ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

Assessment of Logistics Performance in Flower Industry: The Case of Floriculture Company in Ethiopia

A Research Thesis Submitted to Addis Ababa University school of commerce in Partial Fulfillment of the Requirements for the Award of the Degree of Masters of Logistics and Supply Chain Management

Prepared by

	ID.No.
ADDISHIWOT NIGATU	GSE/0744/06

Advisor

MATIWOS ENSERMU /PHD/

ADDIS ABABA ETHIOPIA

June, 2016

Addis Ababa University

School of commerce

Business and Economics Graduate Studies

Department of Logistics and Supply Chain Management

Assessment of Logistics Performance in Flower Industry: The Case of Floriculture Company in Ethiopia

By:

Addishiwot Nigatu (GSE/0744/06)

Approved Board Committee

_____	_____
Advisor	**Signature**
_____	_____
External Examiner	**Signature**
_____	_____
Internal Examiner	**Signature**

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Declared By: Addishiwot Nigatu Kebede

DATE: May,2016.

SIGNATURE: _____

ADVISOR'S NAME: Matiwos Ensermu /Phd/

SIGNATURE: _____

DATE: _____

Place of Submission:

School of Commerce, AAU

Addis Ababa, Ethiopia

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This is to certify that this thesis entitled as *"Assessment of Logistics Performance in Flower Industry: The Case of Floriculture Company in Ethiopia"*, submitted in partial fulfillment of the requirements for the degree of Master of Arts in Logistics and Supply Chain Management to the School of Commerce of Addis Ababa University, done by Addishiwot Nigatu is an authentic work carried by him under our guidance. The theme embedded in this thesis has not been submitted earlier for the award of any degree or diploma in any other university to the best of our knowledge.

Advisor	Signature	Date	Place
Matiwos Ensermu /Phd/	_____	_____	Addis Ababa, Ethiopia

ACKNOWLEDGEMENTS

Above all, I am thankful to Almighty God for allowing me to enjoy this part of my academic career. Without your help this thesis wouldn't have been possible.

Appreciation and gratitude are extended to all who have assisted me during the course of my graduate studies and in undertaking this thesis. My special thanks goes to my advisor Dr.Matiwos E. for his guidance and comments throughout the development of this study. I also express my gratitude to Dr.Solomon M. for his useful comments and provision of working materials.

I express my gratitude to Ethiopia horticulture development association especially to all floriculture and communication department for them useful comments and valuable information.

I wish to acknowledge to all flower plc operating in holeta cluster that were willing to participate in the study as a respondent deserve special recognition and gratitude for allotting their valuable time.

Lastly, but not certainly the least, I would also like to extend my highest gratitude and admiration to my family(NKAD), specially my beloved mother Mrs. Almaz D. and my dad Nigatu K,for their unreserved prayer, help, care and encouragement has contributed a lot for the successful completion of the research. I will never forget your support for all thing and friendship thanks a lot for my brother Tagel N. Finally, My heart felt thanks goes to all my friends for their prayer and moral support throughout my study.

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Abstract

This research was conduct on the *assessment of Logistics Performance in Flower Industry: The Case of Floriculture Company in Ethiopia* ***and concerned on the logistics performance. The main objective of the research is to*** *assessing of Logistics Performance in Flower Industry: The Case of Floriculture Company in Ethiopia****. The main research question was what level of achievement of logistics performance dimension (efficiency, effectiveness and differentiation is. The*** *study used explanatory research designs.* ***The researcher used cluster random sampling and*** *purposive sampling technique. Primary data gathering from 12 flower farms have been employed to assess their logistics performance and* ***gathering secondary data from written document.***

The data entry and analysis was conducted by using SPSS version 16. Data analysis was done by using frequency and descriptive statistics, summarize, conclude and recommend the kindling based on the point of the questioner answer of the respondent. It helps to conclude the level of performing their logistics performance. The finding of the study revealed that each dimensions of logistics performance (efficiency, effectiveness, and differentiation) are not necessarily trade-offs, but rather are complementary. The study recommended for all flower industry continuously improves their logistics performance. Furthermore, the outcome of this study expected to remind top-level manager and concerned employees to assess and try to change the logistics activity practices.

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Acronyms

EHDA- Ethiopian Horticulture Development Agency

KPI- Key performance indicator

SPSS- Statistical Package for Social Sciences

Chapter One

Introduction

1.1 Background of the study

According to Douglas M et.al 1998, the overall aim of logistics is to achieve high customer satisfaction. It must provide a high quality service with low – or acceptable – costs. This study can phrase this balance in terms of perceived customer value. Logistics adds value by making products available in the right place and at the right time. If a product is available at the place it is need, logistics is to have added **place utility**; if it is delivered at the right time, logistics has added **time utility**. Then the researcher can phrase the aim of logistics in terms of getting the highest customer utility or perceived value. In essence, this study trying to see the level of maximizes the difference between perceived value and actual costs.

As described in the literature review, performance analysis is a relevant factor in everyday business, in which there is great complexity of business processes. The shorter life cycles of products and services, market globalization and the growing pressure to improve profitability are elements of increased complexity. Thus, the area of logistics performance and its contribution to organizational performance have been on the research agenda. According to Bhagwat and Sharma (2009), analysis of logistics performance is among the main challenges faced by today's companies. Other challenges include, for example, customer service, strategic partnerships, inventory management and logistics flow management, reducing cycle times and geographical coverage along with flexibility (Li et al., 2006).These challenges arise mostly from the decentralization of production systems, leading companies to move towards the development of basic skills and the need to implement efficient and effective management of logistic activities.

This research was focus on assessing logistics performance of flower industry in other hand to investigate the gaps between the conceptual theoretical framework and real practice. To that end, a broad bibliographical review found three approaches that help which approach is the best to evaluate the performance of logistics in the flower industry in the line of this work. So in this

study the researcher see the following approaches, Fugate et al. (2010) approach, considering a number of large companies; the Aramyan et al. (2007) approach, developed for agro-industrial products and the Töyli et al. (2008) approach with a set of Finnish SMEs.

Rui m et al. (2014) addressing An exact interpretation and the existence of measures for evaluating performance are key factors in businesses‘ success. In the current competitive environment, it is essential that organizational leaders, at a given time, know what happened, why it happened and what can be improved in the future.

Logistics performances try to investigate all of activity from inbound logistics up to outbound logistics. Before starting this study, the student researcher try to see and read different article and material after many investigations the researcher want to identify the gap based on the above major factors that help how to measure and interpret logistics performance in the flower industry. In addition to this, different authors write about how to measure logistics performance through theoretical aspect but the student researcher does not get how to manage and analysis logistics performance on flower industry.

However, there is limited empirical evidence that can help to address these relevant issues to the best of the researcher's knowledge. Thus, the inadequate of empirical works that assess the logistics performance at different case but not in flower industry and further in this study to test the relationship between logistics performance with different variable such as organizational performance, efficiency, effectiveness and differentiation provides a rationale for new research contribution. This study aims to contribute in filling this gap and give recommendation for gap in the flower industry.

Some studies in this area reported that the objectives of company performance evaluation could be of various kinds. In this connection, Thomas (2006) states that some of the main objectives of performance evaluation at the organizational level are helping to clarify objectives, communicating priorities, monitoring organizational functioning and evaluating whether the organization is meeting the objectives outlined. Organizational performance is the result of performance at the sectorial level and, thus, the evaluation of logistics performance represents a component of organizational or business performance evaluation.

1.2 Overview of the flower Industry in Ethiopia

The horticulture sector has shown a very dramatic growth in Ethiopia, even surpassing most African nations that have an established operation long before Ethiopia start growing flowers. A sector clearly shows the improved and attractive environment that the investment regime provides to foreign and local investors. Ethiopia is blessed with a favorable climate and vast land, water and labor resources which together make it an incredible investment hub. In essence, the sector is one of the top five foreign exchange earners to the nation. Land size is also expanding every year where new floriculture enterprises are opening.

Ethiopia is now the second largest flower exporter in Africa. It produces large budded and long stemmed roses with vibrant colors. Many varieties are available and the main production season is from October to May. Flowers are produced in modern farms around Addis Ababa and in the Rift Valley and are exported via Bole International Airport in Addis Ababa. Temperatures are conducive to floriculture and there are long hours of sunshine – usually for more than eleven hours a day. (*www.ehda.gov.et)*

The horticulture export development sector is given priority in the current Growth and Transformation Plan (GTP) of the Federal Government of Ethiopia, and as a result the Ethiopian Horticulture Development Agency (EHDA) has been established to spearhead the industry by providing the necessary support.

Ethiopia, next to Kenya, is the second largest supplier and exporter of flowers from Africa. In terms of foreign exchange earnings, the country has generated 265.71 million USD from the sector in the budget year of 2011/12. Europe is the major market destination of Ethiopia‘s high quality horticultural produces, especially flowers.

Due to the prevailing investment environment, attractive incentive packages and overall government supports, Ethiopia has now become center of attraction for foreign direct investment (FDI), in horticulture development**,(EHDA, 2012).**

1.3 Statement of the problem

Logistics plays its role as early as in the beginning of 1900s, in distributing the farm products (Lambert, Stock, & Ellram, 1998) and it continues to evolve until today, in which it is regarded as a strategic industry. Logistics could also improve business performance through its flexibility and advanced technology application, thus leading to organisational success (Tracey, 1998). In a global supply chain context, moving goods across borders has been one of its significant role recently. The remarkable expansion in external trade has brought higher demand for an efficient and effectiveness of logistics services (Ali, Jaafar, & Mohamad, 2008).

Researchers have always find it difficult to define LP because organisations have multiple and frequently conflicting goals (Chow, Heaver, & Henriksson, 1993). In the context of this study, *efficiency* is a measure of how economically the firm's resources are utilized (Mentzer & Konrad, 1991; Neely et al., 2005). Several critical areas in LP *effectiveness* as described by Langley & Holcomb (1992) are product guarantee, availability and fulfilment time. They also extended the definition of effectiveness by adding *differentiation* as the ability to create value for the customer through the uniqueness and distinctiveness of logistics services.

