Addis Ababa University, School of Commerce
Logistics and Supply Chain Management Graduate Program

ASSESSMENT OF WAREHOUSEING PRACTICES: A CASE OF FINFINE FURNITURE FACTORY S.Co

A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF ART IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT.

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June, 2017
Addis Ababa, Ethiopia

Declaration

I, Asemelash Teka Kidane declare that this paper is a result of my independent research work on the topic entitled **"Assessment of Warehousing Practices –A Case Study of Finfine Furniture Factory (3F) S.Co "** in partial fulfillment of the requirements for the Degree of Masters of Art in Logistics and Supply Chain Management at Addis Ababa University. This work has not been submitted for a degree to any other university. All the references are also duly acknowledged.

Asemelash Teka

Signature_____

Date: _____

Certification

This is to certify that **Asemelash Teka Kidane** has carried out this research work on the topic entitled **"Assessment of Warehousing Practices – A Case Study of Finfine Furniture Factory (3F) S.Co"** under my supervision. This work is original in nature and has not been presented for a degree in any University and it can be submitted for the partial fulfillment of the requirements for the award of the degree of Masters of Art in Logistics and Supply Chain Management.

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Addis Ababa University, School of Commerce
Logistics and Supply Chain Management Graduate Program

THESIS APPROVAL FORM

Assessment of Warehousing Practices – "A case of Finfine Furniture Factory (3F)"

By

Asemelash Teka Kidane

Approved by Board of Examiners and Advisor

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Sincerely,

Asemelash Teka
Addis Ababa, May 2017.

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List of Acronyms/ Abbreviations

3F - Finfine Furniture Factory S.Co

DC- Distribution Center

GIN- Good Issuing Note

GRN- Good Received Note

GTN- Good Transfer Note

SCC- Supply Chain Council

SCM- Supply Chain Management

SKU- Stock Keeping Units

SPSS - Statistical Package for Social Science

TMS- Transportation Management System

W&D- Warehouse & Distribution

WMS- Warehouse Management System

Abstract

The purpose of this research is to assess the existing warehousing practices of Finfine Furniture Factory (3F). The researcher prefers to use a descriptive research type, which helps to use both qualitative and quantitative data analysis. Furthermore, from the point of view of time, the research is one-time research (cross-sectional) research. The target population is 70 employees and they were taken using purposive sampling methods. Questionnaires, interview, as well as observation were used to collect primary data. The researcher were validate the research by pilot testing of the questionnaires through distributing the questionnaires for some staff members of the company who involved in warehousing practices as well as check the validity of the interview questions via conducting a pre-interview to a few staff members the company. Then, the collected data were analyzed by using IBM SPSS statistics 22, such as percentages, frequencies, mean and standard deviation and the analyzed data were presented in tables and charts. The findings showed that, in its current form, the warehousing practices of the case company can be divided according to the five warehousing activity which is: Receiving, Put-way, Storage, Order picking, and Shipping. Moreover, results of the study revealed that even though respondents rating as a moderate or a little bit above the company overall warehousing practices, there are also so many various challenges in performing those warehousing activity: lack of adequate warehousing facility, lack of information technology infrastructures, lack of training, lack of manpower (labor) and warehousing personnel"s Moreover, there are also key issues; cube utilization, aisles width, and excess inventory and how the case company strive to maximize their storage space and the utilization of airspaces. Despite the limitation, the study is believed to create awareness about the concept, principle and practices of warehouse management in the case company. Thus, the Government of Ethiopia, academicians and other concerned organizations which assist Ethiopia in its effort to reduce poverty and foster development should assist the sector by providing/sponsoring effective warehouse management training for business leaders and investors so that the firms will increase their competitiveness in global marketplace, contribute to the economic development of the country and environmental sustainability.

Key words: Warehousing Practices, Warehousing Management, Warehousing Activity

Chapter 1: Introduction

1.1. Background of the Study

Today‟s business environment requires implementing innovative solutions to effectively manage increasingly complex warehouse management activities while simultaneously reducing operational expenses (John. et al., 2011). A warehouse is a facility in the supply chain to consolidate products to reduce transportation cost, achieve economies of scale in manufacturing or in purchasing (Bartholdi. et al., 2006) or provide value-added processes and shorten response time (Gong. et al.,2008).

According to Tompkins (1998), the primary functions of a warehouse are receiving goods from a source, storing them until they are required, picking them when they are required, and shipping them to the appropriate user. Over the years, warehousing has developed from a relatively minor facet of a firm‟s logistics system to one of its most important functions (Grant et al., 2006). Facing the challenge of providing customers with an increasing assortment of products and reducing holding time of materials and parts, the focus of warehousing has shifted from passive storage towards strategically located warehouses providing timely and economical inventory replenishment for customers (Bowersox et al., 2013). Warehousing plays a vital role in the supply chain in providing a desired level of customer service at the lowest possible total cost (Grant et al., 2006).

According to John.et al., (2011), warehouses occupy strategic positions between suppliers and customers. Oftentimes, warehouse operators are the last personnel to see and touch products before final delivery. As such, they are the final entity to inspect product quality, condition, and count, and verify documentation accuracy. During any time of receipt, put away, storage, picking, or loading products are vulnerable to cost increases. It is the efficiency, accuracy, and overall customer orientation of the warehouse operator that ultimately influences final customer perception and reality of quality and cost.

Warehouse operations contribute to the overall total cost of managing a supply chain, and as such, the trade-offs between warehousing costs and services to that of other critical functions of the firm must be evaluated. It is when warehousing contributes to reduced costs and improved service, flexibility, and responsiveness that warehouses become more valued to the organization and supply chain as a whole. Most important, warehouses impact the receiving customer in many critical ways. Frontline warehouse personnel may be the final customer

service defense in ensuring product accuracy, quantity, timing of shipment and delivery, accuracy of documentation, and overall product conditionall of which impact total cost and customer perception of the brand (Scott. et al., 2014). The objective of warehousing is to minimize the cost of labor, space, and equipment in the warehouse while meeting the cycle time and shipping accuracy requirements of the customer service policy and the storage capacity requirements of the inventory play (Michael. et al., 2007).

A well implemented warehousing management system helps in coordinating operations in the stores. This is imperative in ensuring smoothing of production and this benefits the organization from the economies of scale and improved customer service. Well implemented warehousing systems are designed to help in the specification of inventory procedures, operation and control (Forger 2004). As indicated by Richards (2014), warehouses have, in the past, been constantly referred to as cost centers and rarely adding value. The movement of production to the Far East, the growth of e-commerce and increasing demands from consumers has seen a step change in warehouse operations. Warehouses are now seen as a vital link within today‟s supply chains. In fact, as stated in a survey by Motorola (2013):

> *fewer organizations continue to view warehouses and DCs simply as commoditized links between end points of the supply chain. Warehouses are no longer necessary evils that are fundamentally cost centers. The movement from linear to complex, multi-node supply chains recognizes this shift in perception, and is being driven by greater volatility, constrained capacity, evolving regulations, major shifts in customer demographics and buying patterns, and increasing demanding customer and supply requirements. Warehouses today can drive competitive differentiation and, by doing so, increase profitable growth.*

In a supply chain, warehousing function is very critical as it acts as a node in linking the material flows between the supplier and customer. In today‟s competitive market environment companies are continuously forced to improve their warehousing operations. Many companies have also customized their value proposition to increase their customer service levels, which has led to changes in the role of warehouses. Even though different reasons as well as alternative solutions were proposed by many scholars the pressure remains on warehouse administrators to increase productivity and accuracy, reduce cost and inventory whilst improving customer service and, in Ethiopia still the case is under question which needs further research in the sector.

1.2. Statement of the Problem

Warehousing represents one of the most important assets that most businesses possess, because the turnover of inventory represents one of the primary sources of revenue generation and subsequent earnings for the company. In the manufacturing companies, nearly 60% to 70% of the total funds employed are tied up in current assets, of which inventory is the most significant component (Carter, 2002). Thus, it should be managed in order to avail the inventories at right time in right quantity. Moreover, according to Heung and Gyu (2006), Warehousing takes up to between 2% and 5% of the cost of sales of a corporation and with today‟s highly competitive global business environment organizations are emphasizing on return on assets, and hence minimizing warehousing costs has become an important business issue. Many firms are automating their basic warehousing functions to achieve the increase in through put rates or inventory turns required for their warehousing operations to be cost effective.

Warehouses are a substantial component of logistic operations, and an important contributor to speed and cost in supply chains. While there are widely accepted benchmarks for individual warehouse functions like order picking, little is known about the overall technical efficiency of warehouses. Lacking a general understanding of warehouse efficiency and the associated causal factors limits organizations ability to identify the best opportunities for improving warehouse practices (Andrew Johnson and Leon Mcginnis, 2010).

Major and minor mistakes in warehousing can result to high losses. Incorrect storage can damage the goods. If the damaged goods are sold, they will either be sold in a much lower price or not be sold at all. The manufacturers will not be able to get back their investments. Failure to deliver the goods to the right destinations will cause the business to cover another round of delivery costs to do two things: to bring back the wrong goods and to deliver the right ones. Due to delays, goods can get damaged and intended recipients may not want to accept and pay for the delivery. Another adverse effect of wrong warehousing is that it can destabilize the prices of goods. If there is not enough supply due to the incompetence of the warehousing management, the prices of goods may rise to meet the unchanged demand of the consumers.

Based on short visit observation of the company, the researcher observe that, in the warehouse of the given company its evident that there is a sign of poor warehousing practices

for instance; some storage areas were overfilled while others are underused (poor layout), absence of information communication technology infrastructure, poor warehousing facilities (facility looks jumbled and unorganized) as well as messy warehouse aisles (pallets, shrink wrap, etc.) and lack of basic and modern automatic guide machineries. Furthermore, most of the warehousing activities were performed through manually and such type of problems will create insufficient movements of the items, lead to great exposure of potential injuries, high time exhausted in the process of loading/unloading items, consumes too much manual labor.

Since, Finfine Furniture Factory (3F) S.Co follows the principle of producing for orders and stock, occasionally there is an excess inventory in the storage and these lead to bad exploitation of working area, barrier of movement in warehouse and creating extended lead time of responding customer service which result to high losses. Thus, this particular study is concerns in assessing the current warehousing practices of Finfine Furniture Factory (3F) S.Co. It is also initiated to fill the knowledge gap that exists due to limited studies on the area.

1.3. Research Questions

In order to attain the research objective the following research questions are proposed:

- What are the warehousing activities performed by Finfine Furniture Factory (3F) S.Co?
- How does the selected company organize its warehouses activities?
- What are the major challenges in warehousing practices of the selected company?
- What are the key issues concerning warehouse management, and how does the company handle these issues?

1.4. Objectives of the Study

1.4.1. General Objective

The general objective of this research is to assess the current warehousing practices of Finfine Furniture Factory (3F) S.Co.

1.4.2. Specific Objectives

The specific objectives of the study are to:

- Assess warehousing activities performed by the selected company.

- Evaluate the current warehouse practices of the case company from the five main activities of warehousing; receiving, put-away, storage, order- picking, and shipping perspectives.
- Identify major challenges in warehousing practices of the selected company.
- Discover key issues concerning warehouse management as well as assess how the company handles these issues.

1.5. Scope of the Study

This study is concerns in assessing the existing warehousing practices of FinFine Furniture Factory (3F) S.Co from the five main activities of warehouse; receiving, put-away, storage, order- picking, and shipping. Since the company has two main warehouses, the one which is located in Mirab Shewa Zone of the Oromia Region "Alem Gena" town and the other which located in Addis Ababa city around "Saris" inside the compound of company"s headquarter and additional six mini warehouses (the extensions of the main warehouse) throughout the country. However, due to the obvious time and financial constraints the research not covers up the entire six mini warehouses. Over and above the study were focus on both two main warehouses as well as three mini warehouses of the company to be precise; Piazza, Bambis and CMC.

1.6. Significances of the Study

The findings of this study may benefit the company in understanding its warehousing practices and provides a ground for the company to reduce its internal and external costs that could be resulted due to poor warehousing practices. Moreover, the finding and the recommendation of the study could help the company in a decision making related to its warehouse administration. Furthermore, lack of research in the field of supply chain management (especially in warehouse management) showed that the area has not received the attention that it deserves though having invaluable advantage. Therefore, the study may possibly help by providing background material for future research in similar or in other sectors or industries, and anyone can or will use the findings for reference purposes in future related studies.

1.7. Limitations of the Study

Lack of current research articles or literatures to be reviewed in the area of the study is one of the main limitations of this study. The selected study design (qualitative method) and target population (employing small and purposively selected study participants), data collection technique and tools can be considered as the other limitation of the study. Besides, due to limitation of finance, time and manageability, geographic distance, and experience of the researcher the study is limited only in assessing the warehousing practices from the stand point of the focal company.

1.8. Operational Definition of Terms and Concepts

The basic terms applied in this study were based on the following definition:

- **Warehouse:** is a place where item are received, stocked and dispatched (Aronovich, et al., 2010).
- **Warehouse management:** has been defined as the combination of planning, decision-making and controlling inbound, storage and outbound flows (Faber, 2013).
- **Materials Management** is the single manager organization concept embracing and planning, organizing, motivating and controlling of all those activities and personnel principally concerned with the flow of materials in to an organization (Fearon, 1973).
- **Supply Chain Management** is a network of relationships, with the goal to deliver superior value, i.e., the management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole (Christopher 2005).

1.9. Organization of the Study

This research critically analyzes the warehousing practices of the case company. It is structured around five chapters. Each chapter has its own sub units. The first chapter deals with background of the study, statement of the problem, objective of the research, significance, and limitation of the study. Chapter two present the review of literature. Chapter three research methodologies, chapter four focuses on data analysis and discussions and finally, chapter five present conclusions and recommendations of the study.

Chapter 2: Literature Review

In this chapter, theories related to the research issues which are relevant to the present thesis work are described. The theoretical framework for warehousing is briefly set up discussing all the important factors related to warehousing. The purpose of this part of the thesis work is to set up a basis for theoretical frame of warehousing concepts. Furthermore, different author‟s ideas are discussed in order to assist and have a base ground especially for the analysis and interpretation of gathered data‟s and recommendation on the findings.

2.17. History of Warehousing

The warehousing concept takes us way back to the creation of granaries to store food, which was stored for drought and famine and this food was available for purchase in the conditions of emergency, famine, drought etc. As the European explorers began to discover new shipping trade routes all over the world, the importance of warehouses grew for the storage of products and commodities which were brought from far way places. The ports were the main locations of the warehouses, since majority of the trade between the countries was carried by ships (Tompkins. et al., 1998).

In early days man used to store excess food and keeping animals for emergency surplus. As the civilization developed, local warehouses were introduced. Normally merchandise is stored in connection with shipping, trading, and manufacturing activities. During the Middle Ages improvement in human knowledge gave rise to warehousing to handle the storage of shipped items. The first known major commercial warehouse was built in Venice, a center of major trade routes. In late 1800‟s in the United States, transportation between port cities and inland cities were effectively provided by railroad. Freight cars were used as warehouses on wheels, and were especially used in grain harvest season. Shortages in freight cars induced the railroad companies to partition the transportation and warehousing functions. During this time period because of monopoly on both warehousing and freight by railroad companies favored large corporations, giving them free warehousing services with the use of the railroads. The warehousing facility was provided as an additional service to transportation, and the service so provided was part of the clearance terminal. The word terminal describes the warehouses were located in the center of the city, normally close to the wholesale market district and railroad depot (Tompkins. et al., 1998).

