it's what happens outside the walls of stores that drive how these processes will be executed (Terry, 2013). In addition, Ulf Jansson (2014), CEO at safe Logistics, also addressed this statement, saying that customers expect providers of store management software to be more oriented towards end-to-end solutions and therefore best of-breeds suppliers in storing need to put emphasis on the bigger picture. This essentially means that a SMS vendor must stay innovative in today's dynamic business environment (McCrea, 2014).

Visibility

Collecting more data on inventory management, and across the entire network of the supply chain, making it available in real-time is a strong trend within storing. This also includes being able to use data stores and analyze big data in a better way. Strong communications, deeper integration and increased collection points, are some of the prerequisites. (Terry, 2013)

Integration of store control systems (SCS) with SMS

SCS is the software that traditionally is used to control automated materials handling equipment (McCrea, 2014).

Consumerization

The use of consumer devices and operating systems is being recognized in store today. Younger IT tech firms are seeking to utilize consumer phones and tablets in the store (Terry, 2013), which also is the case for safe's customers (Brorsson, 2014).

Software as a Service (SaaS) & Cloud

Cloud computing has a substantial impact on the supply market (Schramm, Wright, Seng, & Jones, 2010), and several SMS developers offers it, but it seems to be few store managers however who are willing to take the risk of data insecurity and downed Internet to get the cost and software benefits with cloud (Terry, 2013).

2.3 Empirical Evidences on the Store Performance Measurement

According to (Ilieş Liviu, Turdean Ana-Maria and Crişan Emil Babeş, 2009), Performance refers to the way in which work is done. There can be a good performance or a poor one. But what is performance measurement? (Neely et al., 1995) defined it as the process of quantifying the efficiency and effectiveness of an action or activity. The purpose of performance measurement is to find out whether things are going the right way and, if not, to find what the causes that generated a poor performance were. After this step, there have to be found solutions for improving performance. There are several reasons for assessing performance: for improving performance, for avoiding inconveniences before it's too late, for monitoring customer relations, for process and cost control and for maintaining quality (Ackerman, 2003: 1). The main instruments for assessing performance are performance indicators, also named key performance indicators. They are specific characteristics of the process which are assessed in order to describe if the process is realized according to pre-established standards. The best way to use indicators is to compare process values with normal, standard values. If there are poor results, poor performance, in reality, improvements for the process have to be made. Indicators are used basically for comparison with expected values. They are the control system of the studied process.

(Ilieş Liviu, Turdean Ana-Maria and Crişan Emil Babeş, 2009) in their case, setting an indicator system for storage activity is the key for performance improvements, as it shall be presented in the example. They presented here some key indicators that are used around the world to assesses store performance:

- (Colson and Dorigo,2004) present a software tool which allows selecting public stores according to the following criteria: storage surface and volume; dangerous items; possibility for temperature control; separation of storage areas; geographical distance to highway connection, train, waterways; certification; opening hours; assistance with customs; use of technology; handling equipment; number and characteristics of docks etc.

- (John Hill, 2007) uses three types of indicators: order fulfilment, inventory management and store performance. Some of the indicators proposed by John M.
- More recent work includes (Collins et al., 2006), which described the collection of store metrics; i.e., picking and inventory accuracy, storage speed, and order cycle time,

Performance measurement in the warehouse industry traditionally employs a set of single factor productivity measures that compare one output to one resource (or input). This is sometimes called the ratio method see (Tompkins et al. 2003, Chen and McGinnis, 2007). However, using a set of ratio measures can lead to confusion if some measures are good and some are poor, is the warehouse performing well? Thus it is more useful to employ a measure that considers simultaneously all of the significant inputs and outputs. Warehouse performance has been measured with each indicator separately, however, this traditional measurement has some limitations that it cannot compare the performance over time regarding the unknown relative values between indicators (McGinnis et al., 2002).

2.4 Conceptual Framework

2.4.1 Theoretical Foundation

There are many types of indicators have been developed to assesses many supply chain and logistics activities. Choosing the type of indicator to assesses can be daunting, and it could be dangerous to simply focus attention on one area. For example, focusing only on productivity containment could improve one area but not affect the overall performance of the supply chain.

2.4.2 The Factors of Store Performance

Different factors have been employed by various researchers to operationalize store performance with a visible repetition in the use of some of these factors (John Hill's, 2007), indicators to assess the performance of the store, grouped into three categories, (Aronovich, Dana, Marie Tien, Ethan Collins, Adriano Sommerlatte, and Linda Allain,

2010), (Per Axelsson & Jonathan Frankel, 2014) and (Ilie Liviu, Turdean Ana-Maria and Crisan Emil, 2009) The use of one or another factor by these research works have been justified by the respective contexts considered for particular assessments. This study would adopt six of the most commonly used factors in the literature, namely Inventory Management, storage Cost, Layout & Operations Capacity, store Equipment & Storage, Special Storage and Security & Safety so as to operationalize pharmaceutical store performance metrics.

2.4.3 Storage Performance indicators

Generally, a pharmaceutical sore operation can influence the general public hospital performance in manners such as receiving, storage and dispatching in relation with Inventory Management, Layout & Operations Capacity, store infrastructure, Equipment & Storage, Special Storage, Security & Safety (USAID, 2005).

Receiving, Storage as well as picking and dispatching has their own cost, quality such as perfect order fulfilment incorporating accuracy and response time as a speed should be measured and continuously improved (USAID, 2005).