As mentioned earlier that LP plays a vital role in achieving the organisational's goals. The evaluation is based on how well goal is met (Mentzer & Konrad, 1991) and to what extend the overall productivity ad performance would reflect LP (Stabler, 1992). Consequently, LP helps the fulfillment of the organisation's objectives and strategy (Braz, Scavarda, & Martins, 2011) as well as satisfying the customers (Kayakutlu & Buyukozkan, 2011). In logistics management unwise decision, lack of skilled labor and poor logistics planning gradually increase expenses and affect profitability of the company. Most of these problems occur due to improper decisions related to logistics practice in the company.

In a highly competitive market for customers and resources, logistics plays an important role, given the availability of products or services to customers, and promotes higher levels of

efficiency and effectiveness in carrying out activities, leading to better results (Fugate et al. 2010). Thus, in recent years a considerable number of publications have recognized the importance of logistics and supply chain management for business performance. Logistics has been identifying as an area to build cost and service advantages. Therefore, companies are more focused on customer needs and trying to find ways to reduce costs, improve quality and meet the growing expectations of their clients.

According to the information obtained from the association for the flower producers and exporters and different manager or owner say that air transport cost is one of the main challenges they face in the sector. The other challenging factor that holds back the sector is its market destinations. Though there had been ambitious plans to diversify the market destinations, the effort to realize it was not satisfactory, according to some observers. Since 70% of the export is destined for the Netherlands, it was not able to diversify it in the wider market across the global market. Some observers are of the view that the flower sector is ‗fenced by the Dutch' preventing local producers from exploring alternative and competitive markets.

In addition, this study attempt to identify the gap or problem related to the main mechanism to analysis logistics performance in the flower industry. In this study the following problem are the major factors to affect the performance of logistics in the flower industry. In generally, from different source the student researcher identify the following problem. Lack of market to absorb the production,lack of coordination among traders to increase their capacity to search for potential markets and control the activities of the middlemen,poor product handling; packing is traditional and only in sacks or covered with leave,imperfect pricing system(middlemen decide on the price since product is perishable, limited access to external markets.Due to lack of transparency, farmers' negotiation skills are limited, informal transaction prevails in the export system.

Sources: http://www.intracen.org/itc/blog/market-insider/Ethiopian-flower-sector-bloomer-or-gloome/Friday, 28 Mar. 2014)

1.4. Basic research questions

This research was needed to investigate the following basic questions.

1. What looks like the logistics performance of in the flower industry?
2. What are the major problems in the current logistics practices?
3. What is the level of achievement of logistics performance dimension (efficiency, effectiveness and differentiation)?

1.5. Objective of the study

1.5.1 General objectives

- The general objective of this research was to assess Logistics Performance in Flower Industry: The Case of Floriculture Company in Ethiopia.

1.5.2 Specific objectives

In addition, the student researcher has the following specific objectives,

- To assess the overall of logistics performance
- To identify the major problem in the logistics practice
- To assess logistics performance of flower industry in terms of logistics efficiency
- To assess logistics performance of flower industry in terms of logistics effectiveness and
- To assess logistics performance of flower industry in terms of logistics differentiation
- To highlight key logistical functions or processes problems with respect to their performance aspect as faced by flower plc

1.6. Significance of the study

This study was beneficial for top manager, for all owners, for employees, new researcher, for all Flower Company and new entrance flower plc because the student researcher try to describe detail as the following paragraph.

The study was enriching their knowledge of the industry and identifying areas for further research. It help some important executive bodies (top manager, owner) to look at the subject matter seriously and take corrective action on the existing problems through gives formative techniques/mechanism for all flower industry to step with the existing market situation. Because this study identifies the problematic area of logistics, performance measurements practice.

Moreover, this research provides recommendations on how to evaluate the performance of a certain logistics activities in accordance to logistics management performance. Based on recommendation, it helps to give training for all employees that help to develop their skill and knowledge, utilization of new and advance technologies and to provide other improvement on the performance measurement mechanism.

It was serving as a stepping-stone for further study. On the other hand, apart from its relevance for academic purpose, it believed that it adds its own contribution on the to the body of knowledge this study will stimulate future scholars and researchers to further research of logistics research in connection with logistics performance of flower industry. It means this study serve as a future reference for new researchers on the subject of logistics performance.

It also serves as a guideline for new entrance investor. this paper try to links the gap between the theory and practices in relation to logistics management and performance measurement further more this paper was important for discussing the nature of competitive business environment with logistic performance measurement system.

1.7. Delimitation of the study

The student researcher focus on floriculture Company operating in holeta cluster. The scope of the study was delimited on logistics performance in the flower industry in the past years (2007E.C).Due to financial and time constraints.

In addition, the following challenges are happen in the time of doing this study which have possibility of bringing adverse effect on the results of the study are; Lack of sufficient resources necessary to accomplish the study, lack of sufficient data in the office because of poor documentation and Meeting the Directorate Head become difficult. Because most of the time they were in meeting or training and distributing questionnaire to the employees at their work place were also the most difficult work but the researcher stayed patiently for the successfulness of the study.

1.8 Limitation of the study

The unavailability and if does so, the inaccessibility of available scanty literatures on the measurement of logistics performance in floricultural supply chain in particular and in an ideal supply chains of other settings in general to the best of the researcher knowledge have possibly remained as the main limitation of the study. Nevertheless, appropriate and systematic effort has been excreted to get available literatures on logistics performance.

Assessing the logistics performance in terms of its three dimensions as it can be applied to the flower supply chain in particular and the horticultural or agricultural supply chain in general requires further and comprehensive study in different tires of the same supply chain. However, the present study is confined to systematically assessing the performance of the logistical activities of flower plc in holeta cluster.

1.9 Organization of the study

This research paper was organized in the following ways. It is dividing into five chapters. **Chapter 1** has an introduction part. **Chapter 2** has about review of the related literature. **Chapter Three**: Methods of the Study**:** Under this chapter was describe the type and design of research; the subjects/participant of the study; the sources of your data; the data collection tools/ instruments employed; the procedures of data collection; and the methods of data analysis used. **Chapter Four**: This chapter summarizing the results/ findings of the study, and interprets and /or discuss the findings. **Chapter 5**: This chapter comprises four sections, which include summary of findings, conclusions, limitations of the study and recommendations. The bibliography and other relevant appendix also include supporting finding.

Chapter Two

Literature review

2.1 Definition of Logistics

Logistics is one of the dynamic activities that enable the connection between production and consumption (Bartolacci, et al. 2012). According to the Council of Supply Chain Management Professionals, logistics consists of a set of processes encompassing planning, implementing and controlling the flow of goods, services and related information (Vitasek, 2013). Logistics is a complex business and that can be measured from different perspectives. One of the objectives of logistics is to guarantee the efficiency and the efficacy of all the procedures from the point of origin to the point of destination whilst meeting the customers‘ required quality, including information reliability and sensibility to customers‘ needs.

Logistics is not only relevant for the production sector but it is also crucial for enterprises from all segments, e.g. banks, retailers, government and institutions. Logistics plays a key role in the competitiveness of organizations whilst creating value by providing time and place utility (Christopher, 2005; Lambert et al., 2006).

Waters (2003) refers ―without logistics, no materials move, no operations can be done, no products are delivered, and no customers are served". To position the right products close to the right consumer, several activities have to be performed, including transport, customer service, information technology and communications, finance, warehousing and outsourcing (Frazelle, 2002).

Council of Supply Chain Management Professionals, 2012), Logistics is estimated as one the major expenditures for businesses, though varying widely across sectors (Waters, 2003). Consequently, in today‘s competitive environment, there is a pressing need to control logistics costs and performance measurement has proven to be a successful tool in achieving business objectives. Performance measurement systems (PMSs) are frameworks that integrate

performance information - performance indicators(PIs) and key performance indicators (KPIs) - in a dynamic and accessible way in order to achieve consistent and complete performance measurements (Lohman et al., 2004).

2.2 Costs associated with logistical activities

According to, (Douglas M. lambert et.al 1998) the following are logistics cost

1. **Customer Service Levels**

   The key cost trade-off associated with varying levels of customer service is the cost of lost sales. Moneys that are spent to support customer service include the costs associated with order fulfillment, parts and service support.

   The cost of lost sales includes not only the lost contribution of the current sale, but also potential future sales from the customer and from other customer due to word–of-mouth negative publicity from former customers.

2. **Transportation Costs**

   The activity of transporting goods drives transportation costs and customer, product line, can categorize Costs, type of channel such as inbound versus outbound and so on.

3. **Warehousing Costs**

   Warehousing costs are created by warehousing and storage activities and by the plant and warehouse site selection process.

4. **Order Processing/ Information Systems Costs**

   Order processing costs include such as order transmittal, order entry, processing the order and related internal and external costs such as notifying carriers and customers of shipping information and product availability. Shipper and carriers have invested a great deal in improving their information system such as electronic data interchange (EDI), satellite data transmission and bar coding and scanning shipments and sales.

5. **Lot Quantity Costs**

   LQC are purchasing or production related costs that vary with changes in order size or frequency and include:

   i. Setup costs
      1. Time required to set up a line or locate a supplier
      2. Scrap due to setting up the production line

3. Operating inefficiency as the line begins to run or as a new supplier is brought on board

ii. Capacity lost due to downtime during changeover of line or changeover to a new supplier

iii. Materials handling, scheduling and expediting

iv. Price differentials due to buying in different quantities

v. Order costs associated with order placement and handling

6. Inventory Carrying Costs

The logistics activities that make up inventory carrying costs include inventory control, packaging and salvage and scrap disposal. The 4 major categories of inventory cost are:

1 **Capital cost/ Opportunity cost** - which is the return that the company could make on the money that has tied up in inventory.

2 **Inventory service cost** – which include insurance and taxes on inventory

3 **Storage space cost** – This includes those warehousing space related costs which change with the level of inventory.

4 **Inventory risk cost** – including obsolescence, pilferage, relocation within the inventory system and damage.