By the end of World War I, hand trucks were used for material handling in warehouses and stacking was done by hand, and stacking heights were designed in 8-to 12-foot range. During World War II, the fork lift truck and wooden pallets were introduced. Stacking height of merchandise was increased to 30 feet, nearly a 300 percent increase due the mass production of forklift truck.

Warehousing systems have seen a continuous growth throughout the history, they have been moving forward from local storehouses during the middle ages to multimillion dollar facilities. In 1960s and 1970s in the US automated warehousing meant automated storage/Retrieval systems (AS/RS). The main factor which gave rise to this development was the doubling of the value of business inventories between 1962 and 1972 and the value was tripled between 1972 and 1982. After the late 1980s the AS/RS systems became obsolete and more emphasis was paid on reducing inventories, small batch production and Just in time delivery (Tompkins. et al., 1998).

2.18. Changing Trends of Warehousing

Due to the changing trends in the businesses, warehousing and distribution operations should adopt to the emerging changes and growing needs of the customers. The term „Globalization" brought rigorous changes in the field of logistics. The distribution operations now pay more emphasis on fewer inventories, smaller order sizes, larger SKU catalogues, quicker order turnaround, increased customized packaging and value adding services. Once the businesses concentrated only on local distribution centers and now all the companies give more importance on having more globalized distribution centers, and instead of having single network channel, they are having multiple distribution channels.

In order to cope to these changing trends every second, most of the companies have deployed new technologies such as Warehouse management systems (WMS) and Transportation management systems (TMS) and some have decided to redesign the processes and facilities to meet the emerging requirements as well as to reduce costs and improve service levels to the customers at the same time. Some large scale businesses have gone one step ahead and decided to deploy automation of the whole warehousing operations. Some have already opted to outsource all their warehousing operations to third party logistics provider (Michael. et al., 2007).

2.19. Why have a warehouse?

According to (John J. Bartholdi, Iii and Steven T. Hackman, 2011) a **warehouse rationale** discussed below:

Why have a warehouse at all? A warehouse 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. Warehouses, 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. Surges 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 warehouses ship product at a prodigious rate (some conveyors within their warehouses move at up to 35 miles per hour). After the selling season their warehouses spend most of their time building inventory again for the following year. Similarly, warehouses 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, warehouses 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.

Warehouses 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, the economics of manufacturing may dictate large batch sizes to amortize large setup costs, so that excess product must be stored. Similarly, warehouses provide a place to store a buffer against unreliable demand or price increases.

- ***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 warehouse 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 warehouses, where the product must be handled anyway, than in a thousand retail stores, where this could distract the workers from serving the customer.

2.20. Defining of Warehouse

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

According to Jessop. et al., (1986), Store is a temporary location for materials needed for operational purposes, and should be planned and organized in such a way that the period of residence of each stock item is as short as possible consistent with economic operation. Besides, Storage is the management of storehouse and stockyards, the operation of handling and storage equipment and the safe custody and protection of stock as well as store keeping is those procedures and means whereby goods are received, identified, stored, issued, accounted for, and replenished in accordance with defined levels of service and with due regard for the statutory requirements for health and safety (Tompkins. et al., 1998). Whereas According to Fessha, (2004), Store keeping is the activity of receiving or distributing stores or supplies. The duty of the stores is to receive, store and issue materials. The stores is alienated in to receiving section, tools stores ,general stores, raw materials stores, finished part stores and so on. The receiving section receives all incoming materials, checks the correctness of the quantity received, arranges for inspection and thereafter sends the materials to the respective stores along with a report called Goods Inward Note or Materials Receipt Note.

Recent developments in marketing field have led to the development of warehouse designing style, where the same warehouse is used for warehousing and also as a retail store. These types of warehouses are equipped with tall heavy duty industrial racks, with the items which are ready for sale are placed in the bottom parts of the racks and the palletized and wrapped inventory items being usually placed in the top parts. Exporters/manufacturers are using

warehouses as a point of developing retail outlets in a particular region or country. The above concept cuts down the end cost of the product to the consumer which in turn enhances the production sale ratio. Warehousing concept is used as a sharp tool by manufacturers to reach directly to consumers by avoiding or bypassing importers or other middle agencies (Tompkins. et al., 1998). Materials are equivalent to money and great attention has to be paid to the proper storage so that they are free from damage and possibilities of pilferage. The stores also maintain a set of records called bin cards. The accuracy of the bin card balance and physical balance is verified from time to time by accounts staff or internal auditors. Finally, it is the responsibility of the stores to send a report to the purchase section /Stock control when the stock of an item is exhausted (Nair, 1990).

According to Ballot (1980), the storage area may be incorporated within, adjacent to, or away from receiving. The factors determining storage location or locations must be considered by each company. Materials must be located in stores so that all previously received quantities of the materials are withdrawn first. First received quantities are the first issued and deterioration and damage are minimized. Storage space should be used effectively through consolidation of materials and knowledge of open spaces. Stores must be a restricted area. Unauthorized persons must not have access to materials. This security must be a prime factor in design and layout of stores, pilferage and unauthorized use must be prevented, even if the latter is done with the best of intentions. The physical inventory must be the same as the book inventory.

In order to maximize efficiency it must be fully integrated with the preceding and subsequent operation i.e. goods in wards and goods issued. Instead of being considered as a loss – center it should be studied, planned and managed as profitability – center. Profits (except on direct sales) are unlikely, but, as in the case of other supplies activities, savings made here can contribute directly to company profit – if not wasted elsewhere in the business! Stores equipment must be suitable for the sage preservation and rapid issues of the materials stored. Safety in stores should be a major consideration, for this is an area with an unexpectedly high accident rate. Even in a small factory the location of the stores can affect work flow and thus productivity and profitability. The sitting of stores at the center of gravity of demand appears an attractive solution. However, particularly in a small factory, this may lead to the stores being continuously compressed by the demands for more production space surrounding it, while at the same time having to carry increasing stocks to support the increasing production (Compton, 1979).

2.21. Defining Warehouse Management

Warehouse management has been defined as the combination of planning, decision-making and controlling inbound, storage and outbound flows (Faber, 2013). Warehouses have always been paid a great deal of attention from managers due to the large potential impact it can have in creating customer value. Like most areas the key objectives for managing warehouses have changed over time to create additional competitiveness. The first objectives within warehousing related to maximizing the utilization of resources within the warehouse. The more expanded concept inventory control aimed to maximize profits while providing good customer service (Tompkins & Smith, 1998). The objective of present warehouse management is to efficiently and effectively organize the processes in a warehouse (Faber, 2013), i.e. it encompasses both the objectives of inventory control and warehousing.

Several sources imply that keeping good control over a corporation‟s warehouses is of great importance. As an example, the competitive power of an entire company as well as the complete supply chain may be derived from outstanding performance within the warehouse or distribution center (Van Den Berg, 2012). In a broader context, a company‟s warehouse operations can influence the firm‟s corporate performance in manners such as logistics costs, customer service and business alignment (Van Den Berg, 2012).

Warehousing is however a correlation between logistics cost and good customer service; the higher customer service a company aims for, the greater logistics costs one can expect, which is one of the greatest trade-offs companies face in warehouse management (Van Den Berg, 2012). Similar reasoning is presented by (Gwynee Richards, 2011) in his illustration of warehouse management trade-offs.

2.22. Role of Warehouse in Supply Chain

Since inventory holding and the customer serving are key warehouse functions which implies warehouse has an important role to play in supply chain. Some of the important roles of warehouse are to make or break bulk. Consolidation centers, cross docking centers, transshipment, product fulfilment centers, returned goods depots, some other roles like customer support, installation and repair services. The roles mentioned here are associated with some concepts like agility, production postponements and time compression which are recognized as increasing trends in warehousing. Thus inventory has important role on warehouse in modern supply chains (Baker, 2007).

Warehouses 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 companies are continuously forced to improve their warehousing operations. Many companies have also customized their value proposition to better meet customer demands, which has led to changes in the role of warehouses. 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)

2.23. Warehouse Activities

In order for the reader to get an insight of this thesis area of research, following will describe basics behind warehouse activities. The theory in this section follows general warehouse philosophy and is similar to several renowned publications in the field of warehousing, both old and new. Bartholdi & Hackman, (2011) illustrates the normal physical activities and flows in a warehouse. The inbound processes are represented by receiving and put-away whilst the outbound process includes 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.

Receiving: - is the first operation in the warehouse. This process starts by notification of the arrival of goods. Then begins process of unloading, counting, identifying, quality control, and goods acceptance (incoming inspection) related to a type and quantity by unloading staff according to the company rules. When the goods are accepted, the receipt is issued. The acceptance depends on the delivery status – the delivery date, the quality of delivery, the planned schedule which should also minimize a truck waiting time. Receiving represents about 10 % of the cost in a normal warehouse.

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 times reflects how quickly and how cost-efficient it later on will be retrieved for a customer. To do this, the warehouse 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 warehousing operating payments.

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 warehouse, regardless if it‟s dedicated or shared location. A dedicated location is a storage, which is reserved for a specific and allocated SKU. In this manner, high frequent SKUs are assigned to more convenient locations, which streamline 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.

Pick: - normally, order-picking (retrieving a SKU from storage location) represents about 55 % of total warehouse 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 warehouse. 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.

Pack/Ship: - 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 goods 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.

Cross-dock: - is referred to the activity when goods are not stored in the warehouse. 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).

Returns:-the return flow is the reversed movement in warehousing, and as e-commerce is growing (Kripashankar et al., 2013), returns will likely become a larger function in most warehouses. In general, the amount of returns in the e-commerce industry is about 25-30 % states (Bartholdi & Hackman, 2011).

2.24. Warehouse Types

The warehouse is the most common type of storage though other forms do exist (e.g., storage tanks, computer server farms). Some warehouses are massive structures that simultaneously support the unloading of numerous in-bound trucks and railroad cars containing suppliers‟ products while at the same time loading multiple trucks for shipment to customers. **Cite:** Types of Warehouses (2016). From Managing Product Movement Tutorial. KnowThis.com. Retrieved March 25, 2016 from www.knowthis.com/managing-product-movement/types-of warehouses. The five types of warehouses are:

Private Warehouse

This type of warehouse is owned and operated by channel suppliers and resellers and used in their own distribution activity. For instance, a major retail chain may have several regional warehouses supplying their stores or a wholesaler will operate a warehouse at which it receives and distributes products.

Public Warehouse

The public warehouse is essentially space that can be leased to solve short-term distribution needs. Retailers that operate their own private warehouses may occasionally seek additional storage space if their facilities have reached capacity or if they are making a special, large purchase of products. For example, retailers may order extra merchandise to prepare for in-

store sales or order a large volume of a product that is offered at a low promotional price by a supplier. Public warehouses provide storage facilities to small manufacturers and traders at low cost. These warehouses are well constructed and guarded round the clock to ensure safe custody of goods. Public warehouses are generally located near the junctions of railways, highways and waterways.

Automated Warehouse

With advances in computer and robotics technology many warehouses now have automated capabilities. The level of automation ranges from a small conveyor belt transporting products in a small area all the way up to a fully automated facility where only a few people are needed to handle storage activity for thousands of pounds/kilograms of product. In fact, many warehouses use machines to handle nearly all physical distribution activities such as moving product-filled pallets (i.e., platforms that hold large amounts of product) around buildings that may be several stories tall and the length of two or more football fields.

Climate-Controlled Warehouse

Warehouses handle storage of many types of products including those that need special handling conditions such as freezers for storing frozen products, humidity-controlled environments for delicate products, such as produce or flowers, and dirt-free facilities for handling highly sensitive computer products.

Distribution Center

There are some warehouses where product storage is considered a very temporary activity. These warehouses serve as points in the distribution system at which products are received from many suppliers and quickly shipped out to many customers. In some cases, such as with distribution centers handling perishable food (e.g., produce), most of the product enters in the early morning and is distributed by the end of the day.

2.25. Warehousing Classification

Variety is something we see every day in our life. People are different from each other. Some people to live a peaceful calm life, on the other hand some people like to rush from one meeting to another and work as an accountant for example. Just like variety being a part of everything, it is a part of warehousing as well. Warehouses can be classified depending on

the ownership or functions. According to their functions, warehouses can be classified in following main categories:

- *Raw material and component warehouses*: This is the warehouse type where the raw materials for manufacturing are held.
- *Work-in-process warehouses*: In a manufacturing company it can be needed to keep a stock for partially completed products and a work-in-process warehouse is used for this purpose.
- *Finished goods warehouses*: This is where the finished goods are stored.
- *Distribution warehouse and centers*: This is where finished products are accumulated from many different manufacturing points to be delivered as combined shipment to the customers.
- *Fulfilment warehouses and centers*: This is where items are received picked and shipped in small orders for individual customers.
- *Local warehouses*: In some circumstances it will be useful to have local warehouses to supply strictly local demands.
- *Value-added service warehouses*: This is where the value-adding process, such as labelling, marking, pricing and/or return pricing occurs. Return price is the cost when some item needs to be returned back to the supplier because of various reasons.

2.26. Warehouse Layout

Even though there might be different types of warehousing, all of the warehouses have a common point; layout. The warehouse layout has been defined as:
The design and implementation of a warehousing strategy; to use the space, equipment, labour, accessibility and protections of the items with maximum efficiency and flexibility as possible…
"System" is a word originated from the Greek term "systema: place together" and one of the best examples to system is a company, which consists of many sub systems. There are multiple descriptions for systems by business and engineering domains.
There are many other descriptions of system that can be found in the literature, more or less expressing same idea, system as it is described by Wasson (2005) is "*an integrated elements of interoperable elements, each with explicitly specified and bounded capabilities, working synergistically to perform value-added processing to enable a user to satisfy mission oriented*

operational needs in a prescribed operating environment with a specified outcome and probability of success." , while Kerzner (2009) defines a system as "a *group of elements, either human or nonhuman, that is organized and arranged in such a way that the elements can act as a whole toward achieving some common goal or objective"* As we can observe from both definitions, system is a group of elements being organized for achieving a common goal.

It is very important to have an efficient and customer satisfying logistics, which requires optimizing the warehouse layout. The objectives of layout optimization planning are:

- Space efficiency
- Efficient material handling
- Cost efficiency
- Flexibility
- Good housekeeping

In addition to the objectives that Salvendy (2001) has defined, Mulcahy (1993) brings forward more objectives. Warehouse layout objectives according to Mulcahy (1993) are as follows:

- Maximizing the space utilization
- Efficient product flow
- Ease of access to positions and inventory rotation
- Reducing annual operation costs
- Improve employee productivity
- Maintain philosophy and direction of the corporate
- Protecting the inventory
- Providing expansion
- Providing safe work environment
- Customer Satisfaction

The objectives of the layout optimization planning that were mentioned above are influenced by the limitations of the warehouse. In a warehouse: space, material handling, costs, ability to serve and the quality of working space are the limitations. The warehouse layout planning is a specialized version of facility planning, which has its own limitations and it begins with finding out the amount of space required for each and every process in the warehouse.