Table 2.2 pharmaceutical Storage Performance indicators

Inventory Management Indicators	Layout & Operations Capacity Indicators	Store infrastructure, Equipment & Storage Indicator	Special Storage	Security & Safety
• Inventory Accuracy Rate	• Store Order Processing • Put-away Time • Put-away Accuracy • Picking Accuracy Rate • Storage Space Dedicated for Handling	• Storage Space Utilization • Value of Product Damaged in the store		• Store Accident Rate • Defied Security Measures

Source: a modified adoption from USAID, 2005

2.4.3.1 Inventory Management

A. Inventory Accuracy Rate

This indicator measures the percentage of storage locations that had no inventory discrepancies when stock cards were compared to a physical inventory count out of the total number of locations under review, during a defined period of time. Alternatively, this indicator can be calculated for a single facility as the percentage of months or quarters with no inventory discrepancies out of the total number of months or quarters in the review period (e.g., annual). The inventory accuracy rate can be used to assess overall inventory control performance for a group of storage facilities or for one storage facility over a set of review periods. Inventory accuracy is critical for managers to know how much they have in stock at any given point in time and to know when a new order must be placed to replenish stock. This discrepancy analysis can help managers identify storage locations that are having problems with inventory management; the analysis can lead to opportunities for improvement (USAID, 2005).

2.4.3.2. Layout and Operations Capacity

A. Put-Away Accuracy

This indicator is the percentage of items placed in the correct location or bin in a storage area. This indicator assesses a facility's ability to stock items in the correct location so they can be quickly and easily located. This can provide an indication of whether staff is practicing good storage practices and guidelines. This indicator can be assessing during a site visit or by making periodic checks at the facility over a specified length of time. For example, during a quarterly period, the number of times items were found in the wrong location (USAID, 2005).

B. Picking Accuracy Rate

This indicator is defined as the percentage of items or lines picked accurately (i.e., the correct items and quantities) from storage based on a request or packing list, and then placed into the appropriate container.

This indicator assesses whether items are accurately selected from storage and placed into a container to be shipped to the requesting facility. It can reveal the ability of the facility to pick requests correctly in terms of quantity and item. Errors can result in stock outs or overstocks at the ordering facility. To collect data for this indicator, a review of items just before they are loaded for transporting can be conducted to determine the accuracy of picked items compared against an invoice or requisition form. It can be calculated for a single order or for all orders during a defined period of time (USAID, 2005).

C. Store Order Processing Time

This indicator assesses the average amount of time (e.g., minutes, hours, days, weeks) from the moment an order is received at the storage facility until the time the order is actually shipped to the client. The order processing time can be calculated for a specific shipping facility averaged across orders or on average for orders to a specific client or for a specific product.

This indicator helps monitor the order processing performance and the efficiency of a shipping facility. It also helps identify opportunities for improving staff performance in order management and a facility's response time (USAID, 2005).

D. Put-Away Time

This indicator assesses the amount of time it takes from when a product(s) has been unloaded from a truck after arriving at a store or other storage location to when it is stored in its designated place and is ready for picking. This indicator can be calculated by product, or by shipment, or as an average across products or dispatching, during a specified period of time (USAID, 2005).

Assessing the put-away time can help improve productivity by monitoring the efficiency of the put-away processes and the staff responsible for the task. It can help managers identify work conditions or processes that need improvement, as well as the need for staff training.

E. Percentage of Storage Space Dedicated to Product Handling

This indicator assesses the percentage of total storage area that is dedicated specifically to product handling (receiving, unloading, packing, loading, and dispatching).

It is recommended that a certain percentage of the storage area be dedicated specifically to product handling for an average volume of products. The amount of handing space needed depends on the volume of product moved through the storage area and the equipment required to move those products. This dedicated area is critical for the efficient operations of the storage facility to allow for organized and efficient receiving, unloading, packing, loading, and dispatching of products; and to protect products from the elements during receiving and packing (USAID, 2005).

2.4.3.3. Store Equipment and Storage

A. Storage Space Utilization

Storage space utilization indicates the percentage of the total storage space actually being used out of the total storage space available. Based on this indicator, managers can monitor storage capacity and utilization at a store. By assessing storage space utilization, managers can look for opportunities to improve storage capacity (e.g., remove expired products, de junking, reorganizing) and maximize the use of the storage space, or request a re-evaluation of layout, material flow, shelves disposition (USAID, 2005).

B. Value of Product Damaged in the Store

This indicator calculates the value of products damaged, during a defined period of time (usually one year), in the warehouse as a percentage of the value of all shipped products during that period. Inappropriate warehousing conditions or handling of products can lead to inventory damage (USAID, 2005).

This indicator can help put the value of products damaged into perspective and can be used to help identify the causes, as well as, the actions needed to avoid such damages, including better infrastructure, manpower, training, etc.

2.4.3.4. Security and Safety

A. Store Accident Rate

This indicator assesses the total number of accidents occurring in a store or other storage facility during a defined period of time.

This indicator can reveal poor store management and practices, untrained staff, unclear safety guidelines, faulty equipment, or poor conditions. It can help pinpoint areas needing improvement by determining the cause of the accidents because of human error or other reasons. With intervention, accidents should decrease in frequency (USAID, 2005).

B. Defined Security assessments

This indicator assesses whether there are guidelines or standard operating procedures (SOP) in place that provide instructions to prevent theft or leakage at a given storage location. Implementing proper security assessment at storage facilities will help prevent theft and leakage of products, thus saving money and increasing the availability of commodities. The program should have defined and detailed instructions for facilities to follow to ensure that the facility is secure and the products protected. Evaluators should also assess the quality or thoroughness of these guidelines or SOPs and the level of adherence by the facilities (USAID, 2005).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The designing and methodological aspect of a particular study is the roadmap that the study should follow in its pursuit of the desired outcome. Hence, due care shall be given while spelling out this roadmap. In view of that, a detailed account has been given to the description of the particular design the research would employ; the data sources and methods of collection; the target population, unit of analysis and respondents; the types of instruments and their development procedure; the dimensions and corresponding measurement items; and data processing, analysis and presentation procedures.