2.3 operating objectives of logistics

According to, (Douglas M. lambert et.al 1998) the following are logistics operating objectives

1. **Rapid response:** This isflexibility objective of an organization: Some companies measure this as response time to customer‘s order. On an average how much time do we need to fulfill one particular type of customer‘s order in a year? This is a measure of **Rapid response.** Logistics should ensure that the supplier is able to respond to the change in the demand very fast. Entire production should change from traditional **push system** to **pull system** to facilitate rapid response. Instead of stocking the goods and supplying on demand, orders are executed on shipment-to-shipment basis. Information Technology plays an important role here as an **enabler**. IT helps management in producing and delivering goods when the consumer needs them. This results into reduction of inventory and exposes all operational deficiencies. Now the management resolves these deficiencies and slashes down costs.

2. **Minimum variance**: This i**s** delivery objective of an organization, o**r.** If 100 deliveries are made in a month/quarter/year how many reached as per the commitment made to the customer?

Any event that disrupts a system is variance. Logistics operations are disrupted by events like delays due to obstacles in information flow, traffic snarls, acts of God, wrong dispatches, damage in transit. Traditional approach is to keep safety stocks and transport the goods by high cost mode. The cost of this approach is huge. Logistics is expected to this can be measured as _On Time Delivery'minimize these events, thereby minimize and improve on one time delivery.

3. **Minimum inventory:** This is component of **cost** objective of a company. **Inventory** is associated with a huge baggage of costs. It is termed as a necessary evil. Objective of minimum inventory is measured as Inventory Turns or Inventory Turnover Ratio. Americans call this measure as **turn velocity**. Logistics management increases these turns without sacrificing customer satisfaction. Higher turns ensure effective utilization of assets devoted to stock. Logistical management should keep the overall well being of a company in view and fix a minimum inventory level without trying to minimize the inventory level as an isolated objective.

4. **Movement consolidation:** Transportation is the biggest contributor to logistics cost. Transportation cost depends on product type, size, weight, distance to be transported etc. for transporting small shipments just in time [reduction in inventory costs] expensive transport modes are used which again tend to climb the costs. **Movement consolidation** is planning several such small shipments together [of different types of shipments] by integrating interests of several players in the supply chain. Generally, large shipment size and long distances reduce transportation cost per unit. Movement consolidation shall result into reduction in transportation costs.

5. **Quality:** If the quality of product fails logistics will have to ship the product out of customer‘s premises and repeat the logistics operation again. This adds to costs and customer dissatisfaction. Hence logistics should contribute to TQM initiative of management. In fact, commitment to TQM has made the management‘s world over wake up to the significance of logistics function. Logistics can play a significant role in total quality improvement by improving the quality of logistics performance continuously and continually.
6. **Life cycle support** [cradle to cradle logistical support- produce, pack (cradle) and repack (cradle)]. Logistics function is expected to provide life cycle support to the product after sale.

2.4 An Overview of Floriculture Industry in Ethiopia

A Brief Historical Perspective of Floriculture in Ethiopia

Ethiopia is now the second largest flower exporter in Africa. It produces large budded and long stemmed roses with vibrant colors. Many varieties are available and the main production season is from October to May. Flowers are produced in modern farms around Addis Ababa and in the Rift Valley and are exported via Bole International Airport in Addis Ababa. Temperatures are conducive to floriculture and there are long hours of sunshine – usually for more than eleven hours a day.

Ethiopia‘s vast land, favorable climate, and water and land resources combine to make it an incredible hub for investment. Located in the Horn of Africa, Ethiopia is at the crossroads between Africa, the Middle East and Europe. Within easy reach of the Horn‘s major ports, Ethiopia is close to its traditional markets for export products—the Middle East and Europe. This geographical proximity provides the major exporters in the world unparalleled access to the Ethiopian floricultural market. Currently in production within Ethiopia are a number of flowers, including roses, gypsophilia, hypericum, limonium, carnations and chrysanthemum. The Ethiopian Highlands provide near ideal growing conditions for roses. Ethiopia‘s rose industry grew from 40 hectares productive to 250 hectares productive between 2004 and 2006, and is positioned to grow even more. (*www.ehda.gov.et)*

Kampala: March 29, 2015 –stated that Ethiopian flower industry emerged in the late 1990s, and despite being a late-comer, Ethiopia has become the second largest flower exporter in Africa (after Kenya). Projections are for even further future growth.

Exports are expected to reach $550 million by the end of 2016. The Ethiopian flower industry represents an extraordinarily fast and successful diversification into a non-traditional export product.

Climate conditions have made Ethiopia a favourable cultivation site for such products as it is situated in the tropics, with its diverse range of altitudes. Additionally, the Federal Government, the Ethiopian Horticulture Producers and Exporters Association (EHPEA), and international investment played key roles in Ethiopia‘s floriculture industry development.

The EHPEA, which included private sector entrepreneurs, has been instrumental in gaining government support in the sector. The organisation‘s aim was to promote the sector. Following recent ethnic violence and reduced labour force in Kenya, Africa‘s number one global flower exporter, investors and producers needed to diversify and invest in other countries.

With good climate conditions and cheap transportation costs, Ethiopia was a favourable choice, especially for the cultivation of roses. State-owned land was made available for flower farms at affordable prices, especially near the airport. This reduced transportation cost facilitated market entry. The government also offered attractive incentives for investors.

For example, a five-year corporate tax exemption for inputs, import duties were scrapped and investors were also given access to financing from banks. It became obvious that Ethiopia had a comparative advantage in the production of roses, especially with vast amount of labour. As the industry expanded, the unit cost of production decreased.

The sequence of entry of firms in the Ethiopian flower industry shows that domestic entrepreneurs played a major role in the initial stages. With the exception of Golden Rose and Ethio Dream, the first movers and early imitators were domestic owned firms. Foreign firms (in the form of joint-venture or full ownership) started to enter mostly after 2003.

A significant number of the foreign firms came from other African countries, including Kenya (for example Linsen, Abyssinia, Maranque, Karuturi, and Sher-Ethiopia), Uganda and Zimbabwe. The better investment climate in Ethiopia compared to these countries may have contributed to the increasing shift of foreign investment to Ethiopia.

Through international investment, knowledge transfers and technological innovations can be introduced into the domestic market; for example, through improved agricultural methods. International investment is beneficial for the recipient country as it also promotes economic activity, therefore increasing employment.

In the case of Ethiopia, the cut flower industry has experienced investment from a range of geographical and industrial backgrounds, from the Netherlands, United Kingdom and India, to more regional markets such as Nigeria, Sudan and Oman, thereby also encouraging South-South integration. Nevertheless, the biggest market for the Ethiopian rose is the Netherlands, as around 90% of rose exports go to Holland. Evidently, Ethiopia has emerged as a strong global cut flower market competitor.

The floriculture industry has had a huge impact on Ethiopia‘s economy and society; most significantly on job creation, which is said to amount to over 100,000 new jobs in the last five years.

Locals are being trained in business and management skills and most donors are giving back to society in one way or another. The industry has also had a major influence on gender perspectives, as more than 75% of workers are female. Through production diversification, Ethiopia can depend more on trade and less on aid. Although floriculture is a fairly new industry in Ethiopia, sales records of flower exports have shown how profitable diversification can be achieved through trade.

Source, Http// www.ehda.com

Prospect of floriculture investment in Ethiopia

Flora Culture International—a leading investor in Ethiopia—has described ―parts of the country south of Addis Ababa [as being] not unlike the Naivasha area in Kenya, where well over 50% of Kenya's flowers are grown, and could be exploited in much the same way.” Many of Ethiopia's farms promote ethically grown produce. Those that do not have the capacity to do so have expressed interest in becoming involved in such initiatives. Dutch Ambasssador to Ethiopia Alphons Hennekens has said: ―The fact that a lot of Dutch companies decided to invest in Ethiopia has meant that the investment climate in the country is favorable...We have seen more spectacular growth in the floriculture sector here than anywhere else in the world.” Last year, the Ethiopian Government introduced a new environmental law based on its work with Ethiopia's Environmental Protection Agency. The procedure involves assessing the environmental impact before a job starts, conducting regular environmental auditing to make sure the environment is not being polluted, and closing down the company if pollution occurs. Investors committed to ethical initiatives and promoting environmentally sustainable flower production can do so in Ethiopia.

Exporting cut flowers

The volume of exports of cut flowers is growing and this is showing great promise as a developing industry sector. A substantial number of investors have started operating in Ethiopia due to the Government‘s focus on this sector and the unparalleled advantages that Ethiopia has in floricultural production compared to other producers. Flower exports as a share of total exports grew from 0.15% in 2001 to 1.59% in 2005. The value of Ethiopian flower exports rose from $660,000 in 2001 to $12,645,000 in 2005.

Trade association

The Ethiopian Horticulture Producer Exporters Association (EHPEA) was created to provide a forum for exporters of cut flowers. The trade association currently has 66 member companies, is growing rapidly, and is available to provide advice and membership that could be of benefit to

foreign investors looking to import flowers from Ethiopia. The country‘s floriculture potential is high thanks to diverse agro-ecological conditions for all-year-round production, an abundant, low-cost and easily trained labor force, the proximity to E.U. and Middle East markets and strong government support. –I don‘t think there is anywhere else in the world where flowers are produced at a cost of less than 20 dollars per hectare of land per year,” according to Ethiopian Minister of Trade and Industry Girman Birru. –I don‘t think there is any country around that has a labor force as disciplined as ours, nor a government so totally in support of promoting and developing the sector on a day-to-day basis". (Http// www.ethiopianembassy.org)

2.5 Performance measurement

Performance has been viewed in a great variety of ways by researchers. The definition and measurement of performance is often a challenge for researchers because organizations have multiple and frequently conflicting goals. Thus, the definition of the performance is _…ultimately up to the evaluator‘.