In normal facility planning the system input is taken into consideration. In the warehouse planning we are also supposed to have the basic elements of the warehouse layout in mind, in order to be able to succeed in the planning process, since beyond the complete system, the warehouse system is restricted by:

- The need for flexibility
- Accessibility and location of materials
- Customer response requirement
- Safety
- Rising space and labour costs

2.27. Warehouse Resources

Typical issues involved in designing and performing warehouse processes include allocating resources in terms of costs and capacity. When looking at the value of a product or service, the goal is to have the value of the end-product exceed the cost of producing it. Identifying the value added activities inside the warehousing process is an essential but demanding task. Basically, the value assessment is made by examining each activity within the process and defining its criticality to operations. The cost of the product or service includes all sources used to produce it (e.g. raw materials, labor, storage space, transportation, equipment). According to a classification by Rouwenhorst et al. (2000), it is possible to identify the following list of distinguishable warehouse resources:

- **Storage units** – Used for the storage of products e.g. pallets, trays, boxes
- **Storage systems** – May range from simple shelves up to automated cranes and conveyors**.**
- **Pick equipment** – Used for the retrieval of items from the storage system e.g. standard forklifts, reach trucks, pallet trucks.

- **Auxiliaries** – Equipment, such as barcode scanners, that support warehouse activities
- **Computer systems** – Enable computer control of processes
- **Material handling equipment** – Equipment for preparing retrieved items e.g. sorter systems, palletizers, truck loaders
- **Personnel** – Human resources that operate and control all of the prescribed resources.

Warehouse resources normally represent a sizeable capital investment. Approximately 50 percent of the costs in a typical warehouse are labor-related while facilities, machinery and storage equipment represent smaller portions of the investment (Aminoff et al., 2002). Reducing the amount of labor or pursuing higher labor productivity can be seen as a means to lowering warehouse operating costs. This is typically done by investing in expensive warehouse technologies. However, to obtain an acceptable rate of return on equipment investments, they must be selected and used properly.

2.28. Labour Management in Warehousing

An Ideal labour management measures the individual performances against standard times applied with the help of a labour management system that forms an interface between the labour management system and the time and attendance systems. The outcome results commonly in time, used by the warehouses to improve productivity. An effective labour management should support workload planning, process improvement, and in some cases, incentive schemes. A basic challenge for all warehouse managers is allocating right number of people in the right place and at the right time to produce quality work. Warehouses with more number of employees result in high labour cost, low productivity and less profits. Alternatively with less staff there is a problem of employee burnout, quality problems and higher costs. It is a proven fact that labour management could cut down the costs to a considerable level arising due to labour, warehouses with a labour management can save more on increasing resources.

The growing demand for value-added services, labelling and promotional display, packaging, reverse logistics, recycled packaging and product for rework and customer returns, had a direct impact on the warehouse costs, and thereby increasing the cost per employee. Few case studies suggest an increase in productivity with labour management. Most of the warehouses have experienced a significant performance improvement, and also stated that performance would fall back considerable without a labour management application (Dymond, 2007).

2.29. Value Adding Activities in a Warehouse

Value-Added Warehousing is a relatively new concept in the logistics industry and is based in part on bridging the gap within the existing transportation and distribution process of shipping and assembling consumer products. In essence, Value-Added Warehousing services are those which complement and enhance freight transportation, warehousing, and logistics-based industries by assembling and customizing products moving through a distribution facility. They improve product flow to reduce and often eliminate storage, while enabling customization to fit the needs of customers. Logistics-based companies which utilize Value-Added Warehousing services are typically able to lower their inventory of finished goods until company or customer orders are actually received. Overall, this process enables a more cost-effective supply chain approach to distribution, providing more flexibility and cost savings (Wills, 2007).

1) **Consolidation:** Warehouse unites these single items into a bulk order according to the manufacturers or plant requirements and then ships the unified product.

2) **Product mixing:** Normally a warehouse receives different kind of finished products from different plants, and one customer needs different mix of products which is effectively performed by warehouse.
3) **Service:** The service performed by the warehouse can be of different types starting from receiving until shipping of goods. For example some warehouse performs extra decorative things to the products before the final shipping to the customers.
4) **Contingency protection:** It is very important for the warehouses to maintain a back up data and other essential records in order to cope with any kind o situations. Normally, warehouse plans in advance for any future requirements such as inventory maintenance or storing of products or security of goods etc, thus always equipped with contingency protection.
5) **Smooth operation:** Warehouse between manufacturer and customer makes the operations very effective since different value adding activities are being performed at the warehouse. Consolidation and product mix are the two important activities which improve the customer satisfaction level and enable a smooth operation.

2.30. Computers in Warehousing

In the earlier days, computer was used to provide detailed information of the inventory levels and the other transactions like orders and invoices to the management. This was only a passive use of the computer and all the information was again printed on reams and rolls of papers which were handed over to the operating managers in order to give the overview of the inventory status of the warehouse. Nowadays, computer has been transformed into much more effective and efficient tool for warehouse management.

All the warehouses use the computer as an operating tool which is integrated with the physical and control operations of the warehouse. The computer now acts almost like a human brain and it is always online and it can receive, retrieve and provide the necessary information and at the same time updates the records which help to control the warehouse operations efficiently. This can be accomplished in real time without any time lag for the updating the information. For instance, when an order is placed, the inventory can be allocated as soon as the order is placed, when the order is shipped out, the inventory can be reduced. When the goods are received and stored, the inventory is automatically updated and is available at that moment for new orders.

2.31. Warehouse Performance Measurement

One of the primary goals of logistics management is to establish appropriate indicators that measure and ensure that logistical activities are fulfilled as they were initially planned.
Agreeing on variables that are the key to improving performance, systematically collecting data on these variables, and then displaying the set of data in statistical terms is a major goal of many process improvement projects. Despite their considerable success in some companies, process improvement programs can be difficult to implement because it appears that a key condition for their effectiveness is that employees through all levels of the organization develop a good understanding of the work process in which they are involved (Hoyles et al., 2007).

Key objectives in designing warehouse operations include increasing productivity, reducing cycle time, and increasing accuracy (Gunasekaran et al., 2004). Often times these objectives may conflict with one another because a method that focuses on productivity may not provide a short enough cycle time or a method that focuses on accuracy may sacrifice productivity. Researchers and managers typically attempt to find a set of measures which collectively

capture most, if not all, of the performance dimensions thought to be important, over both short- and long-term horizons. It is also advisable to review the warehouse performance measures periodically because this way it is possible to estimate the development of warehousing operations by comparing results between different time periods with each other. Because logistics performance is multi-dimensional, the selection of logistics measures is dependent on the nature the business. Typical business measures are based on financial, productivity, quality, and cycle time performance. Warehouses can be held accountable for same measures (Frazelle, 2002). These so called hard performance measures are typically impersonal, accurate, easy and inexpensive to collect.

Because it may be hard to justify the profitability of warehousing, financial perspective of performance measurement is often concentrated on cost-accounting. This typically involves creating an activity-based costing program for the warehouse. Even private warehouses are constantly facing a competitive situation because of third-party logistics providers. These measures can be used as a basis for comparing third party proposals. A company whose warehousing costs are higher than those of a third party provider should reconsider the possibility of outsourcing its warehousing operations. Cycle time can be used as an indication of the warehouse‟s service capability because reduction in the order cycle time leads to a reduction in the supply chain response time (Gunasekaran et al., 2004). The warehouse cycle time can be tracked in two areas. The Dock-to-Stock Time (DTS) measures the time from when a receipt arrives to the warehouse premises until it is ready for picking or shipping. The Warehouse Order Cycle Time (WOCT), on the other hand, measures the elapsed time from when an order is released to the warehouse floor until it is picked, packed, and ready for shipping.

Table 2.1 represents a summary of these measures with respect to each of the various warehousing functions. It is possible to use hard measures to track internal quality measures such as the timeliness of an order or shipping accuracy, but capturing customer satisfaction is typically the underlying reason for supplementing hard measures with soft, perceptual ones (Mentzer et al., 2001).

Table 2.1: **Warehouse key performance indicators**

	Financial	**Productivity**	**Utilization**	**Quality**	**Cycle Time**
Receiving	Receiving cost per line	Receipts per man-hour	% Dock door Utilization	%Receipts processed accurately	Receipt processing time per receipts
Put-away	Put-away cost per line	Put aways per man-hour	% Utilization of putaway labor and equipment	% Perfect Putaways	Put-aways cycle time (per put-away)
Storage	Storage space cost per item	Inventory per square foot	% Locations and cube occupied	% Locations without inventory discrepancies	Inventory days on hand
Order-picking	Picking cost per order line	Order lines picked per man-hour	% Utilization of picking labor and equipment	% Perfect picking lines	Order picking cycle time (per order)
Shipping	Shipping cost per customer order	Orders prepared for shipment per man-hour	% Utilization of shipping docks	% Perfect Shipments	Warehouse order cycle time
TOTAL	Total cost per order, line, and item	Total lines shipped per total man-hour	% Utilization of total throughput and storage capacity	% Perfect warehouse orders	Total warehouse cycle time = DTS + WOCT

Source: - ***Edward Frazelle*****, (2002)**

Finally, different performance measures may be needed for the effective operation and monitoring of supplementary warehousing services. In, general these kinds of performance indicators depend on the type of activities that are included in the warehousing process. Relevant measures should be specifically related to customization and production activities because customization is the critical driver of supplementary services. For example, van Hoek (2000) suggested that customization activities can be measured by looking at the overall degree to which products are produced and delivered customer specific. Another possibility is to look at the efficiency-quality aspect and measure, for example, the percentage of scrap resulting from the customization activities.

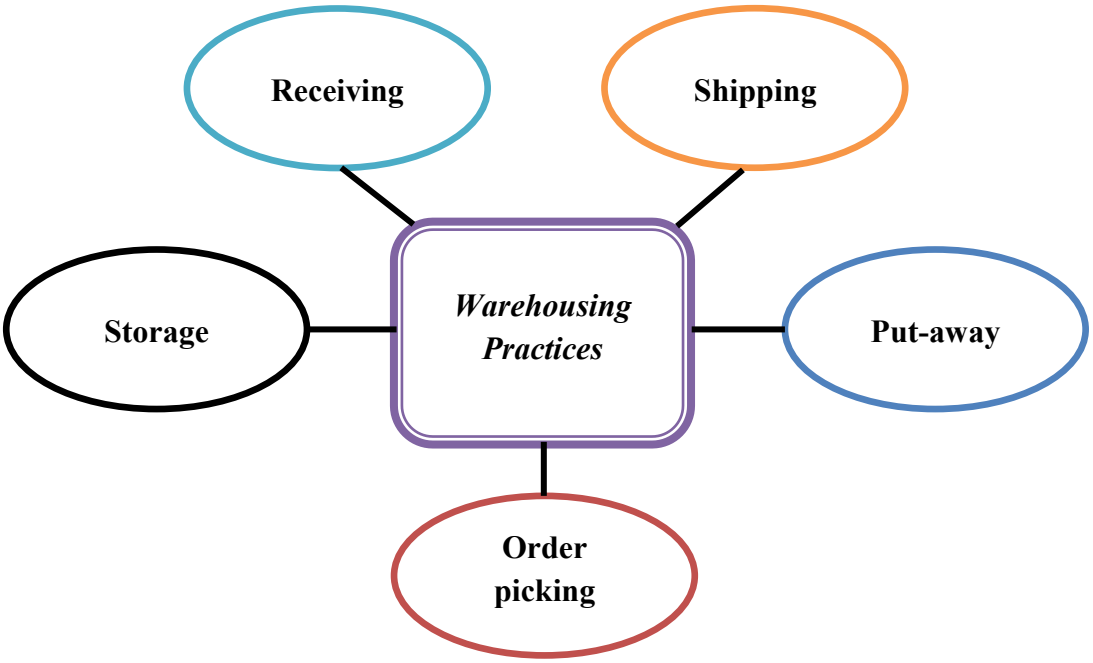
2.32. Conceptual Framework

This part of the thesis introduces the conceptual framework that is developed for the study. The framework which is developed for this study is formulated based on approaches and concepts identified in the literature review in this chapter. The purpose of the framework is to explicate the conceptual logic and direction of the study. It engages leading ideas and helps to explain the significance of this study‟s concepts. Since the aim of this research is assessing warehousing practices, it needs first to discuss about the main activities of warehousing.

The main activities which are included under warehousing are (Tompkins, 1984):

- **Receiving: -** the process of unloading, checking quality and quantity, and dissembling or repacking items for storage.
- **Put away: -** defining the appropriate location for items and transferring them to the specified storage location to wait for demand.
- **Storage**: - is the physical containment of merchandise while it is awaiting a demand.
- **Order Picking**: **-** retrieving items from their storage locations and transporting them either to a sorting process or straight to the shipping area.
- **Shipping: -** inspecting, packing, palletizing and loading items into a carrier for further delivery.

Figure 2.1: Conceptual Framework



Source: - *Adopted modifications with from Tompkins, 1984 (2017)*

Chapter 3: Research Methodology

The following section presents the research design and methods that are used to achieve the objectives of the research. It includes description of the study area, research approach, research design, target population and sample size determination, data collection procedures, ethical consideration and data analysis plan.

3.1. Description of the Study Area

Finfine Furniture Factory (3F) S.Co is established in 1967 G.C. and the company plays a critical role in the development of the furniture industry in the country by inventing new design furniture‟s and applying modern technologies. The company is fully owned by an Ethiopian investor with the paid capital of Birr 40,625,000. As per their 2015/16 financial report, the company has an annual turnover of Birr 56 Million and the company also creates job opportunity for 469 permanent and 89 temporary workers. Currently, the company has six sales branches (Saris, Bambis, Piazza, CMC, Gemo, and Nazreth). The company involved in the manufacturing of: - Dining room furniture, Living room furniture, Bedroom furniture, Spring Mattress, Office furniture, and Construction items (doors, built - in cupboard, Kitchen cabinet, parquet, staircase, etc…). They also work with Real Estates, Hotels, Guest Houses, Business Centers, Residence & Construction Companies to provide the expected level of support in the ever growing construction sector.

This research focuses in assessing the current warehousing practice of Finfine Furniture Factory (3F) S.Co. In the companies‟ structure warehouse section is under the direct control of procurement department. The company has two main warehouses, the one which is located in Mirab Shewa Zone of the Oromia Region “Alem Gena” town and the other which found in Addis Ababa city around “Saris” inside the compound of company‟s head office. However, there are also six mini stores as extensions of the main warehouses which are located in all six companies‟ sales branches. However, these mini stores are under the direct supervision of the branch sales managers. The warehouse section controls only the two main warehouses which supervised by one warehouse supervisor. Both main warehouses are engaged in receiving, storing, and issuance of materials; keep records of stock in the stores and also protect the materials from deterioration and theft.

3.2. Research Approach

Qualitative research is the approach usually associated with the social constructivist paradigm which emphasizes the socially constructed nature of reality (alzheimer-europe.org, 2009). The researcher adopts an inductive research approach which means, the researcher develops a theory or look for a pattern of meaning on the basis of the collected data through questioners, interview and observation. This involves a move from the specific to the general and is sometimes called a bottom-up approach.

3.3. Research Design

As Adams et al (2007) described research design is the blueprint for achieving research objectives and answering research questions. In order to describe and examine the current warehousing practices of case company, the researcher follows a descriptive type of research design. Descriptive research allows the researcher to assess and describe the nature; condition and degree of the present situation of warehousing practices of the selected company. Therefore, the researcher prefers to use a descriptive research type, which helps to use both qualitative and quantitative data analysis. Furthermore, from the point of view of time, the research is one-time research (cross-sectional) research.

3.4. Target Population and Sampling Techniques

According to (Holme and Solvang, 1991), selecting respondents with right knowledge about the research area is crucial. Since the present study is limited to assessing the existing warehousing practice of the case company, the population comprised of 70 employees and individuals who are working closely and received service from the warehouse section.