3.2 Description of the Study Area

This research has been done in Ethiopia, particularly Addis Ababa regional health bureau (AARHB) hospital pharmacy performance of pharmaceutical store management.

The study area is chosen because of the most accessible area and facilities to get large number of public hospital; this is help to get more data in pharmaceutical store compared to other parts of the country. Addis Ababa regional health bureau (AARHB) that make the study more appropriate to conduct.

3.3 Research Approach

A research used quantitative data to conduct this study. This quantitative data is help the responses from different sources to better improve the conclusion from the study. this research is qualitative approaches of doing research, which has been practiced, as recommended by (Creswell, 2009).

3.4 Research Design

Research design is the blueprint for fulfilling research objectives and answering research questions (John A.H. et al., 2007). In other words, it is a master plan specifying the methods and procedures for collecting and analyzing the needed information. It ensures that the study will be relevant to the problem and that it uses economical procedures. The same authors discuss three types of research design, namely exploratory (emphasizes discovery of ideas and insights), descriptive (concerned with determining the frequency with which an event occurs or relationship between variables) and explanatory (concerned with determining the cause and effect relationships).

This particular study adopted a census survey design to quantitatively assess pharmaceutical store management performance of the AACAHB pharmacy store.

The survey method can be used for three types of research, namely descriptive (which focuses on the determination of the frequency with which an event occurs and how variables are related/associated in a particular context), exploratory (which emphasizes on the discovery of ideas and insights), and explanatory (concerned with determining the impact and cause and effect relationships among variables), (Bhattacherjee, 2012; Adams, Khan, Raeside, and White, 2007).

Therefore, the types of research employed under this study is descriptive research. The major purpose of descriptive research is description of the state of affairs as it exists at present. Then this study describes and critically assesses the factors of the performance of store in AACAHB hospitals. Moreover, obtaining information from census survey of a population a reasonable strategy for pursuing many descriptive researches (Ruane, 2006), hence justifying the use of a census survey analysis in this particular study. The finding and conclusion of the study is depending on the utilization of statistical data collection and analysis.

3.5 Target Population and Sampling Method

There are 14 government owned hospitals in AACAHB of which four are under the federal ministry of health, one is university hospital, six are general hospitals under Addis

Ababa City Administration Health Bureau and the other three are army and police hospitals. The study is conducted on all Addis Ababa City Administration Health Bureau hospital pharmacy. From each hospital had 20 respondents: Pharmacy store manager, pharmacy purchaser, pharmacy dispenser head pharmacists, and pharmacy case team managers had been taken as respondents of this study.

The sampling method is census survey method that all public hospital in AACAHB are covered in this study. There are six hospitals in AACAHB, that are Minilik II, Ras desta, Zewuditu Memorial, Gandi Memorial and Trunesh Bejjing hospitals.

The target population size of the study is public hospital contains 120 target population. Due to small number of the target population, which was 120 in number, it has been decided to consider the entire population in the study, i.e. to conduct census survey, rather than sampling from the population. This is on the basis of the suggestion that if the target population is small. census survey is very appropriate and effective since virtually all population would have to be sampled in small populations to achieve a desirable level of precision (Israel, 2013).

The study had assessed six general public hospitals then the total target population are adding all six public hospitals each contain 20 respondents so that the study total target population is 120.

The given total target population are easy to manages the researcher is used all target population in this study therefore the sample size of the study is 120 the same as that of the total target population size.

3.6 Data sources and Type

There are two sources of data: primary and secondary data sources. The primary data that is collected by using interviews and questionnaires. Primary data is the information that the researcher finds out by himself/herself regarding a specific topic having the likely advantage that the data is collected with the research's purpose in mind, whereby ensuring the resulting consistency of the information with the research questions and purpose (Biggam, 2011).

3.6.1 Primary Data Sources

Questionnaire are distributing for the target respondents identify above to gather detail information about the performance of store management of Addis Ababa regional health bureau hospital pharmacy. Likertscale questions are designed to assess the level of performance. In addition, interviewing key informants using structured interview and observations will be used to answer why and how question.

3.7 Data Collection Procedure

Head of the hospitals (the Medical Director) is approached having support from the school of commerce to obtain consent and permission to undertake the data collection process. Then, the questionnaires are distributed in person for the respondents.

As far as the procedure of data collection is concerned, contacts had been initially made to respondents to explain the purpose and nature of the study so as to achieve the desired response rate. Subsequently, the questionnaire was distributed and collected physically from the potential respondents at their site by the researcher.

The layout of the questionnaire is kept very simple to encourage meaningful participation by the respondents. The questions are kept as concise as possible with care taken to the actual wording and phrasing of the questions. The reason for the appearance and layout of the questionnaire are of great importance in any study where the questionnaire is to be completed by the respondent (John A. et al., 2007).

Moreover, in order to improve my study and strength my findings, I was referred articles, academic journals, and useful texts through different sources, such as library, journals, academic books. Data collection procedure first the researcher adopted the questioners from USAID book (USAID, 2005) and other research (Tewodros Bogale June, 2016). After that the researcher communicates the respondents to get their consent then prepared questionnaires are distributed to each participant by appreciating their participation and devoting their precious time for the research. The questionnaires are collected by checking the completeness of the data. Finally, the activities are accomplished by appreciated the respondents.

3.8 Data Analysis

The study data is analyzed using Statistical Package for the Social Science (SPSS) version 20.0. Frequency tables and percentages are used to summarize the demographic information of respondents; whereas, descriptive statistics such as mean and standard deviations of the respondents' scores on all the dimensions are assessed in order to determine the extent of pharmaceutical store performance in the AACAHB hospital pharmacy. Finally, detail interpretation and discussion of the results of the statistical analysis are provided.