Performance refers to the way in which work is done. There can be a good performance or a poor one. But what is ***performance measurement***? Neely et al. (1995: 86 – 146) defined it as the process of quantifying the efficiency and effectiveness of an action or activity. The purpose of performance measurement is to find out whether things are going the right way and, if not, to find what the causes that generated a poor performance were. After this step, there have to be found solutions for improving performance. There are several reasons for measuring performance: for improving performance, for avoiding inconveniences before it‘s too late, for monitoring customer relations, for process and cost control and for maintaining quality (Ackerman, 2003: 1). The main instruments for assessing performance are performance indicators, also named key performance indicators. They are specific characteristics of the process, which are measured in order to describe if the process is realized according to pre-established standards. The best way to use indicators is to compare process values with normal, standard values. If there are poor results, poor performance, in reality, improvements for the

process have to be made. Indicators are used for comparison with expected values. They are the control system of the studied process.

2.6 Logistics Performance Management

Logistics management plays an important role of adding competitive advantage to a firm in customer support and business excellence (Buyukozkan et al., 2008). Effective logistics management provides the right product in the right place at the right time. It involves control of product and information flow to create value-added activities such that delivery is accomplished through suitable distribution channels (Narasimhan& Kim, 2001). It is managed to yield minimize cost and time but maximize service level, for example, on time delivery, minimum stock level, high quality or non-damage products (Celebi et al., 2010; Lai et al., 2010; Murthy et al, 2004). Thus, logistics management is a one of the contributing operations that encompasses activities ranging from customer service, order processing, inventory management, transportation, warehouse management, packaging, demand and forecasting, production planning, purchasing and procurement, facility location, and distribution. All of these are supported by enormous information flows (Celebi et al., 2010; De Haan et al., 2007).

Performance measurement is usually carried out in financial and non-financial terms, focusing on planning and controlling to monitor and improve logistics management (Garcia et al., 2011; Wegelius-Lehtonen, 2001). Nevertheless, financial measures are not sufficient for decision making in strategic and policy planning. Additional non-financial measures such as quality, reliability, flexibility, and delivery performance (Laitinen, 2002) must be incorporated to complement the decision. Further analysis of the relationship between logistics activities and logistics performance are carried out.

While providing a brief narration on the historical evolution of an inquiry to logistics performance Mansidão and Coelho, 2014:4 have highlighted the following:

> At the logistical level, the importance of analyzing performance was first shown in the work of Bowersox and Closs (1996), who reported that measurement of logistics performance consisted of a methodology for analyzing resources of the logistic function, and its main objectives were monitoring and control of the logistics operations. After this

initial step, analysis of logistics performance has become an important issue in the area of management science research, but despite this attention from researchers, there is little convergence both in terms of methods and in terms of results for its validity. As Robb et al. (2008) mention, since logistics deal with physical, informational and cash flow management, it is generally recognized as a major determinant of business performance, but practices particularly in terms of performance analysis, are still at the stage of being studied by professionals and academics.

This depicts that the issue of investigating the construct of logistics performance in logistics research is under its development stage, irrespective of its importance in an organizational performance. The available literatures have recognized the importance of logistics performance for improving the well functioning of business processes of an organization and across supply chains (Fugate et. al, 2010:53, Keebler and Plank, 2009:795, Green Jr et. al, 2008, and Mansidão and Coelho, 2014:4). Conceptually, logistics performance may be viewed as a subset of the larger notion of firm or organizational performance (Chow et. al, 1994:23).

Given the lack of any universally-accepted definition for performance in the organizational performance literature, it should not be surprising that extant literature offers many ideas about the dimensions that ought to be incorporated into a conceptualization of ―logistics performance" (Chow et. al,1994:23). Mentzer & Konrad (1991) as quoted in Fugate et al (2010:44) defined logistics performance as effectiveness and efficiency in performing logistics activities. Chow et. al, 1994:23) have defined logistics performance as the extent to which goals such as sales growth, job security & working conditions, customer satisfaction, product availability, cost-efficiency, profitability, social responsibility, on-time delivery, keeping promises, low loss & damage, "fair" prices for inputs, and flexibility are achieved.

In the literature, it is possible to identify a significant amount of work on the relationship between logistic performance and organizational performance, such as the work of Larson et al. (2007) who demonstrated that the performance of logistics activities could have an impact on organizational performance. Those authors, in a study conducted among business leaders on the impact of the perception of logistics performance on business results, found that a significant number of managers said that the perceived impact of logistics performance consisted of better

performance in customer service, better inventory levels and optimization costs. Moreover, this model is based on the assumption found in the literature, that there is a positive correlation between logistics performance and organizational performance.

As logistics are increasingly expected to contribute to organizational performance, several studies have examined the influence of logistics performance operations and logistics management practices on overall company performance. Some authors, such as Zhou and Benton (2007) investigated the link between logistics management practices and distribution performance regarding reliability of service, and concluded that practices related to the distribution and sharing of information have a direct impact on performance. Also Green et al. (2008), addressing the relationship between logistics practices and organizational performance in a large number of companies in the United States, concluded that logistic practices have a positive impact on business performance, namely in speed of delivery, the responsiveness and flexibility of delivery, and also influence marketing performance, which has a leverage effect on the average sales growth and business profitability.

Roth et al. (2008) investigated the antecedents and performance results of a set of leading global companies, concluding that information technology and logistics management contribute to increased sales and profitability. More precisely, information and communication technology increased sales and logistics management increased organizational profitability. Chow et al. (1994), who focus on analyzing the relationship between objectives, practices, skills and management performance in the supply chain, concluded that logistics practices influence logistics capabilities positively in terms of quality and service, operation distribution and efficiency.

2.7 Analysis of Logistic Performance

As described in the literature review, performance analysis is a relevant factor in everyday business, in which there is great complexity of business processes. The shorter life cycles of products and services, market globalization and the growing pressure to improve profitability are elements of increased complexity. Thus, the area of logistics performance and its contribution to organizational performance have been on the research agenda. According to Bhagwat and

Sharma (2009), analysis of logistics performance is among the main challenges faced by today's companies. Other challenges include, for example, customer service, strategic partnerships, inventory management and logistics flow management, reducing cycle times and geographical coverage along with flexibility (Li et al., 2006).These challenges arise mostly from the decentralization of production systems, leading companies to move towards the development of basic skills and the need to implement efficient and effective management of logistic activities.

As referred to by Schramm-Klein and Morschett (2006), analysis of logistics performance is a strong current trend, which involves monitoring and planning in order to establish connections between the results of indicators and the firm, determining how well companies achieve strategic objectives as part of their definition and competitive orientation (Gunasekaran and Kobu, 2007). However, despite this importance, one of the gaps identified in the literature on this subject is that most publications on Logistics or Supply Chain Management are outlined for, or targeted at large enterprises, with few publications discussing logistics (Spillan et al., 2010).

2.8 Logistics Performance Approach

Logistics Performance: Dimensions of Fugate

Fugate et al. (2010) analyzed the relationship between logistics performance and organizational performance, stating that logistics performance is multidimensional and is a function of the resources used in logistics, according to outlined objectives and outcomes against competitors. In this context, the authors theorized that analysis of logistics performance should be based on evaluation of a set of dimensions of the activities carried out by the logistic function, which are namely, efficiency, effectiveness and differentiation, as shown in the following table:

Dimensions	Authors
Efficiency	Mentzer and Konrad (1991), Griffis *et al.*(2004), Bobbitt (2004), Seldin and Olhanger (2007).
Effectiveness	Mentzer and Konrad (1991), Griffis *et al.* (2004), Bobbitt (2004), Seldin and Olhanger (2007).
Differentiation	Langley and Holcomb (1992), Bobbitt (2004), Flint *et al.* (2005), Lambert *et al.*(2005)

Source: Fugate et al. (2010)

According to these authors, efficiency is a dimension related to the use of resources allocated to the logistic function, effectiveness can be defined as the extent to which objectives are achieved and differentiation is understood as the value that can be generated by the elements of customer service in relation to competitors.

In this context, Fugate et al. (2010) in carrying out empirical research to analyze the interrelationships between the different variables of logistic performance and their impact on organizational dimension. The conceptual design of the Fugate model consists of two levels of analysis. The central level, which represents the convergence of the model for analysis of the impact of logistics performance on organizational performance, where the authors seek to obtain the final result of the investigation. Moreover, at a previous level, it examines variables that form the constructs of logistic performance. This model has been tested and validated with a number of randomly selected large companies. These authors‘ conclusions point to confirmation of a significant relationship between organizational performance and logistics performance.

The Fugate model refutes an argument at the center of controversy over the possible trade-off between the constructs underlying performance dimensions. Some authors have reflected on the relationship between business objectives and the concepts of efficiency and effectiveness. According to these authors, when defining a direction or a goal, business leaders should opt for one dimension, since it appears that performance progress in one dimension entails a step backwards in another.

Conversely, Fugate et al. (2010) find firms that choose to combine efficiency and effectiveness achieve better performance than their competitors who choose only one of these dimensions,

which is in line with what is stated by Seldin and Olhanger (2007). This finding clarifies the condition that companies should not consider the dimensions of performance as antagonistic, but instead be able to achieve both simultaneously.

These authors also emphasize the fact that in addition to efficiency and effectiveness, the logistics function must also provide value added service to its customers to differentiate companies in today‘s market. Thus, the main task is conjugating the three constructs of logistics performance simultaneously and being innovative, since, as mentioned by Fugate et al. (2010), excellence in logistics is associated with better organizational performance.