When we see the detail population size it comprises the following total target population:-

- The entire member of staff ((39) Thirty Nine) workers and their supervisor who are currently work in warehouse section of the company.
- 8 (Eight) other section managers which is working closely with warehousing section due to their work nature.
- 23 (Twenty Three) non- manager staff of other sections which is working closely with warehousing section due to their work nature.

Therefore, in the course of conducting this research the target population is 70 which comprises of individuals from warehouse management section, marketing and sales department, production department, procurement department, accounting and finance department, and logistic department of the company. As the study covers all the employees in the stated department and census were used to conduct the research. Furthermore, employees and individuals who are working closely and received service from the warehouse section were selected based on purposive sampling. According to Tashakkori (2003), a purposeful sampling technique allows the researcher to select participants based on a specific purpose rather than randomly.

3.5. Data Source, Data Types and Data Collection Techniques

The data used for a research work can be collected from several sources. The data which is used for both theoretical as well as the empirical approach can be collected from various sources such as archival records, interviews, observations, physical artefacts etc. This collected data can be basically divided into two different types, primary and secondary data (Kumar, 2005). The proposed research design was guided by the study objectives and the set research questions and collect data both from primary and secondary sources. The data collection techniques used for this particular study broadly categorized as (1) Questionnaire (2) Semi-structured interview questions as well as (3) Observation.

In order to address the questions of the thesis related data need to be collected in a correct way. The data needed for the research can be collected either as secondary data or as primary data (Hussey. 1997), explain the difference between them as follows: Secondary data for this thesis are collected from literature (books, journals, research papers, articles and company files and reports), Internet, and databases. Furthermore, training handout and annual report of the company will be other source of data for this thesis. Primary data can be both qualitative and quantitative, where interviews and some observations fall under qualitative research methods, and other observations and surveys fall under quantitative research methods. In this thesis a suitable method to collect the primary data were questioner, interview and observation. Since the purpose of this thesis is to assess the warehousing practice, i.e. to assess the existing situation, it is important that the chosen method can reach many potential respondents. A good way to find the relevant information was questionnaire, interviews and observation were the main source of primary data for this thesis.

3.6. Measurement and Instrument

Adedokun (2003) asserts that data refers to any fact, observation or facts relating to the subject of the study and there are different types of measurement instruments that can be used by researchers for their studies; it depends on the nature of research that is to be carried out. There are instruments that are used to collect data from participants of the study. They are important for collecting data in all types of research methods. They are mainly used by researchers to collect reliable data which will later be analyzed (Aina, 2004). They include questionnaire, interviews, observations, focus group discussion and experiment. Therefore, for this particular research the researcher use questionnaire, interviews, and observations to collect the required reliable data.

Each attribute was derived from relevant literature to ensure the validity of the questionnaire with reasonable modification. The items were measured on five point Likert scale that range from strongly disagree to strongly agree and also some additional qualitative questions related to the study objective and questions. Respondents were requested to allocate/select scores for each of the items on the instrument by taking their knowledge and actual situation in mind. Semi- structured interview were also applied with clear and precise guideline for the official who assumed key position from the participants of the study. Few semi- structure interview questions were developed by the researcher. On the other hand, the questionnaires were taken from previous research work done by;

Table 3.1:– ***Measurement and Instruments***

Warehousing Activity	**Number of Questions (corresponding numbers of the items as presented in this questionnaire)**	**Source of the Questions**	**Reported Reliability of the scale by the original author/ article.**
Receiving	6, (Q6.1-Q6.6)	Bogale (2016), Bodnar (2013), Ana-Maria and Emil (2014), Md. Sayeed (2013), Edgar and Tanyildiz (2009)	Cronbach alpha= 0.83, 0.75, 0.79, 0.75 & 0.85
Put-way	5, (Q6.7-6.11)	Bogale (2016), Axelsson & Frankel (2014), Bodnar (2013),	Cronbach alpha= 0.83, 0.91, & 0.75

Storage	15,(Q6.12-6.16) ,Q7-**16**	Bogale (2016),Edward Frazelle (2001), Axelsson & Frankel (2014), Bodnar (2013), Ana-Maria and Emil (2014), Md. Sayeed (2013), Edgar and Tanyildiz (2009)	Cronbach alpha= 0.83, 0.78,0.91,0.75,0.79, 0.75 & 0.85
Order Picking	6,(Q6.17-6.22)	Bogale (2016), Bodnar (2013), Ana-Maria and Emil (2014), Md. Sayeed (2013), Edgar and Tanyildiz (2009)	Cronbach alpha= 0.83, 0.75,0.79,0.75, & 0.85
Shipping	6,(Q6.23-6.28)	Bogale (2016),Axelsson & Frankel (2014), Bodnar (2013),	Cronbach alpha= 0.83, 0.91, & 0.75

Source: - *Researcher (2017)*

Basically, the instruments were developed based on the objectives of the study and research questions. The principles of questionnaires such as, use simple and clear languages, statements should not be too long and use of appropriate punctuations also considered when developing the instrument.

3.7. Ethical Consideration

Before writing the proposal, it is useful to consider the ethical issues at all phases of the research process that can be estimated and described in the thesis. With consideration for research sites, potential readers, studies contain ethical practice (Creswell, 2003). All human organizations have some ethical issues to observe. Divulging of information by employees that can affect the institution is among several ethical issues relating to the staff of any company. These were addressed by explaining the essence of the study to the all respondents. They are also made to understand their role in the data collection activity to find answers to the research questions. The response that the participants gave is analyzed without any change by the researcher. In addition to the above the reference works of other researchers and authors are cited appropriately. Furthermore, the entire research participants were participated on voluntary basis and also treated with respect.

3.8. Reliability and Validity

Validity is the degree to which a test measures what it purports 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 obtained from the analysis of the data actually represents the phenomena under study. He contends that the validity of the questionnaire data depends on a crucial way the ability and willingness of the respondents to provide the information requested.

A pilot study was conducted to refine the methodology and test instrument such as a questionnaire before administering the final phase. Questionnaires were 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). Furthermore, most of the respondents were managers and workers who are currently work in warehouse section of the company. Therefore, the researcher expects that the respondents have given credible answers that would probably be answered to another future independent researcher.

One of the most commonly used indicators of internal consistency is Cranach‟s alpha coefficient. Identically, Cranach‟s alpha coefficient of a scale should be above .7 (DeVellis 2003). The alpha value of this research is 0.876 which shows a good reliability. And the researcher also test the reliability by triangulation method, triangulating the primary data obtained from the questionnaires, interview and observation. Issues raises by respondents were gathered and questionnaires were refined accordingly. Besides, proper detection by an advisor was also taken to ensure the content validity of the instruments. Finally, the improved version of the questionnaires were printed, duplicated and dispatched.

3.9. Data Analysis Plan

In general there are two types of data analysis techniques namely: qualitative and quantitative where by the choice of these methods greatly depends on the type of information the researcher has at hand (Kumar, 2005). If most of information collected contains numerical, the analysis calls for quantitative tools and descriptive statistics can be used to characterize the data. In contrast, if most of the data collected are in words which mean data gathered using individual interviews, and open –ended questions, it is logical enough to apply qualitative data analysis tools (Nunnery et al., 1994).Therefore, as determined in the data

collection tool for this study, data were collected via questionnaire, interview and observation. Accordingly, the collected data were analyzed using descriptive statistical techniques such as; percentages, frequencies, mean, and standard deviation as well as the analyzed data was presented in tables and charts.

CHAPTER FOUR

Data Analysis and Discussion

4.1. Introduction

The data analysis and discussion were carried out based on the data collected through questionnaire, interview as well as observation from managers and workers who are currently working in warehouse management section, other section managers and non- manager staff who were knowledgeable and concerned on the issue under study. Therefore, as determined in the data collection tool of this study, data were collected using questionnaire, interview and observation methods. Accordingly, the collected data were analyzed quantitatively and qualitatively. Particularly, statistical tools like: percentage, frequency, mean and standard deviation were employed. The survey was conducted during two weeks‟ time and a total 61 questionnaires were effectively used for analysis that shows response rate of 87.14%.

Table 4.1: Overall Response Rate

Population	Number	Percent
Numbers of questionnaire distributed	70	100%
Returned questionnaires	68	97.14%
Incomplete questionnaires	7	0.1%
Total Usable questionnaires	61	87.14%

Source: *Survey Result,* (2017)

As inferred in the preceding part of this study, the target population of this study comprised of 70 employees and individuals who are working closely and received service from the warehouse section. However, from the total 70 questionnaire distributed 68 were returned from which 7 were not correctly filled and rejected only 61 respondents have filled and returned the questionnaire, which essentially made the response rate about 87.14%. This is a good response rate based on Fowler (2002) a 75% response rate is considered adequate. The demographic information of the respondents who have filled and returned the questionnaire is presented on underneath table 4.2.

4.2. Respondents' Demographic Information

The demographic profile of the sample respondents is presented and analyzed below. The purpose of assessing respondents‟ age, sex, is that, to determine whether the researcher considered heterogeneity of sample units. On the other hand assessing the work experience and education level of the respondents‟ is that, when the respondents are more experienced and educated they have better opportunity to understand the case and give better response than else. A percentage and frequency characteristic of the respondents is presented in the following subsequent table 4.2.

As depicted on the underneath table 4.2, males dominate the respondents‟ list registering about 75.4% of the total respondent with females taking the remaining 24.6% of the respondents. As far as respondents‟ age is concerned, the majority of the respondents 54.1% were aged between 18 to 25 years followed by the age categories of 26 to 35 years, 36 to 45 years and above 45 years respectively with percentage scores of 31.15%, 8.2% and 6.6% in that order. On the other hand, out of the total respondents 26.3% of them were managers who are currently work in warehouse management section of the company as well as managers from other section which is working closely with warehousing section due to their work nature and the reaming 73.7% are non- manager staffs of warehouse management section and non- manager staffs other sections which is working closely with warehousing section due to their work nature.

As depicted on the below table 4.2 with respect to educational status of respondents, the highest education level attained by majority of the respondents was college Diploma/TVET/ holders which represents, 39 (63.9%) out of the valid respondents and followed by first degree holders which accounts 13(21.3%). The remaining 9 (14.8%) of the respondents were below diploma level (Grade 10 completed, Grade 12 completed and different certificate holders). Thus, from the above fact, one can easily understand that most of the respondent of the company certified with diploma and above educational accreditations. Therefore, it can be assumed that they are able to understand and clearly identify the existing warehousing practices and its challenges. Moreover, it increases the validity of the findings.

Table 4.2: Respondents Demographic Information

	Choice	Frequency	Percent
Gender	***Male***	*46*	*75.4%*
	Female	*15*	*24.6%*
	Total	***61***	***100***
Age	***18-25 Years***	*33*	*54.1%*
	26-35 Years	*19*	*31.1%*
	36-45 Years	*5*	*8.2%*
	Above 45 Years	*4*	*6.6%*
	Total	***61***	***100***
Position	***Managerial***	*16*	*26.3%*
	Non managerial	*45*	*73.7%*
	Total	***61***	***100***
Level of Education	***Below College Diploma***	*9*	*14.8%*
	College Diploma	*39*	*63.9%*
	First Degree (BSc, BA)	*13*	*21.3%*
	Second Degree (MSc, MA)	*-*	*-*
	Total	***61***	***100***
Service year on the Current Position	***Below 1 year***	*5*	*8.2%*
	1 to 2 years	*34*	*55.7%*
	3 to 5 years	*13*	*21.3%*
	Above 5 year	*9*	*14.8%*
	Total	***61***	***100***

Source: *Survey Result,* (2017)

Concerning the respondents‟ service year in the company as we can see from the exceeding table 4.2 the study sought to know the length of time the respondents have worked at the

company as this helped in determining their experience and knowledge of the company. Around 55.7% of the respondents have 1 to 2 years of experience in the company, 21.3% of them have experience ranging from 3-5 years and 14.8% of the respondents have more or equal to 5 years of experience in the company. 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 small share of respondents which is 9.8% having served below 1 year on their current positions.

Table 4.3: Current Position of the Respondents

	Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Store Keeper	17	26.87	26.87	26.87
Warehouse Worker	12	19.7	19.7	46.57
Senior Store Keeper	5	8.2	8.2	54.77
Warehouse Helpers	12	19.67	19.67	74.44
Others	15	24.59	24.59	100.0
Total	61	100.0	100.0	

Source: *Survey Result,* (2017)

As shown in the exceeding table 4.3, from the total respondents‟ 26.87% of them are storekeepers, 19.67% of them are warehouse helpers, 19.7% of them are warehouse workers, and 8.2% of them were senior storekeepers who are currently work in warehouse section of the company as well as managers from other section, which is working closely with warehousing section due to their work nature and the reaming 24.59% respondents‟ are from other sections which is working closely with warehousing section due to their work nature.

4.3. The Warehousing Practices of Finfine Furniture Factory (3F) S.Co

Based on the information gathered through questionnaires, interviews, as well as observations an analysis was performed. Descriptive statistics was used in an effort to examine the mean scores and the corresponding standard deviations under the respective scales of each of the items of the dimensions. Hence, this particular attempt has the importance of answering the research questions on the basis of the perceptions of the respondents on the warehousing practice of the case company. The answer to the first research question will provide the basis for our study. The question regarding the warehouse practices will demonstrate what warehousing activity are performed by the case company, while the second research question will help us to identify how the company organizes its warehouses activity, the third research

question which will be addressed the major challenges in warehousing practices by Furniture Factory (3F) S.Co. Finally, the fourth research question provides information regarding the key issues concerning warehouse management, as well as on how company tackles and handles these key problems. Therefore, as determined in the data collection tool for this study, data were collected via questionnaire, interview and observation. Accordingly, the collected data were analyzed quantitatively and qualitatively. Particularly, statistical tools like: mean and standard deviation were employed.

4.3.1. The Warehousing Activities of Finfine Furniture Factory (3F)

Finfine Furniture Factory (3F) S.Co has two main warehouses, the one which is located in Mirab Shewa Zone of the Oromia Region "Alem Gena" town and the other which found in Addis Ababa city around "Saris" inside the compound of company‟s headquarter and additional six mini warehouses (the extensions of the main warehouse). Every warehousing related activity in Finfine Furniture Factory (3F) S.Co is administered by Procurement Department Manager besides there is also one supervisor for the sections who is responsible in administering the day-to-day activity of the both main warehouses. Currently, the company has 39 (Thirty Nine) employees who works in warehouse section, out of this 30 (Thirty) of them are storekeepers and warehouse helpers and the remaining 8 (Five) are senior storekeepers and their supervisor. All warehouses personnel in the secretion is the main element that accomplishes all the processes; receives the incoming goods, puts them away, stores the them, handles replenishment, retrieves the ordered items, picked one by one or as a batch and deliver them accordingly etc.

In the present case, the company has over 5,500 materials including finished goods and raw materials as inventory. In the case of Alem Gena Main warehouse, the number of materials to be monitored is less compared to Saris Main warehouse with respect to equal number of employees, which means that Alem Gena main warehouse has scope for good inventory management when compared to Saris main warehouse due to less number of materials. This also results in effective information sharing within Alem Gena main warehouse personnel, the newness of the warehouse facility.

Considering warehouse space as the comparison factor, Alem Gena main warehouse has 2,000 square meters and Saris main warehouse has 5,250 square meters of floor space, so the number materials to warehouse space in Alem Gena main warehouse is less compared to

Saris main warehouse that means the monitoring of stocks is easier in case of Alem Gena main warehouse than Saris main warehouse, which results in good quality inventory management. Alem Gena main warehouse has the advantage of good inventory control at the cost of low warehouse space utilization, which means that the warehouse floor space is not being utilized well in case of Alem Gena main warehouse.