3.9 Validity

Validity is the degree to which a test measures what it significances to measure (Creswell, 2009). Validity defined as the accuracy and meaningfulness of the inferences which are based on the research results. It is the degree to which results are obtained from the analysis of the data actually represents the phenomena under study. The researcher contends that the validity of the questionnaire data depends on a crucial way the ability and willingness of the respondents to provide the information request.

A pilot study is conducted to refine the methodology and test instrument such as a questionnaire before administering the final phase. Questionnaires are tested on potential respondents to make the data collecting instruments objective, relevant, suitable to the problem and reliable as recommended by (John Adams et al., 2007). Issues raises by respondents are gathered and questionnaires are refined accordingly. Besides, proper detection by an advisor and subject matter expert had also take to ensure the content validity of the instruments. Finally, the improve version of the questionnaires are printed, duplicated and dispatched.

3.10 Ethical Consideration

Ethical considerations are importance while trying to advance knowledge through scientific inquiry. The study has attempted all the necessary precautions to protect the study participant's form such sort of problematic encounters by applying certain

measures. Accordingly, the respondents are notifying not to mention their identity, particularly their names while filling questionnaire. This particular study by boldly explaining to them the apparent purpose of the study (which is actually for academic purpose) and ensuring the confidentiality of their identity and whole part of the information they provided for the purpose of undertaking this study.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION

4.1 Data Analysis

In this chapter, the data collected using questioner was analyzed and presented based on the objectives of the study set above. The data analysis, presentation and discussion mainly focused on finding the answers to the research questions and following statistical procedures, emphasis was therefore put on Three things, first demographic information of respondents followed by presentation of descriptive statistics to answer the first six research questions and analysis of the closed indicator questions to answer and finally a summary of the analysis will be presented.

The data was found to be important to assess performance of pharmaceutical store management of Ababa regional health bureau public hospital pharmacy. Descriptive statistics were used to analyze and interpret the results of the study.

4.2 Respondents' Demographic Information

The entire population of the Addis Ababa regional health bureau public hospital pharmacy was considered in the study as inferred in the preceding part of this study including all the pharmacy staff, hence making the total number of respondents 120. However, only 97 respondents have filled and returned the questionnaire, which essentially made the response rate about 80.8%. The demographic information of the respondents who have filled and returned the questionnaire is presented on Table 4.1.

As shown on the table below, females dominate the respondents' list registering about 56.6% of the total respondent with males taking the remaining 45.4% of the respondents. As far as respondents' age is concerned, the majority of the respondents (55.7%) were aged between 26 to 35 years followed by the age categories of 36 to 45 years, 18 to 25 years and above 45 years respectively with percentage scores of 25.8%, 14.4%and 4.1% in that order.

With regard to educational qualification, significantly higher percentage of the respondents (82.5%) were first degree holders, whereas those having post graduate degree and diploma stand second and third in the ladder of educational qualification accounting for 7.2% and 6.2%of the total number of respondents and below college diploma of 4.1% On the other hand, being an important element of the profile of the respondents, years of service under the relevant job positions was also assessed and it has been revealed that those who have served above 6 years' respondents who have served 2 to 5 years respectively with the corresponding percentage scores of about 42.3% and 35.1%. Considering the fact that respondents' relative work experience in the job positions of concern has a direct attitude on the quality of response that might be provided, it looks very desirable to have the lines share of respondents (95.9%) having served 1 years to above 6 years on the positions of concern as a youngest facility aged only six years. dominate the list by taking 42.3% of the entire respondents. Those who have served 2 to 5 year on the positions of concern came second on the ladder followed by the category of respondents who have served 1 to 2 years respectively with the corresponding percentage scores of about 35.1% and 18.6%. Considering the fact that respondents' relative work experience in the job positions of concern has a direct bearing on the quality of response that might be provided, it seems very desirable to have the lines share of respondents 4.1% having served below 1 years on the positions of concern as a youngest enterprise aged only one years.

Table 4.1 Respondents demographic information

Variable	Choice	Frequency	Percent
sex	Male	44	45.4
	Female	53	56.6
	Total	97	100
AGE	18-25 YEAR	14	14.4
	26-35 YEAR	54	55.7
	36-45 years	25	25.8
	>= 45 years	4	4.1
	Total	97	100
Educational Qualification	below college diploma	4	4.1
	college diploma	6	6.2
	first degree (BSc, BA)	80	82.5
	second degree (MSC, MA)	7	7.2
	Total	97	100
Year of service	below 1 years	4	4.1
	1-2 years	18	18.6
	2-5 years	34	35.1
	above 6 years	41	42.3
	Total	97	100

Source: Survey Result, 2019

4.3. Descriptive Analysis

The mean is measure of central tendency which provides general picture of the data and the result of mean of respondents in each perspective of the measures suggest that the increment or not of the supply chain performance. In this case, the mean of each item together with their respective dimension overall was calculated in order to conclude the overall supply chain performance.

The respondents were asked to respond to the questions under each practice on a 5 point Likert scale and indicate the extent they agree with the statements that is: 1-Strongly agree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

To assess this the respondents were asked to respond their agreement to the questions under each practice on a 5 point Likert scale and indicate the extent they agree with the statements that is: 1-Strongly agree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree. A mean score 0-1.5 means the respondents are strongly disagreed, a mean value 1.5-2.5 means respondents are disagreed, a mean score between 2.5-3.5 means the respondents are neutral to rate the practice and a mean value 3.5-4.5 represents the respondents are agreed. Respondents are highly agreed if the mean value above

4.3.1. Operations Capacity and Layout Perspectives

First research question: What is the performance of AACAHB pharmacy store layout and operational capacity?