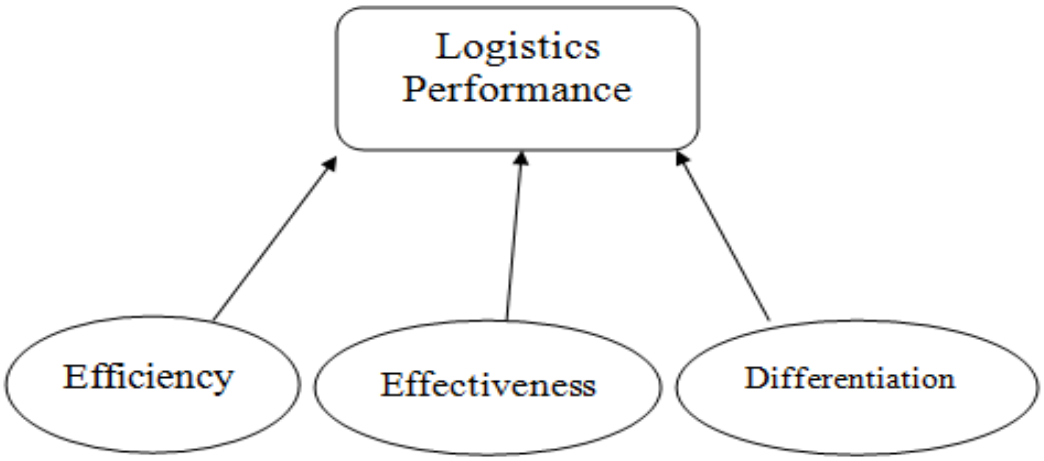
2.9 CONCEPTUAL MODEL FOR THIS STUDY

In the horticulture industry have more important role in the developing or success of the industry. Effective logistics management provides the right product in the right place at the right time. It involves control of product and information flow to create value-added activities such that delivery is accomplished through suitable distribution channels (Narasimhan & Kim, 2001). It is managed to yield minimize cost and time but maximize service level, for example, on time delivery, minimum stock level, high quality or non-damage products (Celebi et al., 2010; Lai et al., 2010; Murthy et al, 2004).

For this study the student researcher was compare and contract about logistics performance variable in different conceptual model that are read detail before decision. According to previous models, the authors assume that logistics performance is influenced by different factors such as effectiveness, efficiency, differentiation, flexibility, responsiveness, quality, operational metrics, and service level and logistics costs. As can be inferred, all these factors can affect logistics performance and performance at the organizational level. From the factors mentioned earlier, the most important ones must be isolated in order to understand the relationship of each with logistics performance.

This study more focuses on Fugate et. al (2010) article because it is done more comprehensively and in detail as compare with other related article. With the aim of modeling logistics

performance with the concept of simultaneous pursuit of efficiency, effectiveness, and differentiation, they summarized that logistics performance is consisted of the dimensions of efficiency, effectiveness and differentiation. See the following figure



Source: modified and adopted conceptual model of logistics performance developed by Fugate et. al (2010: 44)

2.10 Hypothesis of the Study

Every organizational or industry measure their own performance because it helps to find out whether things are going the right way and if not, to find what the causes that generated poor performance were. For this reason, the researcher investigate best-fit variable for logistics performance in the case of flower industry for all cluster. So that for this study, the best fit variable is logistics performance, organizational performance, differentiation, efficiency and effectiveness. All of the above variable include all of the internal part and include the external part of the industry performance.

Fugate et al. (2010) analyzed the relationship between logistics performance and organizational performance, stating that logistics performance is multidimensional and is a function of the resources used in logistics, according to outlined objectives and outcomes against competitors. In this context, the authors theorized that analysis of logistics performance should be based on evaluation of a set of dimensions of the activities carried out by the logistic function, which are namely, efficiency, effectiveness and differentiation.

Conversely, Fugate et al. (2010) find firms that choose to combine efficiency and effectiveness achieve better performance than their competitors who choose only one of these dimensions, which is in line with what is stated by Seldin and Olhanger (2007). This finding clarifies the condition that companies should not consider the dimensions of performance as antagonistic, but instead be able to achieve both simultaneously.

Chow et al. indicated that performance is multi-dimensional, because one measure is not sufficient for a logistics performance – logistics performance has to be seen as subsection of the larger conception of firm or organizational performance (Chow et al., 1994). To know the meaning of performance there are two central organizational and logistics goals which have to be defined. These are divided in two dimensions: The simplest dimension and which affect the performance – in particular logistics performance – is to differentiate between (i) efficiency and (ii) effectiveness (Gleason and Barnum, 1986) in performing logistics activities. Generally efficiency is ―doing the things right" and effectiveness is defined as ―doing the right thing" (Gleason and Barnum, 1986). Logistics effectiveness has to be viewed as the extent to which the logistics function's goals – e.g. fulfillment time or in-stock availability – are accomplished (Mentzer and Konrad 1991). Logistics efficiency is the ratio of resources utilized against the results achieved. In a broader sense it indicates the measurement of how well the resources consumed are utilized (Mentzer and Konrad, 1991).

These authors also emphasize the fact that in addition to efficiency and effectiveness, the logistics function must also provide value added service to its customers to differentiate companies in today's market. Thus, the main task is conjugating the three constructs of logistics performance simultaneously and being innovative, since, as mentioned by Fugate et al. (2010), excellence in logistics is associated with better organizational performance.

All in all, the existing literatures have revealed the fact that logistics performance is a multi-dimensional construct consisting of the dimensions of not only efficiency and effectiveness, but also differentiation. Following the works of Bobbit 2004; Cameron 1986 as quoted in Fugate, Mentzer and Stank, 2010:44, logistics performance is a multi-dimensional and is defined as the degree of efficiency, effectiveness, and differentiation associated with the accomplishment of logistics activities.

Understanding logistics performance has been of interest to logistics researchers and has been conceptualized and empirically tested in a variety of ways (Fugate et. al, 2010:44). Despite this claim, it seems that a few body of literature has dealt with the conceptual model and/or measurement of logistics performance (Graeml and Peinado, 2011:11), but not as comprehensively and in detail as Fugate et. al (2010). With the aim of modeling logistics performance with the concept of simultaneous pursuit of efficiency, effectiveness, and differentiation, they summarized that logistics performance is consisted of the dimensions of efficiency, effectiveness, and differentiation.

Based on review of related literatures and objectives of the study, the following hypotheses were tested:

- ***H1: Logistics efficiency and logistics effectiveness are positive and significantly related.***
- ***H2: Logistics effectiveness and logistics differentiation are positive and significantly related.***
- ***H3: Logistics differentiation and logistics efficiency are positive and significantly related.***

Chapter Three

Methodology and Research Design

3.1 Research Design

This study used explanatory research method because explanatory studies look for explanations of the nature of certain relationships. The primary purpose of explanatory research is to explain why phenomena occur and to predict future occurrences Zikmund (1984). Explanatory studies are characterized by research hypotheses that specify the nature and direction of the relationships between or among variables being studied. Hypothesis testing provides an understanding of the relationships that exist between variables(efficiency, effectiveness and differentiation).

The objective of explanatory research is to define key variables and key relationships. This method helps to explore the existing situation in the area of logistics management practice of the flower industry operating in holeta cluster. Therefore, explanatory research method was finding to be relevant and appropriate. The data are quantitative and almost always require the use of a statistical test to establish the validity of the relationships. This study done on *assess of Logistics Performance in Flower Industry: The Case of Floriculture Company in Ethiopia.*

3.2 Source of data

Both primary and secondary sources of data were obtained for the study. The primary data was obtained directly from respondents through the administration of questionnaires. The primary data provided reliable and accurate firsthand information to the study. The main purposes of this questionnaire were investigate the problematic area of in the flower Company.The secondary data was obtained from the library, internet, journal articles, newspapers and research reports. The idea of secondary data was to gather the necessary information to guide the conduct of the study in order to confirm or reject primary data.

3.3 Data gathering tools

The major data gathering tools of this research was primary and secondary data that means in the primary data the student researcher was use questionnaire in the secondary data the student researcher was use different written document. The above mention is necessary because of this; **Questioner** has become one of the most uses and abuse means of collecting information. It well constructed, a questioner permits the collection of reliable and reasonable valid data in a simple, cheap and timely manner.

Most of the questions in the questionnaire were designed using Likert scale strategy, which measures respondents‟ attitude by asking the extent to which they agree or disagree with the issues at stake. Questionnaire facilitated the collection of data that ensured the best matching of concepts with reality. It helped reduce inconvenience caused by unfavorable interview times and busy schedules.

According to Saunders, (2007) questionnaire is used for explaining research which will enable the study to examine and explain relationships between variables, in particular cause-and-effect relationships. In all,60 questionnaires were circulated of which 60 or all of them were received and analysed using frequency and descriptive statistics tools like mean and standard deviations, with the aid of a software called, Statistical Package for Social Sciences (SPSS). Sample questionnaires can be found in the Appendix. The questionnaires were personally administered to the respondents.

Rank order scaling forces respondents to discriminate among the selected items (Malhorta, 2004). The *logistics performance Variables* were listed and the respondents were asked to rank these variables in terms of the importance to the success of their firm. This strategy used to rank the *Sourcing Criteria Variables.* Likert scales will be use to obtain non-comparative information. Either non-comparative scaling techniques do not compare the object being rated to another object or to some specified standard; they evaluate only one object at a time. Likert scales require respondents to indicate a degree of agreement or disagreement with each series of statements about specific attributes (Malhorta, 2004).

3.4 Sample design

3.4.1 Sampling technique

The aim of this research was the study on assessment of Logistics Performance in Flower Industry: The Case of Floriculture Company in Ethiopia. This research used cluster random sampling from probability technique and purposive (judgment) sampling of non-probability technique.

The main aim of selecting purposive sampling technique was help the researcher in selecting the respondents who have direct relation with the issues under consideration and it enables the researcher to select freely any respondent that the student researcher thinks best fits to the questions.

The purpose of identifying best sampling technique the student researcher must gathered some of supplementary information related to the research topic area. Sometimes in survey sampling, certain amount of information is known about the elements of the population to be studied. For instance, information may be available on the geographical location of the area. The student researcher tries to analysis information about logistics activity in all flower industry from farm area up to airport. According to Ethiopian horticulture development agency (EHDA), all of floriculture companies are classified based on geographical coverage or cluster. All of clusters have the same purpose and they follow the same logistics process from farm up to airport based on this all of them are involved in the select of best fit sampling techniques. primary data can be collected from each cluster to represent the viewpoint of the whole area.