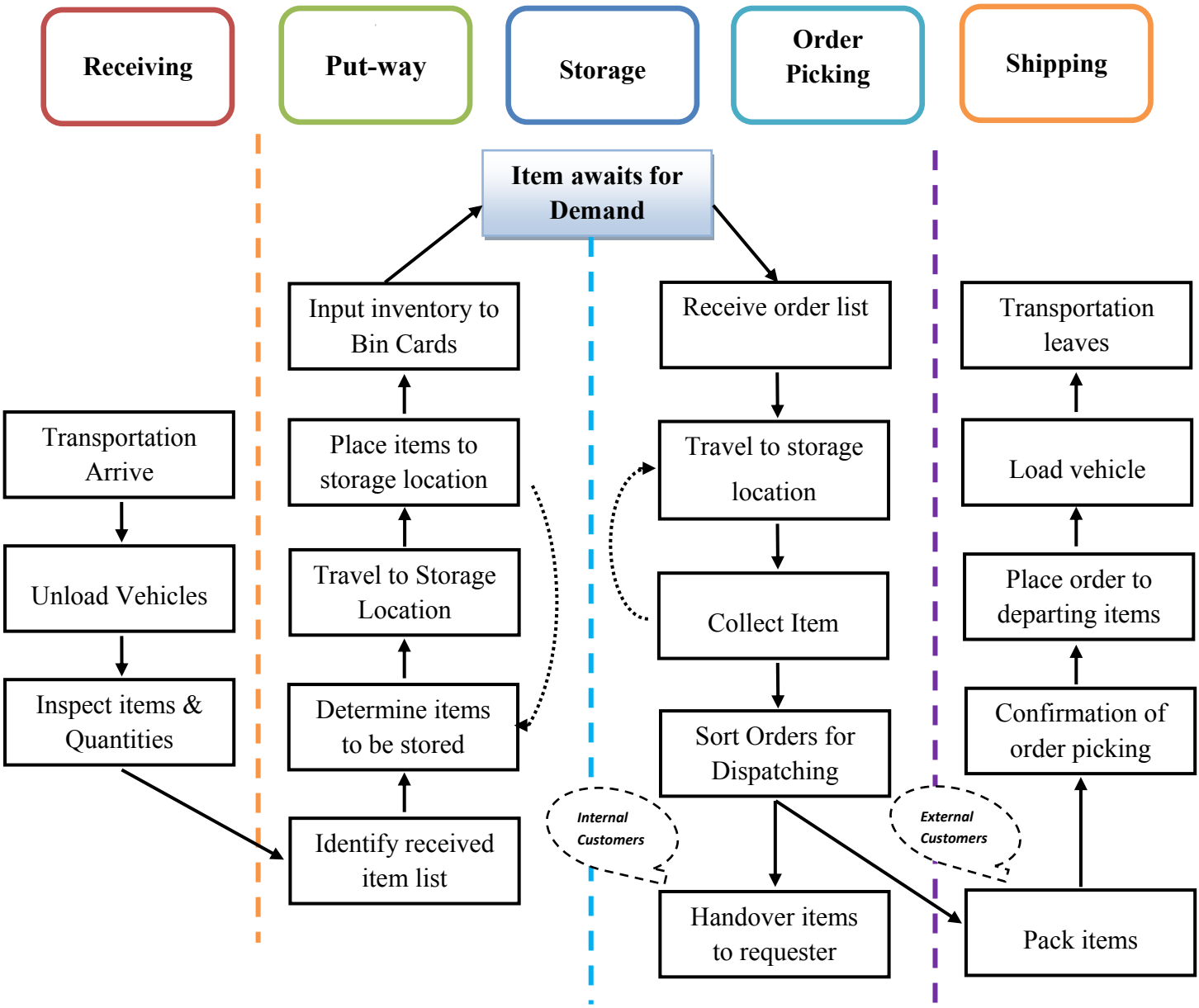
The warehouse supervisor reveals that; if the warehouse activity need to be investigated further in the case of Finfine Furniture Factory (3F) S.Co, the process starts with receiving the incoming goods. In this process, the goods are accepted at the warehouses to be delivered to their stocking positions. The first decision that needs to be taken here is if the received items are acceptable in quality and quantity. A simple visual inspection is done, related to the importance and worth of the goods that are received; other inspections can be done (physical tests, chemical tests, durability tests, material tests, etc.) if needed. In put-away the company follows a manual put-away and replenishment, which is the action of a warehouse worker deciding to remove the goods from the receiving dock (warehouse‟s dock) and placing them in correct warehouse reserve positions.

Once the goods are received and taken to their locations, there is another decision to be made by the warehouse supervisor together with the senior storekeepers previous to stocking, will the items be placed randomly to an empty spot or does it already have an assigned position in the warehouse. When an order is received, the picker retrieves the ordered items. Note that the retrieval can be triggered either by an order for item replenishment in the forward storage area or by a customer order.

Order picking is another point, which brings another decision; will the items be picked one by one or as a batch? Will there be a pre-defined path for order picking? The decisions that need to be taken keeps coming up as the processes keep running, for example the way the packaging will be done, details of shipment and frequency of inventory etc. Finally, items are loaded on the trucks and shipped. In general, it‟s rational to conclude that; Receiving, Put-way, Storage, Order picking, and Shipping activity were carried out by all warehouse personnel‟s and also there is no separation of duties and accountability to perform each activity. In our company all warehouse personnel‟s will perform every single warehouse activity.

For describing the warehousing activity, the researcher has performed a process mapping. It is a useful way for depicting all operations that take place in the warehouse of the case company. On the bottom of the map, the researcher also provides key action indicators to show what warehousing activity they perform. In its current form, the materials handling process can be divided according to the five basic activity of warehousing activity which is: Receiving, Put-way, Storage, Order picking, and Shipping. In order to capture all possible activity within a warehouse, the following model, illustrated in Figure 4.1 has been constructed. The below process (activity) flow shows the standard warehousing procedure as well as activity during a single order cycle at FinFine Furniture Factory (3F) S.Co.

Figure 4.1: *Structure of warehouse activity at Finfine Furniture Factory (3F) S.Co.*



Source: Adopted from Scott B. Keller and Brian C. Keller (2014) with modification.

4.3.2. The Organizing Practices of Warehousing Activities at Finfine Furniture Factory (3F) S.Co

1. Receiving Activity

Receiving activity in the case company can be divided into two main parts, receipt of the raw materials and receipt of finished products. Raw materials are delivered by the suppliers which is their responsibility. The finished goods are produced in the production facility of the company, inspected and packed, which means that there is no need for extra inspections as the finished goods are received. However, the finished goods were delivered straight to the customer otherwise transfer to company sales branches (min stores) and there is no way to be received by the main warehouses. Here, all company sales branches control their mini warehouses separately and all finished goods were transferred from manufacturing section to them via Good Transfer Note (GTN) which is prepared by production section.

The warehouse supervisor reveals that; *the inbound warehousing process begins with the arrival of incoming transportation. Based on the transportation contractor, the incoming vehicle is unloaded either by the vehicle operator or the warehouse personnel (Warehouse Workers). Once the items have been unloaded to the exact warehouse, the receiving activity identifies the most incoming materials and notifies the concern departments of the arrival and condition of the material. Upon arrival of the materials and equipment"s at warehouse premises post-delivery inspection for both the local and foreign procured items is carried out by warehouse personnel"s They ensure conformity of materials based on specification documents which is Purchase Order or else Purchase Requisitions. They record overages, shortage, damaged and incorrect materials on the receiving copies provided for material receiving report. They also records the receipt, as partial or complete on receiving copies of the material receiving report and notifies other concerned departments regarding receipt of the shipment, its quantity, conditions and arrival time. If no problems occur, the receipt is approved then good received note (GRN) will be generated.*

Table 4.4: ***Analysis of Receiving Activity***

Items	Mean	Standard Deviation
In our warehouse there are guidelines or standard operating procedures (SOP) in place that provide instructions to receive items properly.	***2.93***	***1.078***

We are successful in minimizing loss by inspecting items properly.	***2.92***	***1.242***
Most of the time our warehouse personnel utilizes a reasonable warehouse spaces at the time of receiving.	***3.05***	***1.146***
Most of the time our warehouse personnel inspect received materials on the reasonable time.	***2.72***	***1.127***
Most of the time accidents are not occurred in our warehouse like physical accident on warehouse personnel, and on equipment‟s at the time of receiving.	***2.79***	***1.018***

Source: *Survey Result,* (2017)

The mean values of each of the items of receiving activity indicator were calculated between 2.72 and 3.05 with almost comparable standard deviations that range between 1.01 and 1.24. The lowest mean value is registered in the case of inspecting received materials on the reasonable time and defined warehouse accident rate at the time of receiving in the second place followed by the mean score for minimizing loss by inspecting items properly and the use of guidelines or standard operating procedures (SOP) in place that provide instructions to receive items properly which is very comparably close mean values of 2.92 and 2.93 respectively; while utilizes a reasonable warehouse spaces, comes last in the ascending order.

The noticeably represented mean scores of the items of receiving activity indicator suggest that respondents in the company believe that lower efforts have been made by Finfine Furniture Factory (3F) S.Co to enhance warehousing practices in the case of receiving activity except in the case of utilizing a reasonable warehouse spaces at the time of receiving in which case the score is moderate suggesting that relatively moderate efforts have been exerted in performing the receiving activity. This implies the fact that the attempts made by the company are not as such substantial in protecting accidents in the warehouse at the time of receiving, inspecting received materials on the reasonable time, minimizing loss by inspecting items properly, maintaining warehouse guide line or procedure that provide instructions to receive items properly and also utilizing a reasonable warehouse spaces at the time of receiving.

Concerning standard deviation of values of each of the items of receiving activity indicator point out that the perception of the respondents‟ on the issue are in the unlike poles on all of the case. However, this is acceptable as the study utilized all population and also it is believed that the standard error is relatively very low (between 0.13 and 0.15). In fact, the standard

error (SE) is an indication of the reliability of the mean. A small SE is an indication that the sample mean is a more accurate reflection of the actual population mean. A larger sample size will normally result in a smaller SE (while SD is not directly affected by sample size) as this study used.

As clearly stated by the warehouse supervisor; *the employees are given training in handling the goods with care and ensure to follow right methods to handle the goods without damaging them. The frequency of damage of the goods is moderate and any damage caused by the employees due to miss-handling is compensated by the company as per the company"s policy.*

Therefore, based on all of the above quantitative and qualitative analysis the case company‟s receiving activity is exposed for different challenges and lower efforts have been made to enhance its receiving activity. This implies the fact that the attempts made by the company are not as such substantial in protecting accidents in the warehouse at the time of receiving and they are in a poor position regarding inspecting received materials on the reasonable time as well as in minimizing loss by inspecting items properly. This will leads to the dissatisfaction of its workers and in a long-run there may be a chance losing its customers. If it is so, it may be difficult and dangerous to the company to survive and compete in this intensive competitive market environment.

2. Put-away Activity

As per the interview held with warehouse supervisor reveals that; after receiving the materials and equipment‟s at each warehouse, the put-way process starts when a receiving list is printed out and the given items are located on the exact warehouse. The task of storing starts which includes keeping the materials and equipment‟s in an appropriate store; protect those from natural and manual destruction; and making an inventory and providing them to the user at necessity. The employee typically uses a labor force to move and place the item to a storage location. The location of each item can be seen on the receiving list. The employee then returns to the warehouse for the next item. Once the receiving list has been completed the employee updates inventories to the bin card and confirms that all receiving, put-away, and storing operations have been finished.

Physical properties such as the size and shape of an item can significantly complicate materials handling process especially put-away and storage. Timber‟s, plywood‟s, laminated board, chipboard, and hardboard a large variety of stock keeping units in Finfine Furniture Factory (3F) S.Co warehousing system. These products are commonly stored by stacking them and placing it on a pallet or in a storage shelf. The size of the stacking unit depends on the diameter and length of the items. Each stacking pieces has a standard length when it is received from the supplier. If the item is ordered in a quantity that is not divisible by the standard length, the employee responsible for order handling must cut the item to a given measure with the help of the requester section.

Table 4.5: ***Analysis of Put-way Activity***

Items	Mean	Standard Deviation
Most of the time our warehouse personnel‟s performs put away activity manually via labor force.	***3.67***	***.831***
Most of our warehouse personnel‟s are skilled to perform put away activity.	***3.48***	***.993***
The space between the stored items in the warehouse is not enough to move the workers and machinery at the time of performing put away activity.	***2.88***	***.87***
Most of the time in our warehouse, items are placed in the correct location.	***2.93***	***1.078***
The shelves for each received materials in the warehouse are adequate to put away.	***3.43***	***.921***

Source: *Survey Result,* (2017)

The mean values of each of the items of response put-way activity indicator were calculated between 2.88 and 3.67 with almost comparable standard deviations that range between 0.83 and 1.078. The lowest mean value is registered in the case of warehouse space to performing put away activity, placing of items in the correct location, shelves suitability to put away activity, and followed by warehouse personnel‟s skilled to perform put away activity and then mean score for performing put-way activity manually via labor force.

The scores of the scale of response put-way activity indicator which is very comparably close mean values of 3.43, 3.48 and 3.67 as depicted on the aforementioned table. So they suggest that respondents are rating Finfine Furniture Factory (3F) S.Co put-way activity as moderate or a little bit above.

3. Storage Activity

Storage Location Assignment Policies of the Company

The storage location assignment influences essentially the expected total storage and order picking time, which consists of travel time, stowing and retrieving time, and administration related time. The travel time may take up to 50 % of the total time spent on storing and picking an item (Francis and White, 1992). Therefore, several studies have addressed storage location assignment problem with the objective to minimize the travel time. The storage location assignment policies frequently considered in the literature are: random, closest-open-location, popularity based, turnover based, class based, and duration-of-stay based (DOS) rule.

Table 4.6: ***Storage Location Assignment Policies of the Company***

What type of storage location assignment policy the company follows?		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dedicated Storage Location	61	100.0	100.0	100.0

Source: *Survey Result,* (2017)

The research survey has revealed that, 61 (100%) respondents have said that the company implements a dedicated storage assignment policy. The result has been supported by the two storekeepers‟ interviewed. therefore, From the exceeding given facts, it is possible to conclude that, Finfine Furniture Factory (3F) S.Co follow a dedicated storage location assignment which is commonly used to reduce the picking effort, since related assignment methods, in general, place popular items to easily accessible locations; thereby the average picking time is shortened.

Table 4.7: ***Analysis of Storage Activity***

Items	**Mean**	**Standard Deviation**
The design of the warehouse (aisles and layout) is easy to access items, free from damage of items and convenient to load and unload.	***2.98***	***1.057***
Most of the time our warehouse personnel utilizes warehouse spaces properly	***2.95***	***1.244***

We are successful in minimizing total product damage in the warehouse like product deterioration, breakage, leakage etc.	***3.38***	***1.098***
Most of the time our warehouse or storage locations has no inventory discrepancies when bin cards were compared to a physical inventory count.	***3.21***	***1.127***
The space between the stored items in the warehouse is not enough to move the workers and machinery.	***2.90***	***1.060***
The design of the warehouse is easy to access items, free from damage of items and convenient to load and unload.	***2.96***	***1.04***

Source: *Survey Result,* (2017)

The mean values of each of the items of receiving activity indicator were calculated between 2.90 and 3.05 with almost comparable standard deviations that range between 1.06 and 1.12. The lowest mean value is registered in the case of insufficient warehouse space between the stored items, and utilizes warehouse spaces properly, the design of the warehouse to access items, warehouse spaces availability in reducing damage of items and convenient to load and unload activity and followed by the design of the warehouse (aisles and layout) to access items, which is very comparably close mean values of 2.95 and 2.96 respectively; while inventory discrepancies, and minimizing total product damage in the warehouse comes last in the ascending order.