Table 4.2 Operations capacity and layout Indicator measurement items mean and standard deviation

Measurement Items Operations capacity and layout	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean	Std. Deviation
In our store receiving and dispatch areas separated	12.4	57.7	9.3	13.4	7.2	2.45	1.099
Receiving area sufficient space to arrange and sort an incoming delivery	5.2	67.0	13.4	6.2	8.2	2.45	0.990
We are designate for expired or damage goods	3.1	18.6	24.7	41.2	12.4	3.41	1.028
Our storage items are picked accurately from storage based on a requirement and then placed in to the appropriate truck	1.0	10.3	46.4	28.9	13.4	3.43	0.889
We are arrange items with identification label, expired date and manufacturing dates clearly visible	0	29.9	43.3	14.4	12.4	3.09	0.969
Our store inventories are placed in the correct location or Bin	2.1	9.3	25.8	43.3	19.6	3.69	0.961

4.3.1.1 Respondents' Perception on Operations capacity and layout indicator

Based on table 4.3 above the mean values of each of the measurement items of Operations capacity and layout were calculated between 2.45 and 3.69 with almost similar standard deviations that range between 0.961 and 1.099. The lowest mean value is registered in the case of Receiving area sufficient space to arrange and sort an incoming delivery rate and store receiving and dispatch areas separated in the second place followed by the mean score for arrange items with identification label, designate for expired or damage goods and picked accurately from storage based on a requirement and then placed in to the appropriate truck which is very comparably close mean values of 3.09,3.41 and 3.43 respectively; while inventories are placed in the correct location or Bin 3.69, comes last in the ascending order.

The noticeably represented mean scores of the measurement items of Operations capacity and layout indicator suggest that respondents in the AACAHB believe that lower efforts have been made by their individual facilities to enhance pharmaceutical store management performance in the case of Operations capacity and layout both in the Receiving area sufficient space to arrange and sort an incoming delivery rate and store receiving and dispatch areas separated the mean score is lower suggesting that relatively lower efforts have been exerted. This implies the fact that there are no attempts made by the AACAHB hospitals.

In the case of arrange items with identification label, designate for expired or damage goods and arrange items with identification label, expired date and manufacturing dates clearly visible the score is moderate suggesting that relatively moderate efforts have been exerted. This implies the fact that the attempts made by the AAACHB hospitals are not as such considerable affecting to designate for expired or damage goods and arrange items with identification label and then placed in to expired date and manufacturing dates clearly visible.

In the case of inventories are placed in the correct location or Bin the score is higher suggesting that relatively higher efforts have been exerted. This implies the fact that the attempts made by the AARHB hospitals are important to continue in the store.

4.3.2. Store Equipment, Infrastructure and Storage Perspectives

Second research question: How the government hospitals of Addis Ababa City Admiration performing in fulfilling infrastructure, equipment's and good space utilization and allocation?

Table 4.3 Store equipment and storage Indicator measurement items mean and standard deviation

Store equipment and storage	Mean	Std. Deviation
Our store sufficient pallets available	3.22	1.033
Our storage system utilized (shelving, racks or pallet stacking)	3.44	0.935
In our store cartons and products up off the floor and protected from water and dust	2.58	0.998
Most of the time Store managers can look for opportunities to improve storage capacity (e.g., remove expired products and reorganizing)	3.40	1.027
Accidents are not occurred in our store like physical accident on daily laborers, store personals and also on equipment	3.27	1.085
Most of the time Store manager maximize the use of the storage space, or request a re- evaluation of layout, material flow, shelves disposition, etc.	3.39	0.953
storage area that is dedicated specifically to product handling	2.63	0.846

4.3.2.1 Respondents' Perception on Store Equipment and Storage Indicator

Based on the table 4.4 above the mean values of each of the measurement items of Store equipment and storage indicator were calculated between 2.58 and 3.44 with almost comparable standard deviations that range between 0.846 and 1.085. The lowest mean value is registered in the case of cartons and products up off the floor and protected from water and dust and storage area that is dedicated specifically to product handling and followed by Our store sufficient pallets available, Accidents are not occurred in our store, Store managers can look for opportunities to improve storage capacity, Store manager maximize the use of the storage space and then mean score storage system utilized (shelving, racks or pallet stacking). The scores of the scale of Store equipment and storage indicator which is very comparably close mean values of 2.58, 2.63, 3.22, 3.27, 3.39, 3.40 and 3.44 as showed on the aforementioned table above. The noticeably represented mean scores of the measurement items of Store equipment and storage indicator suggest that respondents in the AARHB believe that lower efforts have been made by their individual facilities to enhance pharmaceutical store management performance in the case of Store equipment and storage both in the cartons and products up off the floor and protected from water and dust and storage area that is dedicated specifically to product handling the mean score is lower suggesting that relatively lower efforts have been exerted. This implies the fact that there are no attempts made by the AARHB hospitals.

In the rest case of Store equipment and storage the score is moderate suggesting that relatively moderate efforts have been exerted. This implies the fact that the attempts made by the AARHB hospitals are not as such considerable affecting to its.

4.3.3 Inventory Management Perspectives

Third research question: What is the performance of AACAHB pharmacy store inventory management?

Table 4.4 Inventory management Indicator measurement items mean and standard deviation

Inventory management	Mean	Std. Deviation
Store managers updated paper or electronic inventory records for each receipt and issue	3.78	0.927
In our store corresponding Bin cards are maintained in the storerooms	3.80	0.943
In our store accurately maintained-audit a sample and cross cheek the sample on corresponding bin card	3.73	1.036
In our store products organized according to FEFO or FIFO	3.97	0.984

4.3.3.1 Respondents' Perception on Inventory Management Indicator

The mean values of each of the measurement items of Inventory management indicator were calculated between 3.73 and 3.97 with almost comparable standard deviations that range between 0.927 and 1.036. The highest mean value is registered in the case of products organized according to FEFO or FIFO, store corresponding Bin cards are maintained in the storerooms and followed by Store managers updated paper or electronic inventory records for each receipt and issue corresponding Bin cards are maintained in the storerooms and then mean score for accurately maintained-audit a sample and cross cheek the sample on corresponding bin card. The scores of mean scale for all Inventory management indicators. Which has very comparably close mean values as shown on the aforementioned table. So they suggest that respondents are rating their respective facility store performance as a little bit higher in the case of their evaluation regarding all Inventory management.