First, the researcher identifies different groups or clusters, and then from each cluster, the researcher selects one cluster through using simple random sampling. The researcher can even opt to include the entire cluster and not just a subset from it. The most common cluster used in research is a geographical cluster. Moreover, I decide to choose the best sampling technique that means cluster-sampling techniques is better for this study and cluster analysis depends on comparative size of separate clusters. The main advantage choosing cluster random sampling techniques for researcher it is the most time-efficient and cost-efficient probability design for

large geographical areas, this method is easy to be used from practicality viewpoint and larger sample size can be used due to increased level of accessibility of perspective sample group members. Finally, holeta cluster are selected through simple random sampling techniques.

3.4.2 Target population

Holeta cluster have 16 companies but four flowers PLC are not function in this time. Holeta cluster have advantage for researcher because this cluster have foreign and local investors and they have excellent experience in the fast economic growth and operate long years in the floriculture investment. Based on this, the target respondent were mid and top level logistics manager, general manager ,owner, and their employees who are doing logistics related activities in the flower company. Respondents were limited to those within Flower Company.

The number of the respondent included from target population in the holeta cluster of flower industry. The student researcher takes all respondents (60 respondents) that mean the researcher does not use sample size because the number of respondent is manageable and meaningful. Currently, closed to 86 companies are engaged in the floriculture industry. According to Ethiopian horticulture development agency, all of floriculture companies classified based on geographical coverage or cluster. Out of 86 companies, 16 companies are operating in holeta cluster. Holeta cluster have advantage for researcher because majority of investor are foreigner and they have excellent experience in the fast economic growth and operate long years in the floriculture investment.

Table 1- sample flower plc and number of employees

No	Company name	Cluster	Address	Status of the Poroject	No of employees
1	Agri Flora PLC	Holeta	Welmera	Operational	6 employees
2	Alliance Flowers PLC	Holeta	Menagesha	Operational	6 employees
3	Drem Flower PLC	Holeta	Menagesha	Operational	4 employees
4	Euro Flora PLC	Holeta	Welmera	Operational	3 employees
5	Flowerama PlC	Holeta	Menagesha	Operational	4 employees
6	Garlica Flowers PLC	Holeta	Menagesha	Under Construction	---
7	Holeta Roses PLC	Holeta	Welmera	Operational	5 employees

8	Joshua Flowers PLC	Holeta	Adisalem	On Plantation	---
9	KAF Rose PLC	Holeta	Adisalem	Under construction	---
10	Linssen Rose Ethiopia PLC	Holeta	Ejere	Operational	4 employees
11	Marginpar Ethiopia PLC	Holeta	Welmera	Operational	6 employees
12	Oromia Wonders PLC	Holeta	Welmera	Operational	5 employees
13	Supra Flower Tech PLC	Holeta	Ejere	Operational	6 employees
14	Top Flower PLC	Holeta	Welmera	Operational	5 employees
15	Okleaf Agriculture PLC	Holeta	Adisalem	Operational	6 employees
16	Husen Alseid	Holeta	Adisalem	Going on exit	---
				T otal	60

Source, from different flower plc human resource report of Feb, 2016.

3.5 Procedure of collection data

The student researcher follows the following procedure for the purpose of data collection process:-

1. The researcher try to read different book to get appropriate data about related to logistics performance and data collection methods
2. Gathered some of supplementary information through using survey sampling,
3. Choose and select the best research design and sampling techniques for the purpose of collection of data
4. Preparation of the instruments. Questionnaire is a principal tool in gathering the data. the first draft of the instrument was made in coordination with the adviser so that the survey tool is reliable and valid.
5. Administrating the questionnaire. The researcher personally distributed the questionnaire to the respondent in different site in holeta cluster after that collect the questionnaire
6. Interpret and analyses the collected data through SPSS software and formulate the conclusion s and recommendation of this study.

3.6. Description of Variables and Measurements

This research was focus on the study on logistics performance in flower industry. The researcher analysis logistics performance through using three dimensions prepared by Fugate et. al (2008). These are logistics differentiation, logistics efficiency and logistics effectiveness.

As concisely presented in the conceptual framework part of the study, all of the above terms define as follows:

- **Logistics differentiation:** It is the value that can be generated by the elements of customer service in relation to competitors (Fugate et. al, 2008).
- **Logistics efficiency:** It is the measure of how well the resources expended are utilized (Fugate et. al, 2008).
- **Logistics effectiveness:** As quoted in Fugate et. al (2010), Mentzer and Konrad's (1991) defined it as the extent to which the logistics function's goal are accomplished

3.7 Pilot Study

According to Sekeran (2003) a pilot test is necessary for testing the reliability of data collection instruments. Pilot study is thus conducted to test weaknesses in design and instrumentation to provide proxy data for selection of a sample. Reliability refers to the consistency of a measure. A test is considered reliable if the same result is got repeatedly (Cooper and Schindler, 2003). The pilot study was done by selecting five respondents from the population and issuing them with the questionnaire. The data obtained was evaluated to ensure that questions were properly answered. However the findings from the pilot test were not included in the final results.

3.8. Validity and Reliability

3.8. 1 Validity

Validity of an instrument is how accurate the instrument is in obtaining the data it intends to collect (Mugenda & Mugenda 2003). Validity indicates the degree to which the instrument measures what it is supposed to measure (Kothari, 2004). To ensure precision, relevance and content validity of the instrument, the questionnaire was subjected to critical evaluation by the researcher and the supervisor. Discussions were held with peers and professional experts in procurement department, who went through the instruments to evaluate if it contained representative sample.

3.8.2 Reliability

To measure the consistency of the scores obtained, and how consistent they were for each individual from one administration of an instrument to another and from one set of items to another, the study used Cronbach's alpha (a measure of the internal consistency of the questionnaire items) using data from all the respondents. Separate reliability tests for each of the variables were computed. The key statistic in interpreting the reliability of the scale was the alpha listed under the reliability co-efficient section at the end of the output. The value of coefficient alpha ranges from zero (no internal consistency) to one (complete internal consistency). As to how large the coefficient should be, a value of no less than 0.70 as a quick rule was used. As shown, all the measurements of the instrument attained a high degree of reliability since they were above 0.70.The study used multiple items in all constructs and so the internal consistency method was applied in the study. Hair et al. (2007) mentioned that the rationale for internal consistency is that the individual items or indicators of the scale should all be measuring the same construct and thus be highly inter- correlated. The measurement scales for the variables in this study were based on a 5-point Likert scale ranging from –strongly agree" to ―Strongly disagree".

Thus, to test the reliability of the instrument, Cronbach alpha relating to all dimensions was computed. Of three dimensions of logistics performance, the Cronbach alpha coefficient range

from 0.70 to 0.79. The alpha coefficient for the overall scale of this study calculated as a reliability indicator is 0.745. It is recommended that the value of Cronbach_s alpha around 0.8 is acceptable. The alpha values in this study are around 0.745. Thus, the internal consistency of the instrument is maintained.

No	Variable	Cronbach alpha individual result	Cronbach alpha total result
1	Logistics efficiency	0.72	0.745
2	Logistics effectiveness	0.79	
3	Logistics differentiation	0.76	

3.9 Data analysis

In analyzing data, this research used a mixed methods approach in that the data collection consisted of both qualitative and quantitative approaches. This method of data collection recognizes that there are weaknesses inherent in each type of data. By combining both quantitative and qualitative data, researchers can neutralize the weaknesses involved in each single method of data collection (Creswell, 2003). Another advantage of the mixed methods approach is that results from one method can help develop or inform the other method. Mixed methods allow research to be conducted using both open and closed ended questions. In addition, multiple forms of data are collected and statistical and text analyses can be performed. By combining these methods, the researcher can provide a comprehensive analysis of the research problem (Creswell, 2003).

Mixed approach data analysis use to produce a valid paper report. The data was summarizing in tables in the form of frequencies, percentages and ratio comparison techniques. Therefore, these methods of data analysis help to interpret possible solution. The researcher use different techniques like SPSS and Simple technique for making the analysis part.

After the data was collect, I went through the data pieces/ questioner at the end of each day of data collection. This was for purposes of screening the data pieces and marking the codes on the different variables, to make the data to enter into the master sheet using SPSS version 16

programs that aided the descriptive statistics tools like the mean and standard deviations employed to analyze the data. The justification for the choice of this program was that, it facilitated word processing and data analysis.

At the end of the data collection process, and when all the codes are enter into the master sheet, data analysis done using SPSS. Frequency tables were generated and cross tabulation was made between relevant variables. I used the output derived from SPSS to discuss the Findings of this study.

3.10. Ethical Clearance

In undertaking any research, there is an ethical responsibility to do the work honestly and with integrity (Adams et al, 2007:35). In light of this view, the student researcher have treated. The literatures consulted in this study are acknowledged appropriately. Further, data collectors have given due attention for requesting the will of all flower plc operating in holeta cluster to be treated as respondents of the study.

All the study participants were informed about the purpose of the study and finally their written and oral consent was obtained before collecting data. The respondent has the right to refuse or terminate at any point of the data collecting.

Concerning the right to anonymity and confidentiality, the participants were not required to write their names on the questionnaire and assured that their responses will not in any way be linked to them. The dissemination of the finding was not referring to specific respondent. In any case, the aim of the study, confidentiality issue, and informed consent was explained and ensured to the study subjects.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

This chapter holds with in itself the presentation and analysis of data gathered from the field to describe vividly, consistent pattern in the data as the result may be studied and interpreted in a concise and meaningful way. Findings from analysis of the study are presented in this chapter.

The researcher targeted on a study on logistics performance in the flower industry: the case of flower plc operating in holeta cluster. The logistics manger, flower owner and other employees (who have direct relation with the logistics activity) was the main source of data. Accordingly, the questionnaires were administered to 60 employees and all questionnaires were returned on time. In addition to this document analysis were made to support the data obtained through questionnaire. The study achieved 100% response rate with 60 respondents, which were targeted responding.

The findings of the study were presented to answer the leading research questions. The results are categorized according to various logistics performance issues dealt with in this study. Data collected through questionnaire were organized in tabular form and analyzed using percentage and mean scores.