The scores of the scale of storage activity indicator for inventory discrepancies and minimizing total product damage in the warehouse. This has very comparably close mean values of 3.21 and 3.38 as depicted on the aforementioned table. So, this suggests that respondents are rating Finfine Furniture Factory (3F) S.Co. storage activity as moderate or a little bit above, as in the case of their evaluation regarding the design of the warehouse to access items, warehouse spaces availability in reducing damage of items and convenient of the warehouse spaces to load and unload item and the design of the warehouse (aisles and layout) to access item whereas regarding insufficient warehouse space between the stored items, and utilizes warehouse spaces properly is a little bit lower effort is exerted.

4. Order Picking Activity

As one of senior storekeeper clearly stated; *the order picking part begins when an item is requested on a sales order or requested from internal customers. The copy of the sale order or the supplies request referred to the warehouse section then the section create picking lists*

from these sales orders which are printed out and handed to the storekeepers (order pickers). The picker travels to the first storage location, collects the requested number of items, and proceeds to the next location. Once all items on the order list have been collected the storekeepers returns to the shipping area. A common practice is that the storekeeper (picker) is also responsible for the shipping of an order. At the shipping area items are sorted out and packed for shipment. The storekeeper (picker) then generates good issuing note (GIN) to confirm that the order has been finished. Then the picker prints out the shipment address labels and other necessary documents. Once these steps are finished, items are placed to departing items where they await for outgoing transportation.

In the case of internal customers; - As stated by warehouse supervisor, every craft foreman (Sofa Shop, Mattress Shop, Paint Work, etc.) writes a requisition for common use items that will be required for the next day's work with the approval of the section head. These frequently used items include different shape and size woods, nuts, bolts, screws, washers, paints, glue, and gloves, etc. All specialty items are ordered separately. Then, the warehouse personnel fill the orders of items requested by the craft foreman and handover the items accordingly and get the receiver signature, one or two workers from each department go to the storeroom with a four-wheel platform truck to pick up the filled order.

Table 4.8: ***Analysis of Order Picking Activity***

Items	Mean	Standard Deviation
Warehouse personnel‟s are skillful in performing order picking process and achieve their responsibility without significant errors.	***3.21***	***1.127***
The design of the warehouse system is properly done to improve customer service and eliminate errors in order picking process.	***2.95***	***1.244***
Most of the time in our warehouse items or lines are accurately picked	***3.38***	***1.098***
The current inventory management and planning system of the company assist the company's to facilitate its order picking process.	***2.98***	***1.057***
Most of the time our warehouse personnel‟s performs order picking activity manually via labor force.	***2.92***	***1.242***
The shelves of the materials in the warehouse are adequate to facilitate order picking process.	***3.48***	***.993***

Source: *Survey Result,* (2017)

The mean values of each of the items of response put-way activity indicator were calculated between 2.92 and 3.48 with almost comparable standard deviations that range between 0.99 and 1.242. The lowest mean value is registered in the case of performing picking activity manually via labor force, improve customer service and eliminate errors in order picking process, the current inventory management, planning system of the company in facilitate its order picking process, warehouse shelves in facilitating order picking process; despite the fact that, warehouse personnel‟s skillful in performing order picking process and followed by picked accurately, comes last in the ascending order.

The scores of the scale of response order-picking activity indicator which is very comparably close mean values of 3.21, 3.38 and 3.48 as depicted on the aforementioned table. So they suggest that respondents are rating Finfine Furniture Factory (3F) S.Co. order-picking activity as moderate or a little bit above, as in the case of their evaluation regarding storage activity.

The noticeably represented mean scores of the items of order-picking activity indicator suggest that respondents in the company believe that lower efforts have been made by Finfine Furniture Factory (3F) S.Co to enhance warehousing practices in the case of order-picking activity except in the case of warehouse personnel‟s skillful in performing order picking process and followed by picked accurately in which case the score is moderate suggesting that relatively moderate efforts have been exerted. This implies the fact that the attempts made by the company are not as such substantial pertaining in performing picking activity manually via labor force, improve customer service and eliminate errors in order picking process, the company current inventory management and planning system in facilitate its order picking process, and warehouse shelves in facilitating order picking process.

5. Shipping Activity

Table 4.9: ***Analysis of Shipping Activity***

Items	Mean	Standard Deviation
The staff of the warehouse has not enough awareness about how the motions of them have impact on waiting and un-satisfaction of customers.	***3.67***	***.831***
Most of the time our warehouse personnel serve our customer on the reasonable time.	***3.48***	***.993***

Most of the time our warehouse personnel utilizes a reasonable warehouse spaces for product handling i.e. the total storage area that is dedicated specifically to product handling (loading, & dispatching).	***2.79***	***1.018***
Most of the time our warehouse workers are not idle i.e. the number of units (e.g., boxes, pallets) or weight moved during a defined period of time, per person-hour, for each person working during that period. It can be considered both when receiving and shipping inventory.	***3.21***	***1.127***
Goods are delivered to buyer according to the specification, right quality without any damage.	***2.92***	***1.242***
Most of the time our warehouse personnel serve our supplier and makes product ready for shipment on the reasonable time.	***3.05***	***1.146***

Source: *Survey Result,* (2017)

The mean values of each of the items of response shipping activity indicator were calculated between 2.79 and 3.67 with almost comparable standard deviations that range between 0.831 and 1.018. The lowest mean value is registered in the case of utilizations of a reasonable warehouse spaces for product handling at the time of shipping, delivered accuracy, readiness of shipments on the reasonable time period, and followed by serving customer on the reasonable time, knowing the impact on waiting and un-satisfaction of customers

The scores of the scale of response shipping activity indicator which is very comparably close mean values of 3.05, 3.48 and 3.67 as depicted on the above-mentioned table 4.3.2.5. So they suggest that respondents are rating Finfine Furniture Factory (3F) S.Co. shipping activity as moderate or a little bit above. This shows that most of the time warehouse workforces have shown an excelled performance in delivering items to their customers (internal as well as external customers).

A. Packaging and protection of the goods

Almost every product we purchase as a consumer or a business is packaged. The packaging was initially intended to provide protection for the item as it being handled in the warehouse or when the item is being shipped. Packaging can be extremely elaborate, and for the consumer, it can be an art form to entice you to make a purchase. For businesses, the packaging on an item should be sufficient to limit any damage to the item as it is moved in the warehouse (www.thebalance.com).

As stated by one of the senior storekeeper; in the present-day, Finfine Furniture Factory (3F) S.Co. is uses corrugated card board boxes as packaging material. Sometimes, they also use moving blankets and furniture pads as packaging materials. Since the product type handled by the company are furniture materials which is much fragile in nature and delicate in nature such as glass ware, ceramics for household and kitchen furniture"s, office furniture"s, hence they using more packaging bubble plastics and plastic wrap for extra protection even though the cost is more.

If it"s required by the customer or necessary to deliver the material they use customized packaging which needs skillful labour and extra resources to perform, thus adding the total warehouse costs. In the present case all are mini warehouses do not perform any customized packaging operations and value adding activity, since all are mini stores are at the edge of the end customers. However, with the cooperation of the production department both the two main warehouses perform customized packaging operations and value adding activity.

4.3.3. Major Challenges in Warehousing Practices of Finfine Furniture Factory (3F) S.Co

When observing the warehouse processes, procedures and activity at Finfine Furniture Factory (3F) S.Co. it was clear that there could be improvements made. Authors such as Van Den Berg (2007), Berry (2009) and Tompkins et al. (1998), state that there are several common key factors which have to be taken into consideration in order to improve warehouse practices. One of the most common faults in optimizing warehouse resources is not sufficiently using cube utilization, which refers to the use of space within a storage area, which also includes using the storing space located high up near the ceiling. This space is too often forgotten and by not using the cube as a guideline when optimizing the warehouse resources, can lead to increased costs; costs which derive from excess storage space that might not be needed. In connection with optimizing warehouse resources is making sure that there are enough products available when the order picking process is conducted. A shortage of products was hindering the worker from conducting the order picking process which directly affects the warehouse process efficiency.

One common warehousing problem is related to space. This arises because of the growth in both volume and number of SKUs.

Table 4.10: ***Warehouse Space Capability***

	Frequency	Percent	Valid Percent	Cumulative Percent
Very Satisfactory	6	9.8	9.8	9.8
Satisfactory	5	8.2	8.2	18.0
Somehow Unsatisfactory	25	41.0	41.0	59.0
Unsatisfactory	25	41.0	41.0	100.0
Total	61	100.0	100.0	

Source: *Survey Result,* (2017)

As shown in the above table 4.10, majority 41% of the respondents repaid that, it is somehow unsatisfactory, in the same way 41% % believed that it is totally unsatisfactory, however 8.2% of the members respond oppositely that is it is satisfactory. The remaining 9.8% responds that it is very satisfactory. It indicates that the warehouses are not capable in holding all the incoming materials. The warehouses capability can be improved either by constructing additional stores or removing (disposing) unnecessary materials from the store.

On this specific issue, the researcher made triangulation and found out the responses of the two groups is/was consistent. The response of questionnaire respondents was cross checked with the interviewee result and the same result was found accordingly. Two interviewees (Store Keeper -1 and Store Keeper -2) from Alem Gena main warehouse and Saris main warehouse respectively, Just not to be verbose; here the direct words of the Store Keeper -1 were offered as follows;

Almost all the warehouse spaces were occupied and picking productivity was higher than before. Sometimes when I take a walk around the warehouse, I realized we had products that I was not even aware of. In connection to this problem, I find the solution which is reviewing the classification of the goods and storage location which helps us to recognize the dead items (obsolete SKUs), fast movers and re-allocation of storage places to get free storage space.

In Finfine Furniture Factory (3F) S.Co particularly in the Saris main warehouse case, bulk items are stored high on the shelves in every section of the warehouse, and keep their buffer/safety stock in their regular inventory along with hold dead items (obsolete SKUs).

As clearly stated by the Store Keeper -2; *here in Saris* main warehouse *our main issue is, and has been for a long time, the space problem. …. This issue has been here for so long, even as we have been using new store to cope with it*. And we recognize that, s*pace is the most common warehouse problem that can be fixed by right type of shelving and storage equipment. It will help us reduce the overhead expense, and increase the productivity*.

Table 4.11: ***Occupations of Materials in the Warehouse***

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Active Items	46	75.4	75.4	75.4
	Obsolete Items	11	18.0	18.0	93.4
	Scrap Items	4	6.6	6.6	100.0
	Total	61	100.0	100.0	

Source: *Survey Result,* (2017)

As can be seen in the table 4.11 above, Majority 46 (75.4%) of the respondents responds believe that, it is active materials that occupy the major space 11(18%) respondents believe obsolete materials occupy the major space and the remaining 4(6.6%) respond that it is scrape materials that occupy the major space. As it can be inferred from the above data the storage space is occupied by active materials and a few obsolete and scrapes materials.

Thus from the above analysis we can conclude that, Finfine Furniture Factory (3F) S.Co. were facing a huge warehouse space problem. It also indicates that the stores are not capable in holding all the incoming materials. The store room capability can be improved either by constructing additional stores or removing (disposing) unnecessary materials from the store.

Table 4.12: ***Location of Materials***

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	14.8	14.8	14.8
	No	18	29.5	29.5	44.3
	I can‟t Determine	34	55.7	55.7	100.0
	Total	61	100.0	100.0	

Source: *Survey Result,* (2017)

As shown in the exceeding table 4.12, 34 (55.7 %) and 18(29.5%) over the total respondents replied "No" and "I can‟t Determine" respectively and the remaining 9(14.8%) respondents were believes the company follows a proper material location. Based on this fact it is possible to conclude that, the company didn‟t follow a proper material location.

Beside to the questionnaires that was distributed to the selected participant of the study of the company and the interview that was conducted with top level managers as well as non-mangers staff of the company, the researcher also took a physical observation about the how the company carried out the location selection for materials. Improper location of materials has been seen in both main warehouses; scrap woods and unused paints are stored in open yard of "Saris warehouse". This could lead to incapability of having closer control of the responsible store keeper to the respective materials. This could also lead to loss of materials and or discrepancies between the physical balance and documentation kept by stores. Besides it is a potential fire cause for the organization.

Finfine Furniture Factory (3F) S.Co always has an excess inventory which can be considered as a buffer inventory. However, the replenishment process at the company is not clearly defined and doesn‟t follow a specific method, the replenishment process is not clear. My observations at Finfine Furniture Factory (3F) S.Co indicate that there is no identified method for the replenishment process; rather the replenishment is based on the warehouse supervisor daily routine of manual checking the inventory and then making a decision as to whether there is any need to restock a product. This method is neither sufficient nor reliable and needs to be addressed in order to improve the company‟s inventory management as well as warehouse activity.

Table 4.13: ***Use of Information Technology***

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	6.6	6.6	6.6
	No	48	78.7	78.7	85.2
	I can‟t determine	9	14.8	14.8	100.0
	Total	61	100.0	100.0	

Source: *Survey Result,* (2017)

As can be seen in the table 4.13 above, the respondents were asked "Does the organization use any computerized warehouse management system". Majority 48 (78.7%) of the

respondents mentioned that they beloved that the company didn‟t implement any computerized warehouse management system to facilitate its warehouse operation and the reaming 9 (14.8%) respondents can‟t determine whether the company‟s use a computerized warehouse management system and the remaining 4(6.6%) respondents were beloved that the company implement a computerized warehouse management system and they state that Microsoft office and specifically Excel. This indicates that the company didn‟t use any computerized warehouse management system.

On this specific issue, the researcher made triangulation and found out the responses of the two groups is/was consistent. The response of questionnaire respondents was cross checked with the interviewee result and the same result was found accordingly. Just not to be verbose, here the direct words of the warehouse supervisor were offered as follows;

Yes, the company didn"tapply any computerized warehouse management system and its true there is not much communication between the warehouses but the information is shared between the each and every one of our warehouses as well as all branches through telephone, and at hand no any specific warehouse management system which is used for all the logistical purposes carried out in the company. However, in each warehouse every information is updated real time in the computers automatically using Microsoft Excel 2013 as soon as the goods arrive at the warehouse and as soon as the goods are sold and taken away by the customer from the store. The backup disk is run very frequently in order to have a copy of the transactions and the whole Excel data in case the existing disk crashes.

Two interviewees (Store Keeper -1 and Store Keeper -2) from Alem Gena main warehouse and Saris main warehouse respectively and warehouse supervisor;

Improper shelving and inflexible equipment can greatly hinder operations efficiency (Store Keeper -1). ***According to the Store Keeper -2****, manual work has been the trend for a long time. Combining partial flexibility and automation can be possible at huge cost, which stresses the importance of appropriate automation level. This balance point is sensitive to different parameters that need to be explored.*

This problem also noticed and gain huge attention from the management and owners of the company. As undoubtedly stated by warehouse supervisor:

"One of the main challenges with equipment and technology is to find the balance between implementation cost and flexibility. I think that"s why we are planning to automated our warehouses, because someone (external consultant) told us that automation is the only way that speeds up our warehouse activity; the latest technology was suggested instead of an analysis of what our real needs are.""