4.3.4 Storage condition perspectives

Fourth research question: What storage conditions are present in AACAHB government hospitals pharmacy store?

Table 4.5 Storage condition Indicator measurement items mean and standard deviation

Storage condition	Mean	Std. Deviation
Our store sufficient capacity for cold chain products	1.92	0.656
Temperatures are monitored for each discreet storage unit	2.06	0.496
We are designated area for flammable/hazardous items	2.11	0.476
we are keep Flammable/hazardous items in separate area away from the main buildings	2.00	0.629
We are kept high-value commodities in a locked or caged area	3.20	1.077
We are access to lock up controlled substances in limit storage area	3.82	1.090
We are separates unusable pharmaceuticals from usable commodities	3.82	1.000

4.3.4.1 Respondents' Perception on Storage Condition Indicator

The result show that the mean values of each of the measurement items of special storage indicator were calculated between 1.92 and 3.82 with standard deviations that range between 0.476 and1.09. The lowest mean value is registered in the case of store sufficient capacity for cold chain products, keep Flammable/hazardous items in separate area away from the main buildings, Temperatures are monitored for each discreet storage unit and designated area for flammable/hazardous items scored comparably close mean values of 1.92, 2.00, 2.06 and 2.11respectively. While the scores of kept high-value commodities in a locked or caged area is moderate its mean values is 3.20. The highest mean value is registered in the case of access to lock up controlled substances in limit storage area and separates unusable pharmaceuticals from usable commodities.

The scores of the scale of special storage indicator for store sufficient capacity for cold chain products, are keep Flammable/hazardous items in separate area away from the main buildings, Temperatures are monitored for each discreet storage and are designated area for flammable/hazardous items. Which has very comparably close mean values of 1.92, 2.00, 2.06 and 2.11 as depicted on the aforementioned table. So they suggest that respondents are rating their respective facility pharmacy store performance as lower efforts have been exerted. This implies the fact that there are no attempts made by the AARHB hospitals. As in the case of their evaluation regarding kept high-value commodities in a locked or caged area is moderate effort is exerted.

4.3.5 Security and Safety Perspectives

Fifth research question: What is the strength security and safety of the government hospitals in Addis Ababa city administration pharmacy store?

Table 4.6 Security and safety Indicator measurement items mean and standard deviation

Security and safety	Mean	Std. Deviation
We are access to limited to only designated staff	3.32	0.896
We are intact and burglar proofed windows	2.05	0.619
Firefighting equipment is available and do the labels on the firefighting equipment	2.45	0.629
Staff are trained on how to use the firefighting equipment	2.36	0.598
We are used personal protected equipment in our store	1.94	0.609
In our warehouse there are guidelines or standard operating procedures (SOP) in place that provide instructions to prevent theft, deterioration or leakage at a given storage location.	3.69	1.131
We are remove damaged and expired products from inventories immediately and dispose of them using established procedures	3.33	1.214
We are away latex products from electric motor and fluorescent lights	3.04	1.117

4.3.5.1 Respondents' Perception on Security and Safety Indicator

The finding result show that the mean values of each of the measurement items of Security and safety indicator were calculated between 1.94 and 3.69 with standard deviations that range between 0.598 and1.214. The lowest mean value is registered in the case of used personal protected equipment in our store, intact and burglar proofed windows, Staff are trained on how to use the firefighting equipment and Firefighting equipment is available and do the labels on the firefighting equipment and followed by are away latex products from electric motor and fluorescent lights, access to limited to only designated staff, and remove damaged and expired products from inventories immediately and dispose of them using established procedures then mean score for In our warehouse there are guidelines or standard operating procedures (SOP) in place that provide instructions to prevent theft, deterioration or leakage at a given storage location.; while the scores of away latex products from electric motor and fluorescent lights, access to limited to only designated staff, remove damaged and expired products from inventories immediately and dispose of them using established procedures and scored comparably close mean values of 3.04,3.32 and 3.33 respectively. The highest mean value is registered in the case of warehouse there are guidelines or standard operating procedures.

The scores of the scale of Security and safety indicator for away latex products from electric motor and fluorescent lights, access to limited to only designated staff, remove damaged and expired products from inventories immediately and dispose of them using established procedures. Which has very comparably close mean values of 3.04,3.32 and 3.33 as depicted on the aforementioned table. So they suggest that respondents are rating their respective facility pharmacy store performance as moderate, as in the case of their evaluation regarding the used personal protected equipment in our store, intact and burglar proofed windows, Staff are trained on how to use the firefighting equipment and Firefighting equipment is available and do the labels on the firefighting equipment is lower effort is exerted.

4.4 Reliability Test

Internal consistency of the items constituting the items of the dimensions are checked by using Cronbach's alpha. Accordingly, the reliability of the study instrument is determined by evaluating the average correlation among items in the scales of the respective dimensions suggested by (Chen et al., 2004).

Table 4.7 Cronbach's alpha

Dimension/Scale	**No. of Items**	**Cronbach's Alpha**
Operations capacity and layout	6	0.8
Store equipment and storage	7	0.8
Inventory management	4	0.9
Special storage	7	0.7
Security & Safety	8	0.7

Source: Survey Result

The above table implies that all alpha values for the respective dimensions were well above the suggested cut-off value of 0.7 (Cronbach, 1951), hence implying the reliability of the instrument that measures the study constructs, i.e. the items under the respective scales could properly assesse the dimension of concern. The lowest alpha value was 0.7 and it was in the case of Special storage, and Security & Safety indicator, whereas the highest was for Inventory management indicator with the alpha value of 0.9.