4.1. Respondent's Personal information & General information about flower plc

In this section of the research report, a brief description of sampled flower plc with respect to their personal and general flower farm information are presented.

Table 2- Summarized information of respondent and company

No	Item	Description	frequency	Percentage
1	Sex	Male	39	65
		Female	21	35
		Total	60	100
2	Age	20-29	13	21.7
		30-39	13	21.7
		40-49	22	36.7
		50 and above	12	20
		Total	60	100
3	Educational	High school	12	20
		Diploma	27	45
		Degree	19	31.7
		Masters	2	3.3
		Total	60	100
4	Work experience	2 years and fewer	11	18.3
		3-5 years	32	53.3
		6-10 years	12	21.7
		10 and above	4	6.7
		Total	60	100
5	Taking status of training	Yes	8	13.3
		No	52	86.7
		Total	60	100
6	Form of company	Private limited company	60	100
		Partnership	-	-
		Private ownership	-	-
		Share company	-	-
		Public	-	-
		Total	60	100
7	Membership	Yes	48	80
		No	12	20
		Total	60	100

Source-questionnaire, 2016

Demographic Characteristics

The respondents were asked to show their gender, this was expected to guide the researcher on the conclusions regarding the degree of congruence of responses with the gender characteristics on the logistics activity participation. The results as shown in the table 2 show that majority of the respondents were male at 65% while female were 35%. This indicates that majority of the staff working in the organization were male.

Age in years

The respondents were asked to show their age in years, around 36.7 percent of sampled respondents age ranges from 40 to 49 years, each age group of 20-29 and 30 to 39 account 21.7 percent. The others age groups, which include 50 years and above, account 20 percent.

Highest Attained Educational level

The respondents were asked to show their highest attained education level. The results as shown in the table 2 shows that majority of the respondents 35 percent working in firm had attained their education up to degree level while 11.7 percent had attained their education up to post graduate,41.7 percent of the respondents had achieved diploma level, 11.7 percent of sampled respondents were finished high school in their educational qualification. This means that majority of those working in the organization had attained education up to university level and had gained rich information and they were conversant with the process, therefore they were appropriate for responding to our study questions.

Work experience

Furthermore, while 53.3 percent of respondent have experience between 3-5 years,18.3 percent of the respondent experience were 2 years and below, 21.7 percent of the respondent experience were between 6-10 years experience and 6.7 percent of the respondent experience have above 10 years experience.

Training on logistics activity

The respondents were asked to show their highest attained education level. 86.7 percent are not participating formal training about logistics activity and related logistics performance measurement mechanism and the remaining 13.3 percent indicated that the respondents participate formal training. This means that majority of the respondents have no theoretical knowledge about all logistics activity but they done their work through traditional way or through taking command from the above manager.

Form of company

In this study, see the company profile, 100 percent of the sampled flower industries establish as private limited company, while 80 percent of sample flower plc are a member in the Ethiopian horticulture producer and exporter association and 20 percent are not member with association.

4.2. Analysis and Discussion on the dimension of Logistics Performance on flower industry

In this part of the study's report, analysis conducted on data gathered to assess the logistics performance of flower plc based on the three dimensions of logistics performance as developed by Fugate et. al (2010) was presented. Descriptive statistics was used to analyze the data in this study.

Respondent's information for items of logistics efficiency

Table3: Descriptive Statistics for Logistics Efficiency

Descriptive Statistics

Item on Logistics efficiency	Mean	Std. Deviation	N
customer service level/order fulfillment	3.32	1.097	60
transportation cost	3.68	.567	60
warehouse cost	3.93	.634	60
order processing/ information system cost	3.50	.813	60
inventory carry cost/packaging and inventory contrlling cost	3.13	.965	60

SOURCE-questionnaire, 2016

Table 3 shows the descriptive statistics of logistics efficiency dimension of logistics performance of holeta cluster flower industry based on arithmetic mean and standard deviation. It is based on the responses of sample respondents on their flower industry performance on logistics activities for the previous fiscal year. It is taken in to account that numbers 1, 2, 3, 4 and 5 represent very poor, poor, neutral, good and excellent, respectively.

In terms of percent of customer service level or/ and order fulfilment time, transportation cost, warehouse cost, order processing/ information system cost, and inventory carry cost ,the mean scores of the respondents were 3.32,3.68,3.93,3.50 and 3.13, respectively. These show that they rated their holeta cluster flower industry performance for the previous fiscal year as good (beyond good). The standard deviation show the spread of ideas of the respondents and from the table the standard deviation ranges from 0.567 to 1.097 indicating that it is a small value thus respondents were agreeing to the same idea.

Generally, logistics efficiency refers to the internal functioning of logistics and is considered best represented through some ratio of the normal level of inputs (chamberlain 1968; Van der meulen and spijkerman 1985). Specifically, it is considered the ability to provide the desired product/ service mix at a level of cost that is acceptable to the customer (Langley and Holcomb 1992). In a broader sense, it is the ability of the logistics function to manage resources wisely. Thus, the student researcher adopted logistics efficiency as cost minimization and resource utilization system of flower industry. Based on this, researcher was analysis the respondent answer on logistics efficiency dimension on logistics performance of flower plc, while holeta cluster flower industry performing activities more efficiently than its competitors were. In light of this view, it seems that holeta cluster flower industries are well efficiently performing in their major logistical activities. Specifically, the sampled holeta cluster flower industry seem well efficient in their cost management and they must be sale flower product at least cost.

Table 4: Descriptive Statistics for Logistics Effectiveness

Descriptive Statistics

Item on logistics effectiveness	Mean	Std. Deviation	N
Minimize variance	3.63	.736	60
Movement consolidation	3.35	.547	60
Increases Market Coverage:	3.67	.705	60
Product and service quality	3.75	.795	60
Customer Satisfaction:	4.00	.611	60
To deliver as expected	3.25	.437	60
Lifecycle support/reverse logistics/rigid quality standard	4.05	.790	60
Average score	3.6714	0.6601	

SOURCE-questionnaire, 2016

Table 4 shows the descriptive statistics of logistics effectiveness dimension of logistics performance of flower industry based on arithmetic mean and standard deviation. It is based on the responses of sample respondents on their flower farm‘s actual performance compared to planned performance, based on the previous fiscal year results. It is taken in to account that numbers 1, 2, 3, 4 and 5 represent much worse, worse, neutral, better and much better.

In terms of minimize variance, movement consolidation,increase market coverage, product and service quality, to delivery as expected, customer satisfaction and lifecycle support/ reverse logistics the mean scores of the respondents were 3.63, 3.35, 3.67, 3.75,3.25, 4.00 and 4.05 respectively. These show that they rated their flower industry actual performance compared to planned performance based on the previous fiscal year results as better.). The standard deviation show the spread of ideas of the respondents and from the table the standard deviation ranges from 0.437 to 0.795 indicating that it is a small value thus respondents were agreeing to the same idea.

In logistics perspective, it has described as the ability to achieved pre-defined objectives (Langley and Holcomb 1992). Similarly, the student researcher adopt Mentzer and Konrad‘s(1991) definition of logistics effectiveness as the extent to which the logistics function‘s goals are accomplished. Generally, based on the above concept the average mean and standard deviation of the total item of logistics effectiveness represents 3.67 and 0.66 respectively, this shows that most of the respondents shows their level of agreement on logistics effectiveness dimension of logistics performance of flower industry is better.

TABLE 5- Descriptive Statistics of logistics differentiation

Item on logistics differentiation	Mean	Std. Deviation	N
damage free delivery	3.10	.630	60
forecasting accuracy	2.93	.733	60
used technology equipment	3.02	.596	60
competitive price	3.15	.547	60
market destination	3.02	.596	60
Average score	3.044	0.6204	

SOURCE-questionnaire, 2016

Table 5 shows the descriptive statistics of logistics differentiation dimension of logistics performance of holeta cluster flower industry. It is based on the responses of sample respondents on their flower farm‘s performance on logistics activities in comparison to their major competitors. It is taken in to account that numbers 1, 2, 3, 4 and 5 represent far below competitors, below competitors, neutral, above competitors and far above competitors, respectively.

As can be seen from table 6, the mean scores of the respondents for most items of logistics differentiation dimension ranges from 2.93 to 3.15, which shows that holeta cluster flower industry neither perform below nor above or neutral with their major competitors flower farm‘s performance on logistics activities in comparison to their major competitors. Nevertheless, The standard deviation show the spread of ideas of the respondents and from the table the standard deviation ranges from 0.547 to 0.733 indicating that it is a small value thus respondents were agreeing to the same idea. Its average standard deviation, which is 0.6204, depict that there is a variation in the respondents response.

Based on finding some of flower industry operating in holeta cluster have no superior or value adding activity on logistics activity for their customer. Because all of them are, produce the same flower type and give the same service for their customer. To gain competitive advantage over its rivals, a firm is expected to provide comparable customer value by performing activities in a unique way that creates greater buyer value. In light of this view, it seems that in the holeta cluster few flower farmers are relatively performing well in their logistically differentiated activities but the remaining are not.

Logistics activities must provide the best comparative net value to customers(stahl and bounds 1991)in order to compete in today‘s competitive marketplace. Because of the centrality of logistics to customer value creation(flint et al.2005: lambert, gurcia-Dastugue, and Croxton 2005), stated the performance of logistics activities must be perceived as differentially superior to competitors in the same market segment (Bloomberg 1990).