Furthermore, the researcher observes that, in both warehouses locations (Alem Gena main warehouse as well as Saris main warehouse) the only equipment which is used for handling materials is a pallet jacks. As a soft technology, to provide accurate information on inventory and storage location the company must implement best information technology infrastructures, by doing thus the company facilitate its warehousing operation and potentially reduce discrepancies.

The researcher fined it"s important to explore how the repetitive warehouse activity during a whole day influences workers and their performance. Occurrence of discrepancies may be one of the impacts. As warehouse supervisor clearly mentions:

„„That is probably a minor problem we have, which has been always spoken about as being a major problem""; „„it would be very interesting to see how you can oil the mind of the workers, make work smoother and more correct; and not only correct but also faster, just by providing the right tools.""

In line with the goal of reducing discrepancies, interviewee (***Store Keeper -2***) pinpoints the required training and motivation; interviewee (***Store Keeper -1)*** clarifies;

„„There is a lot to do since in a warehouse you can see quite a lot of unmotivated personnel. I think a cultural change is needed here to lift the organization and individuals to be more productive by being happier and more content with work and their position.""

Employees" health is another important concern which is mentioned by interviewee with the warehouse supervisor regarding few storage areas:

„„One problem is the sickness level of the labor which we think is high and it costs both time and money to handle a high number like this"", he also continues from a staffing point of view: *„„we have an aim for a certain percentage of female employees but it is difficult due to the problem of having heavy work. It is not easy to handle all the weight. So what we do is that we try to rotate and we also use external labor on the heaviest parts.""*

Observation of the actual scene also confirms that, warehouse helpers around the warehouses are contributing a lot for the smooth running of the operations and for the immediate responses of the user departments by carrying out the labor related works whenever materials are loaded and unloaded. The researcher believes that, this issue must be resolved for the better warehouse operation as well as for the company‟s overall performance.

A. Training Practice

According to Bowersox et al, (2000) and Mentzer, et. al. (2004) the successful supply chain management implementation concept largely depends on human aspects of the organizations. With respect to this theory effective training and knowledge, based learning for both managers and employees of organizations is essential in developing and maintaining SCM skills.

Table 4.14: ***Warehouse and Material Management Training Availability***

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	1.6	1.6	1.6
	No	20	32.8	32.8	34.4
	I can‟t Determine	40	65.6	65.6	100.0
	Total	61	100.0	100.0	

Source: *Survey Result,* (2017)

As shown in the exceeding table 4.14, majority 40(65.6%) of the respondents repaid that there is no training given by the company to the employees, 20 (32.8%) said that they can‟t determine and only 1 (1.6%) of the respondent believes that the company provide a training related to warehouse and material management training. This shows that the company does not have sufficient trainings that enable its warehouse staffs to improve their capacity.

In addition to the responses obtained through questionnaire, there is an interview conducted with warehouse employees and warehouse supervisor. According to their response, still now there is no well organized training program within the company to the employees as well as managers. Even when some invitations come from government and other training institutions like: Addis Ababa Chamber of Commerce, simply some managers or employees have been sent to the training without consideration of the relevancy of the trainee to the company‟s real problem. This clearly implies that, there is a great problem with the human resource management area of the case company.

Information sharing plays a significant role in planning for cooperation of different departments. Companies should determine when and what information should be shared. As the warehouse supervisor clearly stated; „„*Looking at the space issue, the link between the purchasing department and the warehouse is not very good. There has never been any real cooperation; just buying and then shipping to the warehouse; and then of course you have the other end which is the sales department.*""

Regarding this issue interviewee (Store Keeper- 2) states, *„„we started some sort of internal service level agreement; and when we got there, it was easier to work and understand when we had an issue.""*Both Interviewees point out that, in order to set up such cooperation, members of the warehouses and different departments of a company should share common values; they need to have some knowledge about how the business works and how they can improve it by better collaboration.

This indicates that the company is in a poor situation regarding to communication and there is weak cooperation between its different departments. According to the result of the research findings from interview, they should strength this weakness as soon as possible because; this might lead to unpleasant working atmosphere within the company.

Observation of the actual scene also confirms that; In Finfine Furniture Factory (3F) S.Co. fire is seen as a severe hazard, since most of the items are made of lumber. The main raw materials are wood, paints and other chemicals which are very flammable in nature. The company does not have a sprinkler system; instead they have section securing doors which are normally open wide on the sides parallel to the walls. These doors are very durable and are designed to isolate the section that is on fire from the rest of the facility. The company didn"t have regular fire drills to be ready for such a situation in order to avoid any casualties. The company doesn"t present informational seminars and educational programs about work related health and safety. Even though there is dressing rules and the company provide uniforms. However, most of warehouse workers didn"t dresses as per the rule. Moreover, firefighting equipment"s; fire extinguishers and notices like "***No smoking***" signals aren"t label (placed) around the entire warehouses.

As indicated in the underneath table 4.15, the majority of the responses 44(72.1%) of the respondents believe that the safety of warehouse personnel"s is not protected, 9(14.8) reply that warehouse personnel"s are protected and the remaining 9 (14.8 %) respondents can"t

determine the situation. This implies that the company should improve the safety of its warehouse personnel"s, so as to eliminate cost related with warehouse safety and to motivate the employee by providing good working condition.

Table 4.15: ***Safety of Warehouse Personnel in the Warehouses***

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Protected	9	14.8	14.8	14.8
	Unprotected	44	72.1	72.1	86.9
	I can"t Determine	8	13.1	13.1	100.0
	Total	61	100.0	100.0	

Source: *Survey Result,* (2017)

In every company time wastes are explained. In Finfine Furniture Factory (3F) S.Co. the main waste of time is coming from two sources: the manual unloading of the products from pallets to the shelves and also the time spent looking for items due to the lack of a locator system and the lack of information flow. Therefore, the company must solve this problem to become more productive, competitive in the market place as well as to increase customer satisfaction.

4.3.4. The Key Issues and Their Handlings in the Warehouse Management Practices of Finfine Furniture Factory (3F) S.Co

As stated by Mulcahy (1993), improvements can always be made in companies. Even the most organized and structured company has weaknesses in the organization which can be improved. The most important issues which the researcher identified through observing the company were:

- Cube utilization,
- Aisle width, and
- Excess inventory

These three factors will be addressed in a joint section below; Cube utilization is the major problem which the researcher identified through observations and interviews. The company

experiences the need for more space in one way or the other. As the warehouse supervisor clearly states that:

"The company tries to expand its warehouse for the past years we expanded our warehouses in order to meet our future customer demands and in order to handle seasonal and trend fluctuations as well as getting access to more space."

Warehouse layout of the theoretical frame of reference Mulcahy (1993) and Salvendy (2001) discuss the importance of utilizing and maximizing the available storage space. The first observation which was made as soon as entering the main warehouse of Finfine Furniture Factory (3F) S.Co which is located at Saris main warehouse was that the company does not utilize the storage space appropriately at all.

As the researcher understands that, Finfine Furniture Factory (3F) S.Co strives to maximize their storage space and the utilization of airspace. The company tried to solve their lack of available space by applying cube utilization as well as adding an extension to the premises. However, they still experiencing a lack of space and not addressing this issue will result in the company needing to add another extension which is currently not needed as well as it is an extra cost for the company. Applying the cube utilization method will automatically free a vast amount of space and which will contribute to the company having excess space for other purposes. Freeing space leads us to the second factor which was identified, namely aisle width.

Ackerman (1997) states that 40% of a warehouse‟s storage space is wasted on aisle, docks, etc. and Finfine Furniture Factory (3F) S.Co is one of the many companies that has fallen into this category. The manner in which, in the indoor section warehouse structure is not efficient at all since the structure has contributed to the aisle length being approximately 5-10m. There is no logical reason for the aisles to be this wide since Finfine Furniture Factory (3F) S.Co does not own any trucks which require aisle of this width. The fact that the aisles are these wide contributes to a lot of space being wasted, space which could be used for other in more appropriate purposes. The problem with the aisle length go hand-in-hand with cube utilization, and by applying the cube utilization method, Finfine Furniture Factory (3F) S.Co will not only solve the problem with lack of space but also reduce the aisles widths and free large amounts of space. Even though the researcher witness this as a problem, Finfine Furniture Factory (3F) S.Co do not have the same opinions as researcher and have therefore not identified there aisle widths as a problem. The researcher believes that, the company has

not addressed this problem appropriately and its will be bad for the company future development.

Another problem which the researcher identified in Finfine Furniture Factory (3F) S.Co was that the company holds excess stock based on the fact that the company holds those inventories for long periods and that the company needs to have excess stock in order to never experience stock outs. When asked if the company believed that they kept more stock than necessary, the warehouse supervisor visibly states that:

"They were aware that the company held more inventory than necessary and that it tied up capital. However, they did not believe that the tied up capital was an issue for the company at the present time."

Even though Finfine Furniture Factory (3F) S.Co do not consider the excess stock as an issue, in the researcher opinion the inventory level can be reduced and still with good margin cover the customer demands and fluctuations which might occur and with that reduce the tied up capital. Tied up capital is always an issue for companies and it is important to reduce it as much as possible, and since the company officials are aware that they keep too much inventory, there are possibilities to reduce it, hence, reduce tied up capital.

CHAPTER FIVE

Summary, Conclusions and Recommendations

This chapter provides the summary of major findings, conclusions and recommendation of the study.

5.1. Summary of Findings

The purpose of this study was to assess the current warehousing practices of Finfine Furniture Factory (3F) S.Co by making particular emphasis on the five main warehousing activities; Receiving, Put-way, Storage, Order picking, and Shipping. This study was conducted using qualitative and quantitative research method. The study also depends solely on the perception of selected respondent‟s from a focal firm.

From the 70 target population a total of 61 respondents have filled and returned the survey questionnaire making the response rate about 87%. About 72.1% of the respondents are males, while females constituting the remaining 27.9% of the total respondents. About 73.3% of the respondents have served one year and above in their current position as a youngest company implying that the major portion of the response is obtained from respondents who had relatively better information regarding the warehouse practices of their respective company have with knowledge of their warehouse activities.

In its current form, the materials handling process of the company can be divided according to the five basic activity of warehousing which is: Receiving, Put-way, Storage, Order picking, and Shipping. Every activity was carried out by all warehouse personnel‟s and also there is no separation of duties and accountability to perform each activity and all warehouse personnel‟s will perform every single warehouse activity.

The other main finding was, when the company organizes its warehouses activities the process starts with receiving the incoming goods. In this process, the goods are accepted at the warehouses to be delivered to their stocking positions. In put-away the company follows a manual put-away and replenishment, once the goods are received and taken to their locations. When an order is received, the picker retrieves the ordered items. Finally, items are loaded on the trucks and shipped.

In evaluating the case company‟s warehousing activities the analyses result revealed that;

- The mean values of each of the items of receiving activity indicator were calculated between 2.72 and 3.05 with almost comparable standard deviations that range between 1.01 and 1.24. The noticeably represented mean scores of the items of receiving activity indicator suggest that respondents in the company believe that lower efforts have been made by Finfine Furniture Factory (3F) S.Co to enhance warehousing practices in the case of receiving activity.

- The scores of the scale of response for put-way activity indicator which is very comparably close mean values of 3.43, 3.48 and 3.67. So respondents rating the case company put-way activity as moderate or a little bit above.

- The scores of the scale of storage activity indicator there is very comparably close mean values of 3.21. As a result, respondents were rating the case company storage activity as moderate or a little bit above.

- The scores of the scale of response order-picking activity indicator which is very comparably close mean values of 3.21, 3.38 and 3.48. So this suggests that respondents are rating the case company order-picking activity as moderate or a little bit above.

- The scores of the scale of response shipping activity indicator which is very comparably close mean values of 3.05, 3.48 and 3.67. This implies that respondents are rating the case company shipping activity as moderate or a little bit above.

The research indicated that there were several major challenges in warehousing practices of the company such us; Shortage of Warehouse Space (Low Warehouse Capacity),Absence of Computerized Warehouse Management System, Lack of Training Availability, Shortage of Educated Personnel's, Nonexistence of Safety Procedures, Absence of Operation Manual, etc… The analyses result also revealed that; there are few important issues which the researcher identified through observing the company was: Cube utilization, Aisle width, and Excess inventory.

5.2. Conclusions

The following conclusions have been drawn on the bases of the findings of the data analysis effort.

From the research findings, the study can conclude that Finfine Furniture Factory (3F) S.Co has been operating for a long time. However, warehouse management theories and practices are not given attention by business managers. Still the company is doing business in long-established traditions even there is no procedures and manual to perform each warehouse activity and their information sharing practices and internal operation flexibility to address customer‟s demand is not satisfactory.

The descriptive analysis shows that, receiving activity in this company can be divided into two main parts, receipt of the raw materials and receipt of finished products. Raw materials are delivered by the suppliers which is their responsibility. The finished goods are produced in the production facility of the company, inspected and packed, which means that there is no need for extra inspections as the finished goods are received. However, the finished goods were delivered straight to the customer otherwise transfer to company sales branches and there is no way to be received by the main warehouses. Here, all company sales branches control their mini warehouses separately and all finished goods were transferred from production section to them via good transfer note which is prepared by production section.

Nevertheless, the data collected reflect that majority of the respondent in the company believe that lower efforts have been made by Finfine Furniture Factory (3F) S.Co to enhance warehousing practices particularly in the case of receiving activity. Therefore, based on all of the above quantitative and qualitative analysis the case company‟s receiving activity is exposed for different challenges and lower efforts have been made to enhance its receiving activity. This implies the fact that the attempts made by the company are not as such substantial in protecting accidents in the warehouse at the time of receiving and they are in a poor position regarding inspecting received materials on the reasonable time as well as in minimizing loss by inspecting items properly. This may possibly lead to dissatisfaction of its warehouse staff and in a long-run there may be a chance losing its customers. If it is so, it may be difficult and dangerous to the company to survive and compete in this intensive competitive market environment.

Study findings also shows that, in Finfine Furniture Factory (3F) S.Co the task of storing starts which includes keeping the materials and equipment‟s in an appropriate store; protect those from natural and manual destruction; and making an inventory and providing them to the user at necessity. The employee typically uses a labor force to move and place the item to a storage location. The location of each item can be seen on the receiving list. The employee then returns to the warehouse for the next item. Once the receiving list has been completed the employee updates inventories to the bin card and confirms that all receiving operations have been finished. The finding also reflects that there is moderate put-way activity in the company and to increase its operation the company must use modern materials handling tools.

Furthermore, the analyzed data reveals that, most respondents suggests and evaluates Finfine Furniture Factory (3F) S.Co storage activity as moderate or a little bit above, as in the case of their evaluation regarding the design of the warehouse to access items, warehouse spaces availability in reducing damage of items and convenient of the warehouse spaces to load and unload item and the design of the warehouse (aisles and layout) to access item whereas regarding insufficient warehouse space between the stored items, and utilizes warehouse spaces properly is a little bit lower effort is exerted.

In evaluating the order-picking activity of the company the researcher disclose that respondents in the company believe that lower efforts have been made by Finfine Furniture Factory (3F) S.Co to enhance warehousing practices specifically order-picking activity. This implies the fact that the attempts made by the company are not as such substantial. In addition, the research signifies that respondents are rating the case company shipping activity as moderate or a little bit above. This shows that most of the time warehouse workforces have shown an excelled performance in delivering items to their customers (internal as well as external customers).

The descriptive analysis also shows that, nearly every one of the respondents mentioned that they beloved that the company didn‟t implement any computerized warehouse management system to facilitate its warehouse operation. As the research reveals, every warehouses of the company perform their operations manually this may result some errors and some delay while performing their jobs furthermore it may also result de-motivation of the employees.