4.5 Summarized the Finding Result

The finding result indicated that the Composite scores of mean and standard deviation were also calculated for the five scales of pharmaceutical store performance indicators (dimensions), namely Layout & Operations Capacity, store infrastructure, Equipment & Storage, Storage condition, Inventory Management and Security & Safety indicator. The resulting merged scores of mean and standard deviation are presented on Table 4.7 as follows.

Table 4.8 Composite scores of mean and standard deviation

Dimension/Scale	**Mean**	**Standard Deviation**
Layout & Operations Capacity	3.089	0.992
Store infrastructure, Equipment & Storage	3.133	0.985
Storage condition	2.705	0.815
Inventory Management	3.822	0.973
Security & Safety	2.773	0.888

4.5.1 Respondents' Perception on Store Performance

The finding result show that the mean values of each of the scales of pharmaceutical store performance were calculated between 2.705 and 3.822 with almost comparable standard deviations that range between 0.815 and 0.992. The lowest mean value is registered in the case of Storage condition indicator, and Security & Safety scored comparably close mean values of 2.705 and 2.773 respectively. Layout & Operations Capacity and store infrastructure, Equipment & Storage indicators are moderate scored comparably close mean values of 3.089 and 3.133 respectively while Inventory Management indicator highest scored mean values of 3.82.

The mean score of the scale of pharmaceutical store performance in the case of Inventory Management indicator is 3.82 as shown on the aforementioned table with the lowest

standard deviation of 0.973. This score is very marginally higher relative to the mean scores of the other dimensions. However, the fact that the composite mean score is only 3.82 suggests that respondents are rating their hospitals pharmaceutical store performance as moderate and a little bit above as measured by this key performance indicator. The same is true in store infrastructure, Equipment &Storage and Layout & Operations Capacity, it is also in a moderate level whereas in the case of Storage condition indicator, and Security & Safety indicator low effort have been exerted by the pharmaceutical store in AACAHB hospitals.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

This research was conducted in an attempt to reveal the status of pharmaceutical store Performance in AACAHB hospital pharmacy by making particular emphasis to the assessment of pharmacy store performance.

Based on the findings the following conclusions are drawn;

A total of 97 respondents have filled and returned the survey questionnaire making the response rate about 80.8%. About 56.6% of the respondents are females, while males constituting the remaining 45.4% of the total respondents. About 95.9% of the respondents have served one year and above in their current position as a youngest hospital implying that the major portion of the response is obtained from respondents who had relatively better information regarding the pharmaceutical store practices of their respective hospital have with knowledge of their pharmaceutical store performance.

Majority of respondents of AACAHB government hospitals pharmacy staffs perceived that storage performances are moderately practiced. However, they perceived that store lack fully implementation of Layout & Operations Capacity, store infrastructure, Equipment & Storage, Storage condition, and Security & Safety.

This study mean score of the scales of the dimensions, namely Layout & Operations Capacity indicator, store infrastructure, Equipment & Storage, Storage condition, Inventory management and Security & Safety, shown that the respondents observe that Addis Ababa government hospitals pharmacy exert relatively lower efforts in Storage condition dimension, and Security & Safety dimension store performance, whereas their perceived evaluation of the respective hospitals attempt, as expressed by the composite mean values, suggested that moderate efforts have been exerted by hospitals in enhancing pharmaceutical store performance, the respondents' perceived evaluation implies that the

Inventory management dimension was at best rated as moderate and a little bit above in improving performance of their store.

Generally, the study findings have suggested that the levels of pharmaceutical store performance are moderate in the case of Addis Ababa government hospitals pharmacy in terms of the five key performance indicators as the perceived evaluation of the respondents imply. It has also shown that, though assessment of the pharmaceutical store performance based on dimension of Inventory Management is comparatively in a better position. Respondents also implied that the performance implication of capacity of store is based on the situation and they all have different point of view among the five key performance indicator that can heavily contributed to the overall performance of a store.

5.2. Recommendations

Based on the conclusion of the study the following points are recommended: -

As shown from the findings of the study, pharmaceutical store management performance category of hospitals is approximately rated as moderate.

The study supported that a lot of importance need to be directed to pharmaceutical store management and performance assessment based on key performance indicators and AACAHB hospitals should maintain the effort made on Inventory Management in enhancing performance of their store which is still need to be improved and also the store manager of AACAHB hospitals pharmacy store should know the level of efficiency in the store.

The study recommended that a lot of emphasis need to be directed to Storage condition, and Security & Safety indicator in order to achieve for improved storage condition area and Security & Safety.

The hospitals should assure Security & Safety aspects through each and every activities of the store like used personal protected equipment in our store, intact and burglar proofed windows and Firefighting equipment is available and do the labels on the firefighting equipment.

The hospitals should give emphasis for Storage condition included each and every activities of the store like sufficient capacity for cold chain products, Temperatures are monitored for each discreet storage unit, designated area for flammable/hazardous items and keep Flammable/hazardous items in separate area away from the main buildings.

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Appendix

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS SCHOOL OF COMMERCE

DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT

QUESTIONNAIRE

Dear participant, greetings to you.

My name is Teshome Ayele from Addis Ababa University School of commerce conducting a research on 'Assessing the performance of pharmaceutical store management' (the case of Addis Ababa regional health bureau hospitals pharmacy store). Our university supported the execution of the study. The aim of this study is to assesses pharmaceutical store management and to assesses the performance of pharmaceutical store management under the governmental public hospitals found in Addis Ababa City Administration Health Bureau. This study will help in providing a baseline data for other researchers on performance of pharmaceutical store management. It can also have a role in helping stakeholders improve the situations.