Table 6- Correlation between variable

Correlations

		logistics efficiency	logistics differentiation	logistics effectiveness
logistics efficiency	Pearson Correlation	1	.187	.429**
	Sig. (2-tailed)		.151	.001
	N	60	60	60
logistics differentiation	Pearson Correlation	.187	1	.375**
	Sig. (2-tailed)	.151		.003
	N	60	60	60
logistics effectiveness	Pearson Correlation	.429**	.375**	1
	Sig. (2-tailed)	.001	.003	
	N	60	60	60

**. Correlation is significant at the 0.01 level (2-tailed).

SOURCE-questionnaire, 2016

Table 6 shows the results of correlation analysis for the variables of the research. Based on the pearson correlation coefficient the logistics efficiency and logistics effectiveness has a positively relationship with r= 0.187 and P<0.01. There was a significant relationship between logistics efficiency and logistics differentiation with r=0.429** and P<0.01. Logistics effectiveness was also significantly related with logistics differentiation with r=0.375* and P<0.01. It shows that logistics performance dimensions (logistics differentiation, logistics efficiency and logistics effectiveness) have significant correlation between each other.

Generally, all the logistics variables have a positive relationship with significance important of less than 0.01 degree of error. Therefore, the researcher argues that all the stated variables have a positive relationship among them with a positive coefficient and significant importance. These

depict the fact that the research tool had a predictive validity. Therefore, the impact of one of these variables has a significant impact on the logistics management of flower industry.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1. Summary of Findings

This research had a study on logistics performance of flower industry operating in holeta cluster and further examined the factor that affects logistics performance and the relationship between logistics efficiency, logistics effectiveness, logistics differentiation with logistics performance. To test hypothesis and examine the relationship using Pearson correlation between logistics performance dimensions of flower industry operating in holeta cluster.

The following major findings were found because of the data analysis of the study.

- In terms of logistics efficiency dimension of logistics performance, the average mean scores of the respondents were 3.50. These show that they rated their holeta cluster flower industry performance for the previous fiscal year as good (beyond good) and in terms of logistics effectiveness dimension of logistics performance, the average mean scores of the respondents were 3.68. These show that they rated their flower industry actual performance compared to planned performance based on the previous fiscal year results as better.

- As can be seen from table 6, the mean scores of the respondents for most items of logistics differentiation dimension ranges from 2.93 to 3.15, which shows that holeta cluster flower industry neither perform below nor above or neutral with their major competitors flower farm‘s performance on logistics activities in comparison to their major competitors. Nevertheless, The standard deviation show the spread of ideas of the respondents and from the table the standard deviation ranges from 0.547 to 0.733 indicating that it is a small value thus respondents were agreeing to the same idea. Its average standard deviation, which is 0.6204, depict that there is a variation in the respondents response.

- Finally this study shows the results of correlation analysis for the variables of the research. Based on the pearson correlation coefficient the logistics efficiency and logistics effectiveness has a positively relationship with r= 0.187 and P<0.01. There was a significant relationship between logistics efficiency and logistics differentiation with r=0.429** and P<0.01. Logistics effectiveness was also significantly related with logistics differentiation with r=0.375* and P<0.01. It shows that logistics performance dimensions (logistics differentiation, logistics efficiency and logistics effectiveness) have significant correlation between each other.

5.2. Conclusion

The aim of this research was to study on logistics performance in flower industry operating in holeta cluster. Methods of data analysis were descriptive statistics and correlation and the following conclusions were drawn based on the results of the study.

- To gain competitive advantage over its rivals, a firm is expected to provide comparable customer value by performing activities more efficiently, effectively and differentially than its competitors. In light of this view, holeta cluster flower industry are well efficiently performing in their major logistical activities. Specifically, the sampled holeta cluster flower industry seem well efficient in their cost management and they must be sale flower product at least cost. performing activities in a unique way that creates greater buyer value. In light of this view, it seems that in the holeta cluster few flower farmers are relatively performing well in their logistically differentiated activities.

- Generally, all the logistics variables have a positive relationship with significance important of less than 0.01 degree of error. Therefore, the researcher argues that all the stated variables have a positive relationship among them with a positive coefficient and significant importance. These depict the fact that the research tool had a predictive validity. Therefore, the impact of one of these variables has a significant impact on the logistics management of flower industry.

5.3. Recommendation

Based on the results of the study, the following recommendations are suggested for consideration:

- This study contributes to a better understanding of logistics performance, the interrelationship among its dimensions. These finding provides both theoretical and a managerial insights. This study finding support or contradict the traditionally assumed ―either- or" relationship between efficiency and effectiveness (fisher 1997). The result of this study indicate that pursuing one does not preclude pursuit of the other, but rather the performance dimensions perhaps reinforce each other. The participant of flower industry managers need not assume a trade-off exists between efficiency, effectiveness and differentiation. Strategy formulation and the resulting design of structures and process, does not need to begin with choosing only one of logistics performance dimensions. All three may be pursued simultaneously. These suggestion managers should continue to find approaches to break-through this assumed trade-off. They could pursue efficiency, effectiveness and differentiation of their logistics activity concurrently, which would force managers to be innovative and develop strategies and tactics that overcome these trade-offs.

- Flower industry should continuously improve their logistical performance, among other things, through strengthening and developing excellent practice system. Logistics as Differentiator -Companies are increasingly looking at logistics for improving customer experience and for differentiation. Meeting service level agreements is a basic requirement for moving from customer satisfaction to customer delight. Today is demanding customers require not just fulfillment of requirements, but also cooperation and alignment with their service partners for mutual benefit and revenue growth.

- Sharing data with upstream and downstream partners and aligning the key metrics across the value chain are among the steps companies have taken in this direction. Industry leaders prefer to collaborate with logistics service providers that are adept at moving in step with them. Measuring performance has gradually moved from an internal focus on strategic objectives, to measuring performance across the value chain to include the upstream and downstream partners. In addition, the need to benchmark against industry leaders is forcing companies to look beyond homegrown solutions.

- Flower plc should be further familiarized with sound efficiency and effectiveness improvement measures of logistics for their flower farm in order to improve and augment their performance as a result of an excelled performance in the major logistical functions of their farm. This is believed to be accomplished through creating awareness on the key

measures of logistics performance as can be applied to the peculiar nature of the flower supply chain. Furthermore, they should also create awareness on the importance of an improved logistics performance at their farm for enhancing their organization performance. One strategy could be to support education and training initiatives, which would enable employees to use formal logistics performance mechanisms.

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Appendix

School of Commerce

Department of Logistics and Supply Chain Management

A Study on Logistics Performance in Flower Industry: the Case of flower industry in Holeta Cluster

Dear sir/madam

I wish to seek your assistance, as a participant, with this important research project, which is being conducted as a partial fulfillment for the Degree of Master in logistics and supply chain management at University of Addis Ababa school of logistics and supply chain management. This research project is undertaken as an attempted to study on logistics performance in flowerindustry : the Case of flower industry in Holeta Cluster.

The result of this study will be valuable in achieving a better understanding of logistics performance analysis in the flower industry. This questionnaire has been designed to seek information for purely academic purposes and hence would not affect any one in any case. Thereby, to come up with some workable solutions to overcome the known challenges and

difficulties related to logistics management practices in the company. To this end, the outcome of this study will highly depend upon your response.

With sincerity I would like to extend my deep appreciation to your company and the staff for the willingness and cooperation in undertaking this valuable research. I request your kind cooperation in answering the questions as truthfully as possible and your response will be highly confidential.

Sincerely yours

Addishiwot Nigatu

Part 1- Profile of Respondent and company

The following questions refers to your personal background and experience and you are cordially invited to provide the most appropriate response(by putting a thick mark in the box provided) to each of the questions as per the response choices provided under each questions.

1. Sex of respondent

   Female □ Male□

2. Your current age in years

   20-29 □ 30-39 □ 40-49 □ 50 and above□

3. What was the highest level of education you completed?

   Mark only one

   High school □ Certificate □ Diploma □ Bachelor degree □

   PHD □ Masters Degree □ Elementary school □ other_____

4. How many years work in this company?

   2 years and fewer□ 3-5 years □ 6-10 years□

   11-20 years□ Other_____

5. Did you attend any formal training after starting job in this company related to performance measurement mechanism?

   Yes □ No □

6. Form of company:

   Private Limited Company□ Share Company □

   Partnership□ Public □

   Private Ownership □ other_____

7. Does your company become a member of Ethiopian Horticulture Producer Exporters Association (EHPEA)?

Yes □ No□

Part 2-Three Dimensions of logistics performance

Please rate your flower industry performance on logistics activity for the previous fiscal year						
No	**Logistics Efficiency** Items	**Very poor(1)**	**poor (2)**	**neutral(3)**	**good (4)**	**excellent (5)**
1	Increase customer service level/order fulfillment	1	2	3	4	5
2	Reduce transportation cost	1	2	3	4	5
3	Reduce warehouse cost	1	2	3	4	5
4	Reduce order processing/ information system cost	1	2	3	4	5
5	Reduce inventory carrying cost/inventory controlling, packaging and disposal cost	1	2	3	4	5
Please rate your flower industry actual performance compare to budgeted performance, based on previous fiscal year result						
No	**Logistics Effectiveness** Items	**Much Worse (1)**	**Worse (2)**	**Neutral (3)**	**Better (4)**	**Much Better (5)**
1	Minimize variance	1	2	3	4	5
2	Movement consolidation	1	2	3	4	5
3	Increases Market Coverage:	1	2	3	4	5
4	Product and service quality	1	2	3	4	5
5	Customer Satisfaction increase:	1	2	3	4	5

6	To deliver as expected	1	2	3	4	5
7	Lifecycle support/reverse logistics/rigid quality standard	1	2	3	4	5
Please rate your flower industry actual performance on logistics activities in comparison to your major competitors						
No	**Logistics differentiation** Items	**Far Below Competitors (1)**	**Below Competitors (2)**	**Neutral (3)**	**Above Competitors (4)**	**Far Above Competitors**
1.	Damage free delivery	1	2	3	4	5
2.	Forecasting accuracy	1	2	3	4	5
3.	Used Technology equipment	1	2	3	4	5
4.	Use competitive Price	1	2	3	4	5
5.	Increase distribution/ market destination	1	2	3	4	5

- If there any other variable (please specify)_____

Open ended question

1. What are the major problems in the current logistics practices?

_____

_____

_____

_____

2. If you have general comments about logistics performance analysis and evaluation system in the flower industry, just put forward in the space provided._____

_____

_____

_____

_____

_____