The research also discovers that, the management shouldn‟t constantly expose its staff to training in order to improve their skills on warehousing activity. In addition, the research also expose that, the company‟s warehouses capacity is somehow unsatisfactory to hold the incoming material because the major parts of the warehouses is occupied by obsolete and deteriorated materials in addition essential equipment and tools are not available for material handling processes in order to positively affect the warehouse processes. The materials are obsolete due to the causes of deterioration and attributable to the absence of proper inventory management technique. Moreover, the safe and security of warehouses are not that much reliable. The descriptive analysis also prove that, in the case company; cube utilization, aisle width, and excess inventory are the key issues and the company strive to minimize this issues through applying utilizing of airspace in the warehouses and adding an extension to the premises and reducing excess inventory through discarding obsolete items.

5.3. Recommendations

The studied company required to review some of its existing warehouse practices based on the five main warehousing activities and make the necessary modifications in order to benefit more; improved quality, improved response time and improved efficiency or productivity. Here, some suggestions are forwarded on the basis of the findings of the study.

- Procedures and manual are very important for the smooth running of the warehouses. Since manuals help the store keepers how to perform the tasks related to the stores, and besides procedures and manuals are full of information about what to do while performing a certain type of store activities. This in turn may maximize the efficiency of the store keepers. So, the company must develop procedures and manual for running its warehouses properly. This is not the only way to maximize their efficiency rather trainings on the current situations of storage management should be given to the storekeepers.
- Manual labour is primarily used in Finfine Furniture Factory (3F) S.Co. during the put-away process where the products are lifted, by hand, from pallets to shelves. The researcher strongly recommends that the company should store the products, which arrive on pallets, in the shelves on the belonging pallets rather than manually placing individual products on the shelves. The purpose of this recommendation is aimed to

improve the efficiency by eliminating time loss that is caused by the manual labour. The product condition outcome will also improve since the products will not be unnecessarily transported from pallets to shelves.

- The researcher recommends that, the management should constantly expose its staff to training in order to improve their skills on warehousing. The research recommends that the management of the Finfine Furniture Factory (3F) S.Co must invest in training of its staff to enable the employees to understand the modern warehouse systems which when used it may possibly help the company in reducing costs associated with its warehousing.

- Separate receiving and dispatch sections shall be built in the warehouse section with a new warehouse layout. This recommendation deals with the receiving and the put-away process; every order is inspected before they are put-away. Inspections are necessary in order to confirm that the suppliers delivered the right quantity of products, at the right time and in good condition. Even though the inspections are necessary, they can be done while the put-away process is performed, since the inspections are basic. This recommendation aims to increase the efficiency by eliminating time loss. The efficiency and the product condition outcomes possibly will improve.

- The warehouses section perform its operations manually this may result some errors and some delay while performing their jobs. It may also result de- motivation of the employees because; lack of warehouse management system and way of performing things by hand. An important way in order to improve the warehouse management is investing in an information technology (database system) for the warehouse, which can be used to distinguish the quantities, attributes and locations of the products. If this recommendation is applied it will affect the efficiency, product availability and customer satisfaction outcomes in a positive manner.

- Since it is essential that the right type of equipment is used for the handling processes in order to positively affect the warehouse processes, I strongly recommend that Finfine Furniture Factory (3F) S.Co should consider the possibility of investing in better equipment which would go hand-in-hand with the existing warehouse layout.

The different types of equipment which can be applicable to Finfine Furniture Factory (3F) S.Co. are forklift, pallet jacks, and wheelbarrows etc. By doing so, the company may possibly minimize its main time wasting source which is loading and unloading of materials manually.

- If the obsolete materials are disposed or resold the holding capacity of the stores to the incoming materials will be enough. Currently most of the spaces of the warehouses are occupied by the obsolete materials, thus, removing those obsolete materials is maximizing the capacity of the stores for the new incoming items. And, the company warehouse management furthermore needs to modernize its inventory management system to increase efficiency. Improving inventory practices calls for a high degree of collaboration and visibility across the warehouses.

- Even though other storing equipment‟s are defined as secondary recommendations, the situation is different regarding the small shelf suggestion, since this recommendation does not require a great deal of investment. The racks which are currently used for storing items can be re-designed by adding additional shelves. This recommendation aims to solve the disorganized situation in the store area by providing the advantage of storing individual items rolls on the small shelves that are suggested. It is aimed to improve the efficiency output.

- With this recommendation the researcher suggest that all the areas, aisles, racks and product positions should be defined. Applying a locater addressing system in the warehouse will improve the put-away, the storing, the replenishment and the picking processes, since all these are dependent on either finding the location or finding the product. This improvement possibly will increase efficiency since the put-away and the picking processes will be improved. Product availability and customer service levels will also be improved because of the improvement in the efficiency.

- Hiring new employees will cause an increase in the number of workers per stocked product, which would in turn increase work efficiency and customer satisfaction. Since the aim is to achieve a customer satisfaction, as close to 100% as possible, even though 100% is desirable but not realistic, this is one step closer to achieving it. This

recommendation is limited by the capital that the company is willing to put on staff cost.

- Implementing safety precautions will improve the product condition at warehouse, for example, firefighting equipment"s; fire extinguishers and notices like "***No smoking***", "***Authorized Personnel's Only***" signals must be label (placed) around the entire warehouses. And most importantly the dressing rules and the provided uniforms must be follow-up properly as well as regularly. As a result, the researcher recommends implementing safety measures as soon as possible is vital in securing both the inventories as well as workers.

- This recommendation suggests the use of different racks and modern storage systems that will be used to store products such as screw, brushes and other tools, which do not require a large amount of space. Most of these items are currently placed randomly in the warehouse or stored in boxes on the floor in the main area. This recommendation aims to eliminate the random storing as well as to improve the product condition outcome, since these products will be stored in a better manner.

- Furthermore, it is very important to take the workers of Finfine Furniture Factory (3F) S.Co opinions into consideration since they will be conducting the necessary changes and recommendations which are presented to them. Without the workers acceptance, addressing these changes and recommendations is pointless. Moreover, it is also important to take into consideration that the company is in high competing business environments.

5.4. Limitations of the Study and Directions for Further Studies

Like many research works, this particular study is also subjected to some limitations. First and for most, this study does not comprehensively capture all aspects of supply chain practices as applicable to warehouse management, rather it made emphasis in assessing warehouse activities of the company. In order to benefit from a comprehensive assessment of the dimensions that truly assess the warehouse activities of the company, future studies shall consider more dimensions or key performance indicator of the warehouse performance that haven"t been considered in this particular study and as suggested by (Edward Frazelle, 2001).

The other most important limitation of the study is the fact that though the unit of analysis was only the warehouses of the company, the study was purely conducted on the basis of the responses obtained from the employee of the company since it assumed the company perspective. To have a holistic insight, one needs to have to more other similar company perspective in order to consider it as an industry.

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Annex I

Questionnaires

ADDIS ABABA UNIVERSITY

SCHOOL OF BUSINESS & ECONOMICS GRADUATE STUDIES

DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT

Dear respondents:

I‟m a graduate student at Addis Ababa University School of Commerce in the Department of Logistics and Supply Chain Management. Currently, I‟m conducting a research entitled *"**Assessment of Warehouse Practices: A Case of Finfine Furniture Factory (3F) S.Co**"* as a partial requirement for the award of Masters of Art Degree in Logistics and Supply Chain Management.

The purpose of this questionnaire is to gather data for the proposed study, and hence you are kindly requested to assist the successful completion of the study by providing the necessary information. Your participation is entirely voluntary and the questionnaire is completely anonymous. I confirm you that the information you share will stay confidential and only used for the aforementioned academic purpose only, thus not affects you in any way rather it may possibly help you in improving the warehouse practices of your company. So, your genuine, frank and timely response is vital for the success of the study.I want to thank you in advance for your kind cooperation and dedication of your precious time to fill this questionnaire.

Regards,

Asemelash Teka Kidane

Note:

- No need of writing your name.
- Indicate your answer with a check mark (X) on the appropriate cell both for partI and partII questions and also encircle your choice for part III.
- You can provide answer in Amharic for the open ended questions
- If you need further explanation please do not hesitate to contact me through my personal phone+251911220083, e-mail aseka55@yahoo.com or in person.

Part 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. Current Position_____
5. Year of service in the current position:

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

Part II:

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.

6. Please indicate the degree to which you agree with the following statements regarding the warehousing practices of your company. (Please take your key warehouse activities in mined while rating the statements).

No.	*Warehouse Activities*	*Score*				
		1	**2**	**3**	**4**	**5**
Receiving Activity Indicator						
6.1	In our warehouse there are guidelines or standard operating procedures (SOP) in place that provide instructions to receive items properly.					
6.2	We are successful in minimizing loss by inspecting items properly.					
6.3	Most of the time our warehouse personnel utilizes a reasonable warehouse spaces at the time of receiving.					
6.4	Most of the time our warehouse personnel inspect received materials on the reasonable time.					
6.5	Most of the time accidents are not occurred in our warehouse like physical accident on warehouse					

	personnel, and on equipment‟s at the time of receiving.					
6.6	The shelves for each received materials in the warehouse are adequate to store and put away.					
Put-way Activity Indicator						
6.7	Most of our warehouse personnel‟s are skilled to perform put away activities.					
6.8	The space between the stored items in the warehouse is not enough to move the workers and machinery at the time of performing put away activity.					
6.9	Most of the time in our warehouse, items are placed in the correct location.					
6.10	Most of the time our warehouse personnel‟s performs put away activity manually via labor force.					
6.11	The design of the warehouse (aisles and layout) is easy to access items, free from damage of items and convenient to load and unload.					
Storage Activity Indicator						
6.12	Most of the time our warehouse personnel utilizes warehouse spaces properly.					
6.13	We are successful in minimizing total product damage in the warehouse like product deterioration, breakage, leakage etc.					
6.14	Most of the time our warehouse or storage locations has no inventory discrepancies when bin cards were compared to a physical inventory count.					
6.15	The space between the stored items in the warehouse is not enough to move the workers and machinery.					
6.16	The design of the warehouse is easy to access items, free from damage of items and convenient to load and unload.					
Order Picking Activity Indicator						
	Warehouse personnel‟s are skillful in performing order					

6.17	picking process and achieve their responsibility without significant errors.					
6.18	The design of the warehouse system is properly done to improve customer service and eliminate errors in order picking process.					
6.19	Most of the time in our warehouse items or lines are picked accurately (i.e., the correct items and quantities) from storage based on a request, and then placed into the appropriate truck.					
6.20	The current inventory management and planning system of the company assist the company's to facilitate its order picking process.					
6.21	Most of the time our warehouse personnel‟s performs order picking activity manually via labor force.					
6.22	The shelves of the materials in the warehouse are adequate to facilitate order picking process.					
	Shipping Activity Indicator					
6.23	The staff of the warehouse has not enough awareness about how the motions of them have impact on waiting and un-satisfaction of customers.					
6.24	Most of the time our warehouse personnel serve our customer on the reasonable time ***i.e.*** From the moment an order is received at the storage facility until the time the order is actually shipped to the client.					
6.25	Goods are delivered to buyer according to the specification, right quality without any damage.					
6.26	Most of the time our warehouse workers are not idle i.e. the number of units (e.g., boxes, pallets) or weight moved during a defined period of time, per person-hour, for each person working during that period. It can be considered both when receiving and shipping inventory.					
6.27	Most of the time our warehouse personnel utilizes a reasonable warehouse spaces for product handling i.e. the					

	total storage area that is dedicated specifically to product handling (loading, & dispatching).					
6.28	Most of the time our warehouse personnel serve our supplier and makes product ready for shipment on the reasonable time					

Part III: ***Please encircle on your answer choices and write your feeling on the space provided for open ended questions.***

7. Does the company use any computerized warehouse management system?

A) Yes B) No C) I can"t determine

If "***Yes***" Specify the types of software you uses? _____

8. Which type of storage location assignment policies the company follows?

A) Random location B. Closest-open-location C. Dedicated storage location

D) Shared storage location

9. Does the company follow a proper location of materials?

A) Yes B) No C) I can"t Determine

10. Which item occupying the major space in the store?

A) Active Items B) Obsolete Items C) Scrap

11. Does the company provide warehouse and material management training?

A) Yes B) No C) I can"t Determine

12. How do you judge the safety of warehouse personnel in the warehouses?

A) Protected B) Unprotected C) I can"t Determine

13. How do you judge the warehouse space capability the company?

A) Very Satisfactory B) Satisfactory C) Somehow Unsatisfactory

D) Unsatisfactory

14. What are the overall current problems facing in managing warehouses in your organization?

_____

_____

_____

_____

15. If you have additional comments or ideas about warehouse practice of the company please don‟t hesitate to express your feeling

_____

_____

_____

_____

_____

THANK YOU !!!

Annex II

Semi- structured Interview Questions non-Managers

Part I: General Information

This part of the interview the researcher tries to gather some general information about the background of the respondents.

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. Current Position_____
5. Year of service in the current position:

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

Part II:

6. How is the warehouse managed? Please explain the procedure.
7. How many warehouses does the company use? (Explain for raw material, end product, etc.)
8. How did the company decide the location of the warehouse/s?
9. How did the company decide on the layout of the warehouse?
10. How does your information system work?
11. Is the company using a specific item coding system?
12. How accurate is the warehouse system? (Is it easy to find products)
13. Have there been any problems with the warehouse system? Please explain
14. What kind of storage materials are being used in the warehouse? (Types of racks, etc.)
15. How are the goods checked in?
16. How is the scheduling for reception of goods?
17. Have there been any problems in the warehouse process? Please explain

I highly appreciate your time and contribution to this research. Thank you very much and Best wishes!

Annex III

Semi- structured Interview Questions Managers

Part I:General Information

This part of the interview the researcher tries to gather some general information about the background of the respondents.

16. Age: ☐ 18-25 years ☐ 26-35 years ☐ 36-45 years ☐ above 45 years

17. Sex:☐ Male ☐ Female

18. Educational Qualification:

☐ Below College Diploma ☐ College Diploma ☐ First Degree (BSc, BA)

☐ Second Degree (MSc, MA) ☐ PHD and above

19. Current Position_____

20. Year of service in the current position:

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

Part II:

1. What are the main problems in the warehousing process from the end user side?
2. What are the main problems in the warehousing process from your staff and your organization?
3. Do you think your stakeholders are well performing on the warehousing process? If no what are the challenges?
4. Do you think your organization is well performing in the warehousing process? If no what arethe challenges?
5. Do you believe all the sold goods are delivered at the right time to theright buyer in right quality with the right quantity? If “No” what do you think thereason and your suggestion to solve these problems?
6. How much time does take from physical receipt to customer service notice of availability? (Inventory visibility)

7. Do organizational and human capital challenges occur in the organization‟s property management areas?
8. Based on the response of question 8, do you think that it is fast enough to customer waiting to take the products?
9. Do the customers complain about the service that your warehousing department provide for them as compared to the competitors?
10. If your answer for question 9 "**Yes**" could you mention that on which type of the service did your customer have the complaint?
11. What are the overall current problems facing in managing warehouses in your organization?
12. Overall what are the weakness of the warehousing practice from End Users, suppliers, and stakeholders‟ side?

I highly appreciate your time and contribution to this research. Thank you very much and Best wishes!

Annex VI

Reliability Test result

Case Processing Summary

	N	%
Valid	61	100.0
Excluded[a]	0	.0
Total	61	100.0

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

Reliability Statistics

Cronbach's Alpha	N of Items
.876	35