You are selected to participate in this study to give me your genuine responses regarding pharmaceutical store management and thus your participation is purely based on your willingness. If you choose to take part in the study you may respond to all the questions or you may not answer questions you don't want to, and have the right to stop the interview as well as the assessments at any time. You also have the right to choose not to take part in this study. Participating in this study will not have any risk or harm. Whether you are willing to participate, refuse or decide to withdraw later, you will not be subjected to any maltreatment.

If you agree to participate, you will be required to respond to our questions written in the tools. Any information that you provide will be kept confidential, names will not be written or specified and all the questionnaires will be coded for anonymity. The data will not be used for purposes other than the study. Your willingness and active participation is very important for the success of this study. If you have any question you can ask me now and you can also contact the principal investigator. Thank you

Best Regards

Teshome Ayele

Note: If you need further explanation please do not hesitate to contact me through my personal phone +251911919296 or in person.

Section I: Respondents Profile:

1. Age: ☐ 18-25 years ☐ 26-35 years ☐ 36-45 years ☐ above 45 years
2. Sex: ☐ Male ☐ Female
3. Educational Qualification: ☐ Below college diploma ☐ College diploma ☐ First Degree (BSc, BA) ☐ Second Degree (MSc, MA) ☐ PHD and above
4. Profession of in-charge/coordinator/

   ☐ Pharmacist ☐ Chemist ☐ Logistics and supply chain

   ☐ Other Specify _____
5. Current Position_____
6. Year of service in the current position:

   ☐ Below 1 year ☐ 1 to 2 years ☐ 2 to 5 years ☐ Above 6 year

Section II: Main Questionnaire

Please indicate your choice by putting the check mark (x) on the appropriate cell. Where, **1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.**

Please indicate the degree to which you agree with the following statements regarding the pharmaceutical store performance in your hospital. (Please take your key store activities in mined while rating the statements)

No	**VARIABLES**	**1**	**2**	**3**	**4**	**5**
	Operations capacity and layout					
1	In our store receiving and dispatch areas separated	**1**	**2**	**3**	**4**	**5**
2	Receiving area sufficient space to arrange and sort an incoming delivery	**1**	**2**	**3**	**4**	**5**
3	We are designate for expired or damage goods	**1**	**2**	**3**	**4**	**5**
4	Our storage items are picked accurately from storage based on a requirement and then placed in to the appropriate truck	**1**	**2**	**3**	**4**	**5**
5	We are arrange items with identification label, expired date and manufacturing dates clearly visible	**1**	**2**	**3**	**4**	**5**
6	Our store inventories are placed in the correct location or Bin	**1**	**2**	**3**	**4**	**5**
	Store infrastructure, equipment and storage					
7	Our store sufficient pallets available	**1**	**2**	**3**	**4**	**5**
8	Our storage system utilized (shelving, racks or pallet stacking)	**1**	**2**	**3**	**4**	**5**
9	In our store cartons and products up off the floor and protected from water and dust	**1**	**2**	**3**	**4**	**5**
10	Most of the time Store managers can look for opportunities to improve storage capacity (e.g., remove expired products and reorganizing)	**1**	**2**	**3**	**4**	**5**

11	Accidents are not occurred in our store like physical accident on daily laborers, store personals and also on equipment	**1**	**2**	**3**	**4**	**5**
12	Most of the time Store manager maximize the use of the storage space, or request a re- evaluation of layout, material flow, shelves disposition, etc.	**1**	**2**	**3**	**4**	**5**
13	storage area that is dedicated specifically to product handling	**1**	**2**	**3**	**4**	**5**
	Storage condition					
14	Our store sufficient capacity for cold chain products	**1**	**2**	**3**	**4**	**5**
15	Temperatures are monitored for each discreet storage unit	**1**	**2**	**3**	**4**	**5**
16	We are designated area for flammable/hazardous items	**1**	**2**	**3**	**4**	**5**
17	we are keep Flammable/hazardous items in separate area away from the main buildings	**1**	**2**	**3**	**4**	**5**
18	We are kept high-value commodities in a locked or caged area	**1**	**2**	**3**	**4**	**5**
19	We are access to lock up controlled substances in limit storage area	**1**	**2**	**3**	**4**	**5**
20	We are separates unusable pharmaceuticals from usable commodities	**1**	**2**	**3**	**4**	**5**
	Inventory management					
21	Store managers updated paper or electronic inventory records for each receipt and issue	**1**	**2**	**3**	**4**	**5**
22	In our store corresponding Bin cards are maintained in the storerooms	**1**	**2**	**3**	**4**	**5**
23	In our store accurately maintained-audit a sample and cross cheek the sample on corresponding bin card	**1**	**2**	**3**	**4**	**5**
24	In our store products organized according to FEFO or FIFO	**1**	**2**	**3**	**4**	**5**
	Security and safety					
25	We are access to limited to only designated staff	**1**	**2**	**3**	**4**	**5**

26	We are intact and burglar proofed windows	**1**	**2**	**3**	**4**	**5**
27	Firefighting equipment is available and do the labels on the firefighting equipment	**1**	**2**	**3**	**4**	**5**
28	Staff are trained on how to use the firefighting equipment	**1**	**2**	**3**	**4**	**5**
29	We are used personal protected equipment in our store	**1**	**2**	**3**	**4**	**5**
30	In our warehouse there are guidelines or standard operating procedures (SOP) in place that provide instructions to prevent theft, deterioration or leakage at a given storage location.	**1**	**2**	**3**	**4**	**5**
31	We are remove damaged and expired products from inventories immediately and dispose of them using established procedures	**1**	**2**	**3**	**4**	**5**
32	We are away latex products from electric motor and fluorescent lights	**1**	**2**	**3**	**4**	**5**